



EIA for an Exploration Right application for Petroleum and  
Natural Gas on various farms in a portion of the Free State and  
Mpumalanga Provinces (12/3/320 ER)

Scoping Report

SLR Project No.: 722.01083.00003

Report No.: 2

Revision No.: 0

January 2017

Afro Energy (Pty) Ltd





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# EIA FOR AN EXPLORATION RIGHT APPLICATION FOR PETROLEUM AND NATURAL GAS ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

## EXECUTIVE SUMMARY

### 1. INTRODUCTION

#### 1.1 PURPOSE OF THE SCOPING REPORT

This Scoping Report has been compiled as part of the Scoping and Environmental Impact Assessment (hereafter collectively referred to as “EIA”) process that is being undertaken as part of the application by Afro Energy (Pty) Ltd (hereafter referred to as “Afro Energy”) to apply for an Exploration Right (ER) to explore for “Petroleum and Natural Gas” on various farms in a portion of the Free State and Mpumalanga provinces (12/3/320 ER).

The compilation of the Scoping Report has been informed by comments received from Interested and/or Affected Parties (I&APs) during the Pre-application Public Participation Process and on the draft Scoping Report. It should be noted that all significant changes to the draft report are underlined and in a different font (Times New Roman) to the rest of the text.

This report is submitted to the Petroleum Agency of South Africa (PASA)<sup>1</sup> for consideration as part of the application for Environmental Authorisation in terms of Chapter 5 of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA), as amended.

#### 1.2 PROJECT BACKGROUND

On 8 July 2016, Afro Energy lodged an application for an ER with PASA to explore for “Petroleum and Natural Gas” in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA). PASA accepted the application on 13 July 2016. The ER application area is extensive and encompasses various farms in the Free State and Mpumalanga provinces (see Figure 1).

Afro Energy previously held a Technical Co-operation Permit (TCP) for the same area. An analysis of the data collected as part of the TCP (including historical coring) has indicated that conditions are permissive for the occurrence of methane-rich gas in underground coal seams and associated geological strata in the ER area. Afro Energy is now proposing to further explore the area for Coal Bed Methane (CBM) gas resources.

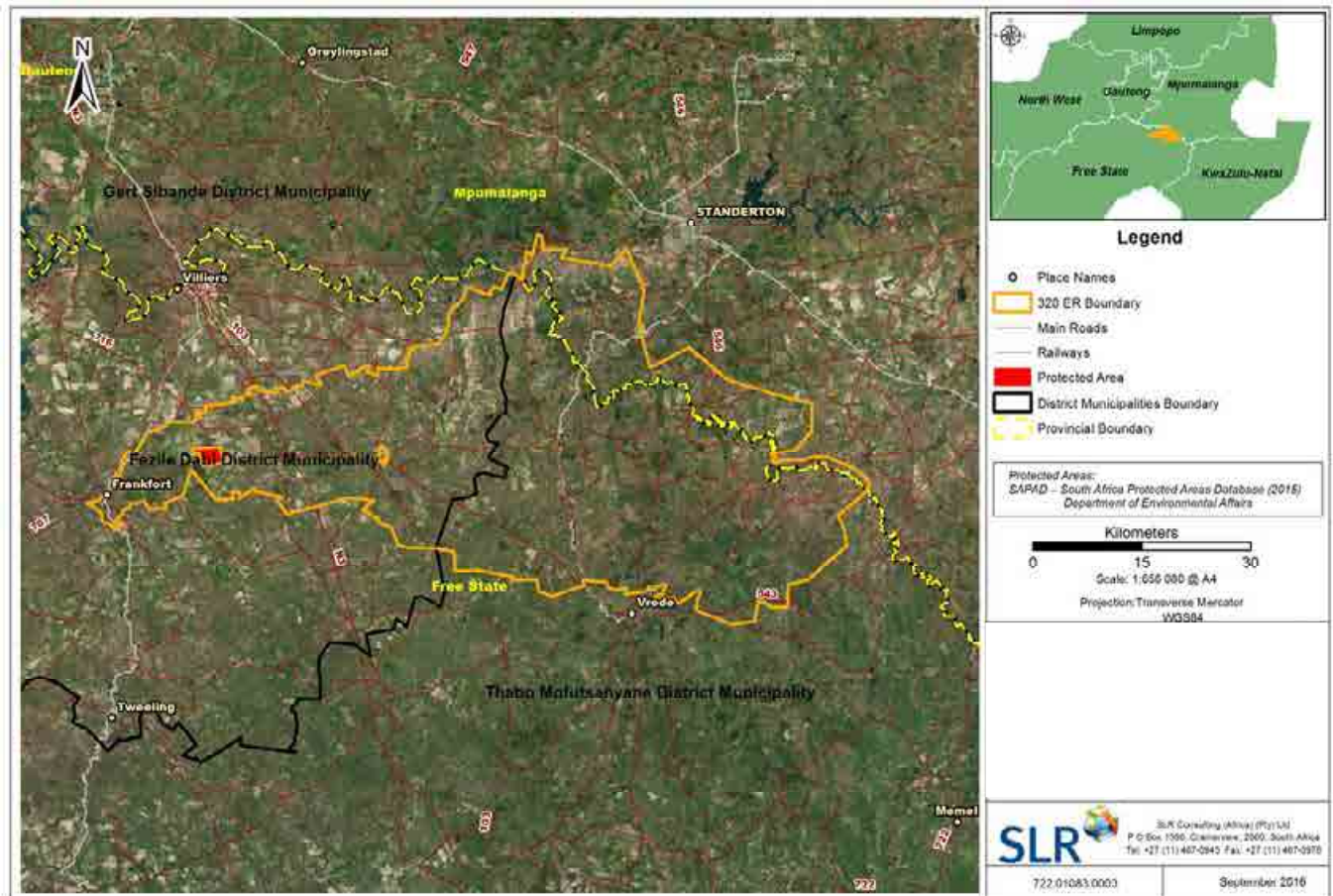
The application is for undertaking early-phase petroleum exploration, which is aimed at determining the presence of CBM gas resources that could warrant further exploration. The initial exploration work programme is restricted to an aeromagnetic survey and drilling of up to four stratigraphic core boreholes. No stimulation, pressure testing, hydraulic fracturing or water abstraction is included in the proposed exploration work.

Based on Afro Energy's existing ER in the Amersfoort area and its success of extracting commercial rates of gas from unstimulated test wells, well stimulation (e.g. hydraulic fracturing) will not, at any time, be considered as an activity for this project. This applies to any possible future work, not just what is currently proposed.

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<sup>1</sup> PASA is the designated agency, in terms of Section 70 of the MPRDA, responsible for the regulation and administration of exploration and production applications and activities.





**Figure 1: General locality plan of ER application area.**

### 1.3 SUMMARY OF AUTHORISATION REQUIREMENTS

An application for an ER requires statutory approval in terms of both the MPRDA and NEMA. In terms of Section 79 of the MPRDA an ER is required from the Minister of Mineral Resources (or delegated authority) prior to the commencement of any exploration activities. A requirement for obtaining an ER is that an applicant must comply with Chapter 5 of NEMA with regards to consultation and reporting.

In terms of the EIA Regulations 2014, promulgated in terms of Chapter 5 of NEMA, any activity which requires an ER under the MPRDA may not commence without Environmental Authorisation from the competent authority, the Minister of Mineral Resources (or delegated authority), to carry out the proposed exploration programme. In order for PASA, as the delegated authority, to consider an application for Environmental Authorisation and make a recommendation to the Minister of Mineral Resources (or delegated authority), an EIA process must be undertaken.

SLR has been appointed by Afro Energy as the Environmental Assessment Practitioner (EAP) to undertake the EIA and associated public participation process to meet the relevant requirements of the MPRDA, NEMA and Regulations thereto.

## 2. EIA METHODOLOGY

### 2.1 SCOPING PHASE

#### 2.1.1 Pre-Application Public Participation Process

Although this step is not a legislated requirement of the EIA Regulations 2014, it provides an opportunity to notify landowners, key stakeholders and other I&APs of the proposed project and to raise any issues or concerns regarding the proposed exploration activities. Steps undertaken during the Pre-application Public Participation Process are summarised below:

- Competent authority consultation: Afro Energy held a pre-application meeting with PASA on 14 September 2016;
- Landowner identification: Afro Energy identified all properties included as part of the ER application area;
- I&AP identification: In addition to landowners, a preliminary I&AP database of authorities, Organs of State, Non-Governmental Organisations, Community-based Organisations and other key stakeholders (including farmers' unions) with a potential interest in the ER application was compiled. Additional I&APs were added to the database following responses to the advertisements and notification letter, and attendees at the Information-sharing Meetings (see bullets below);
- Meetings with directly affected landowners: In September 2016 Afro Energy commenced with a process of discussing possible borehole locations with directly affected landowners. Meetings were held with various landowners in September, October and November 2016;
- Notification letter and Background Information Document (BID): All identified landowners and I&APs were notified of the application and EIA process by means of a notification letter and BID. I&APs had until the 21 October 2016 to submit initial comments to SLR in order for them to be included in the Scoping Report.
- Advertisements: Press advertisements providing notification of the ER application and EIA process were placed in the following newspapers on 23 September 2016: Frankfort Herald, Vrede Record, and Cosmos News.
- Site notices: Site notices (in English and Afrikaans) were placed at multiple locations in the ER application area, including Frankfort, Standerton, Cornelia and Vrede; and
- Information-sharing meetings: Four information-sharing meetings were held during October 2016 in or near the towns of Frankfort, Standerton, Cornelia and Vrede.

A total of 28 written submissions were received during the pre-application public participation process. All written comments received were collated, and responded to, in an initial Comments and Responses Report, which was appended to the draft Scoping Report.

#### 2.1.2 Application for Environmental Authorisation

Afro Energy submitted a motivation to PASA to extend the submission deadline of the application for Environmental Authorisation. PASA agreed to the request and extended the submission deadline to 12 November 2016. On 8 November 2016, Afro Energy submitted an application to PASA for Environmental Authorisation of the proposed ER application and associated exploration activities (i.e. Activity 18 in Listing Notice 2 and Activity 12 in Listing Notice 3) in terms of Section 24(5) of NEMA.

PASA acknowledged receipt of the Application for Environmental Authorisation on 11 November 2016 and requested that the Scoping Report be submitted to them on or before 13 January 2017.

### 2.1.3 Compilation and Review of Scoping Report

This Scoping Report has been prepared in compliance with Appendix 2 of the EIA Regulations 2014 and has been informed by comments received during the Pre-application Public Participation Process and by comments received on the draft Scoping Report.

The draft Scoping Report was distributed for a 30-day comment period from 9 November to 9 December 2016 in order to provide I&APs with an opportunity to comment on any aspect of the proposed project and the findings of the Scoping Phase. A total of 18 written submissions were received during the draft Scoping Report review and comment period. All comments received have been collated, and responded to, in an updated Comments and Responses Report (see Appendix 5.10 of the main report). The key issues identified by the project team during the Scoping Phase, with I&AP input, are summarised in Section 5.

### 2.1.3 Completion of the Scoping Phase

If the Scoping Report is accepted, the project will proceed onto the EIA Phase (see Section 2.2). A Plan of Study for EIA as required in terms of Section 2(i) of Appendix 2 of GN R982 is included in Section 8 of the Scoping Report.

## 2.2 EIA PHASE

### 2.2.1 Specialist Studies

Three specialist studies will be commissioned to address the key issues that require further investigation and detailed assessment, namely ecological, groundwater and heritage.

The specialist studies will involve the gathering of data (desktop and site visit of proposed drill locations) relevant to identifying and assessing environmental impacts that may occur as a result of the proposed project. These impacts will then be assessed according to pre-defined rating scales. Specialists will also recommend appropriate mitigation or optimisation measures to minimise potential impacts or enhance potential benefits, respectively.

### 2.2.2 Integration and assessment

The specialist information and other relevant information will be integrated into an Environmental Impact Report (EIR), which will include an Environmental Management Programme (EMPr). The specialist studies will be included as appendices to the EIR. The EIR will be released for a 30-day comment period and all I&APs on the project database will be notified when the EIR is available for comment.

After closure of the comment period, all comments received on the draft report will be incorporated and responded to in a Comments and Responses Report. The draft report will then be updated to a final report, which will include the Comments and Responses Report, and will be submitted to PASA for consideration and decision-making by the Minister of Mineral Resources.

After the Minister of Mineral Resources (or delegated authority) has reached a decision, all I&APs on the project database will be notified of the outcome of the application and the reasons for the decision. A statutory appeal period in terms of the National Appeal Regulations, 2014 (GN No. R993) will follow the issuing of the decision.

### 3. PROJECT DESCRIPTION

#### 3.1 WHAT IS COAL BED METHANE?

CBM is a natural gas, comprising mostly methane (CH<sub>4</sub>), that is often found in association with coal deposits where it is created as a by-product during the formation of coal (“coalification process”). CBM is different from typical conventional gas reservoirs, where the gas migrates from the source rock to a reservoir. In the case of CBM, coal is both the source and the reservoir. The methane is trapped in fine fractures within the coal matrix (and migration into the overlying / underlying geological strata), as a result of the pressure on the coal seam from overlying geological strata and water that generally fills the void spaces.

Most coals, although not all, have a low porosity and low permeability, and CBM is generally only released if the overburden pressure is reduced, which normally involves the dewatering of the formation through a well (due to reduced hydrostatic pressure). Lowering the pressure allows the formation of free gas, which raises the gas permeability of the coal and facilitates the migration of gas into the wellbore. The lower pressure releases methane adsorbed on the coal face, which then flows to the wellbore.

If the coal seam is permeable, dewatering the seam is enough to start gas flowing from the well. However, if the seam is not sufficiently permeable, well stimulation may be necessary. Afro Energy has successfully completed wells, requiring no stimulation / hydraulic fracturing, in coal seams and associated sandstones in the Amersfoort area. The same is expected for the ER application area, which is located approximately 50 km to the south-west of Amersfoort.

#### 3.2 NEED AND DESIRABILITY

There is a drive from national and provincial Governments to stimulate development and grow the economy of South Africa. In order to facilitate this economic growth, there is a need to ensure that there is sufficient capacity in the country’s electricity supply by diversifying the primary energy sources within South Africa. One of the proposals to meet this aim is to develop the oil and gas sector within the country.

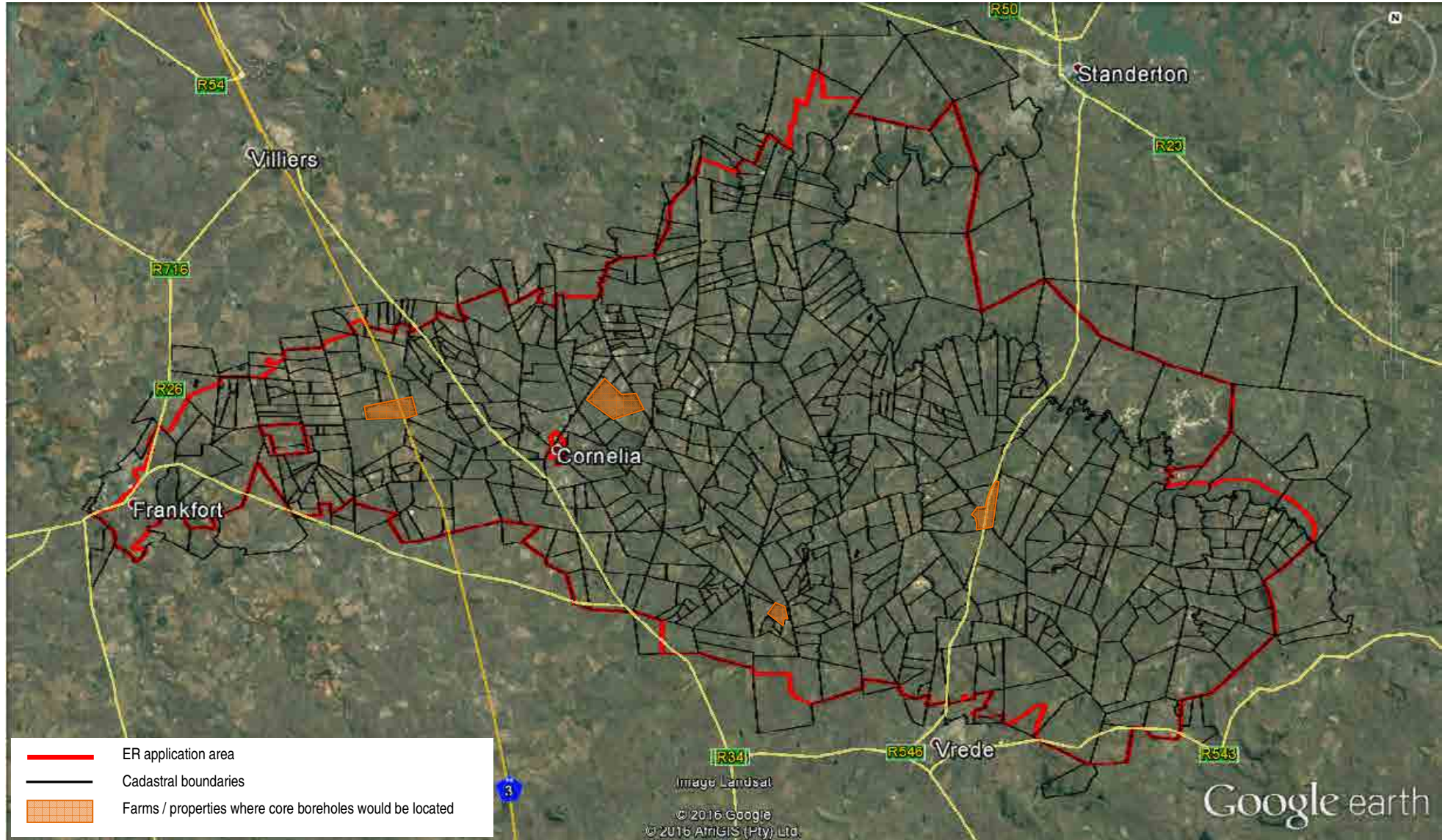
Afro Energy’s ultimate goal is to provide a reliable source of “cleaner” energy in order to address the current energy crisis facing South Africa by diversifying the current energy mix, which is considered to be a key aspect to growing the economy of South Africa in the future. The proposed exploration activities would allow for the determination of whether or not petroleum and gas resources are located within the ER application area. By gaining a better understanding of the extent, nature and economic feasibility of extracting these potential resources, the viability of developing indigenous gas resources would be better understood.

At the same time, it is acknowledged that the promotion of the oil and gas sector could also be considered in contradiction with other plans and policies, which identify the need to reduce the reliance on fossil fuels for electricity generation. Nevertheless, the current limitations of renewable energy technologies are such, that there is still a need to include fossil fuels within the energy mix of the country.

#### 3.3 EXPLORATION RIGHT APPLICATION AREA

The ER application area mirrors the area over which Afro Energy previously held a TCP. It is located roughly between the towns of Standerton in the north, Frankfort in the west and Vrede in the east, which falls within portions of both the Free State and Mpumalanga provinces. The ER application area includes 1 047 farms over an area of approximately 240 000 ha (see Figure 2). The ER application area excludes all properties where the granting of an ER is prohibited by Section 48 of the MPRDA.





**Figure 2: ER application area showing farm boundaries and those properties directly affected.**

### 3.4 PROPOSED EXPLORATION WORK PROGRAMME

Afro Energy is at the beginning of exploration process and at this stage is only seeking authorisation to undertake early-phase exploration activities. This is the second step in determining if there is a likely CBM resource in the ER area that would warrant further investigation (the first phase having been the technical study undertaken as part of the TCP). At this stage it is not known whether there are viable CBM reserves in the ER application area. The proposed exploration work programme is designed to improve the understanding of the regional geology and inform the potential for the occurrence of a CBM gas resource. The proposed three-year exploration work programme includes the following activities:

- Core borehole drilling: Originally Afro Energy proposed to drill up to five stratigraphic core boreholes within the ER area as part of the early exploration work programme based on the data collected as part of the TCP. However, following discussions with the directly affected landowners only four boreholes are now proposed (see Figure 2 for borehole locations<sup>2</sup>). Afro Energy is currently in the process of discussing possible locations on each farm with directly affected landowners. These site locations will be defined and site specific impact assessments undertaken during the course of the EIA process; and
- Aeromagnetic survey: An aeromagnetic survey (approximately 50 km<sup>2</sup> in extent) would be undertaken within the ER area.

#### 3.5.1 Core Borehole Drilling

The proposal is to drill at least three of the four boreholes during the first year, with the fourth borehole being drilled during the second year. These boreholes have no purpose beyond exploration.

##### Drilling procedure

Afro Energy proposes to use a rotary (diamond) core drilling method to drill the stratigraphic core boreholes to determine gas potential. This is the same technique that was used for the more than 150 historical coal exploration boreholes that have been drilled in this same area over the years. A diagrammatic representation of a core borehole is shown in the Figure 3. Drilling requires the use of a truck or trailer mounted, mobile drilling rig at target sites (see Figure 4). The drill rig would be accompanied by supporting equipment (vehicles, trailers, compressors, water tanks, pumps, caravan, etc.) and would be manned by a staff of approximately five persons. A typical diamond core drill rig and equipment requires an operating area of approximately 1 000 m<sup>2</sup> (33 m by 33 m).

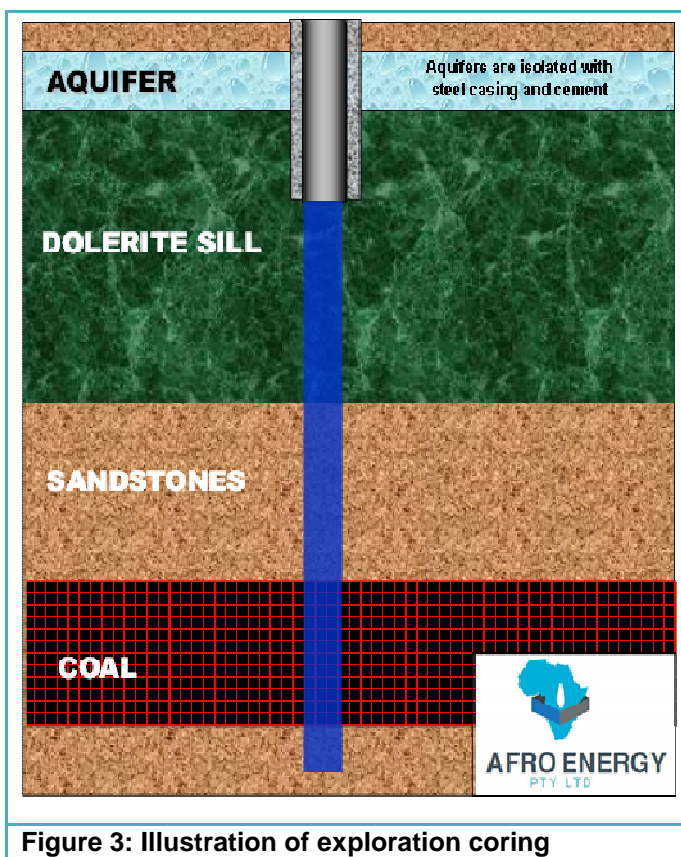


Figure 3: Illustration of exploration coring

<sup>2</sup> The Regulations on Petroleum Exploration and Production (GN R466, July 2015) prohibit “wells” within 1 km of a wetland. There is, however, some ambiguity as to the applicability of this setback distance to stratigraphic core boreholes (as “stratigraphic wells” are defined separately to “wells”) and is currently under review by PASA and the Department of Water and Sanitation. The interpretation of these Regulations will be investigated further with the relevant authorities during the next phase of the EIA. In addition, the proximity of the proposed core boreholes in relation to wetlands will be confirmed during the on-site specialist investigations and, if necessary, boreholes may need to be relocated to comply with this setback distance.



The drilling rig would drill into the underground coal seams which are generally located at depths of greater than 100 m below the surface. It is possible that drilling may go as deep as 800 m. In order to protect near surface aquifers, all exploration boreholes would be cased and cemented to depths below all potential aquifers. Water and biodegradable drilling fluids would be added down the hole to lubricate the drill bit, remove drill muds and cuttings, and maintain ideal hole conditions.

Cores would be extracted from the coal seams (see Figure 5), collected in sample canisters and taken to the laboratory for desorption testing, i.e. where samples are examined, described and tested for gas quantity and quality. Wireline logging would also be performed by lowering a 'logging tool' into the boreholes in order to record the petrophysical properties. These readings are used to confirm the presence or absence of gas in the sandstone formations.

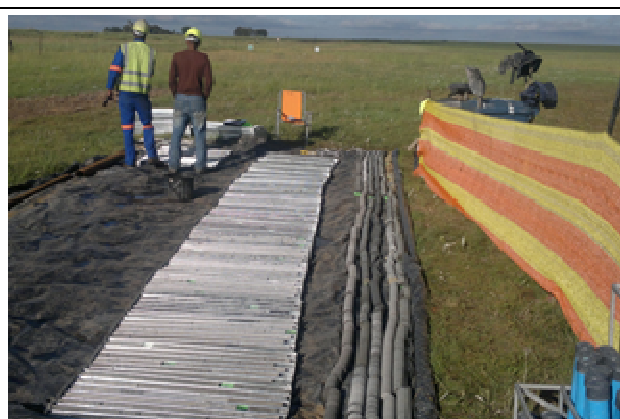
The drilling operation would be undertaken during daylight hours only, normally between 06h00 and 18h00 hours. It is anticipated that the core drilling at a site would be completed within three to four weeks.

### Drilling fluids

Drilling through rock requires the use of various drilling additives to lubricate the drill bit and maintain ideal hole conditions. The exact combination of the drilling fluids depends on the specific drilling conditions. The drilling additives used include a variety of products that are widely used in the South African and international prospecting and water borehole drilling industries. The additives are largely biodegradable and are not rated as hazardous.



**Figure 4: Typical core borehole drilling rig**



**Figure 5: Core laydown area**

### Water use

Water required for the operation of the drilling rig would be obtained locally (e.g. dam, river, stream or borehole), by agreement with landowners and in terms of regulatory requirements. Approximately 5 000 litres of water per day would be required per core borehole, if drilling conditions are reasonably good and the formation is solid. Thus the total water use per hole over a four week period is estimated to be in the order of 140 000 litres. This is, however, considered to be an over estimation as the water would be recycled in aboveground skips (see Figure 6).

### Drilling completion and rehabilitation

Once drilling is completed, the rig, all associated equipment and waste products, would be removed from site. The core hole would be capped pending further investigation or sealed / plugged with cement if not required further. In the case of sealing the borehole a down hole cement plug would be placed below all potential aquifers and the balance of the hole plugged with bentonite fluid. The steel casing would be cut below ground level (see Figure 7). Rehabilitation would be undertaken, in consultation with the landowner, to re-establish the pre-exploration land use.



**Figure 6: Above-ground skips for reuse of drilling fluid**



**Figure 7: Completed exploration borehole (stand pipe still to be cut below ground level)**

**3.5.2 Aeromagnetic Survey**

An aeromagnetic survey is a common type of geophysical survey carried out to aid in the production of geological maps that are commonly used during mineral and petroleum exploration. Surveys involve grid-based flights using a light fixed wing aircraft (see Figure 8), which is fitted with a magnetometer. The aircraft flies at slow speeds (~ 130 knots) and at an altitude of between 40 and 60 m above ground. As the aircraft flies, the magnetometer measures and records the total intensity of the magnetic field. The resulting aeromagnetic map shows the spatial distribution and relative abundance of magnetic minerals (most commonly the iron oxide mineral magnetite) in the upper levels of the Earth's crust. Since different rock types differ in their content of magnetic minerals, the magnetic map allows a visualisation of the geological structure of the upper crust in the subsurface, particularly the spatial geometry of bodies of rock and the presence of faults and folds.



**Figure 8: Typical survey plane**

Based on the drilling results, it is envisaged that up to a maximum of 50 km<sup>2</sup> would be surveyed with a spacing of between 500 m and 750 m between lines. In good weather the survey would take approximately 8 days to complete. As this survey would be undertaken by aircraft, there would be no footprint on the ground.

**4. DESCRIPTION OF THE AFFECTED ENVIRONMENT**

This section provides a generic description of existing biophysical and social environment that could potentially be affected by the proposed exploration activities. More detailed site specific information will be provided in the next phase when site assessments have been undertaken at each of the proposed drilling locations.



#### 4.1 GEOLOGY AND SOILS

The ER application area lies in the north-east of the Karoo Basin. The geology of the proposed ER application area comprises Ecca Group outcrops in the northern and central regions. In the ER application area, the Ecca Group is represented by black silty shale with thin mudstone or sandstone of the Volksrust Formation and sandstone of the Vryheid Formation. In the central and southern regions, sandstone and mudstone of the Tarkastad Subgroup (Beaufort Group) can be found overlying the formations of the Ecca Group. Karoo dolerite dykes, including sheet and sill outcrops, can be found throughout the ER application area.

Four main soil types occur within the ER application area, with the area dominated by well-structured soils with a high clay content.

#### 4.2 VEGETATION

The ER application project area is located within the Grassland Biome, which is the largest of South Africa's biomes, and is considered to have an extremely high biodiversity, second only to the Fynbos Biome. This biome is the most threatened due to its suitability for human habitation, and many of the land-uses upon which food-production and other vital economic activities depend.

Four vegetation types are found within the ER application area, including:

- Frankfort Highveld Grassland (Vulnerable);
- Soweto Highveld Grassland (Endangered);
- Northern Free State Shrubland (Least Threatened); and
- Eastern Temperate Freshwater Wetland (Least Threatened).

The ER application area falls across two provinces each with biodiversity conservation plans prepared by the provincial departments. These conservation plans, including the Free State Provincial Biodiversity Plan (2015) and the Mpumalanga Biodiversity Sector Plan (SANBI), provide an assessment of the value of areas as determined by their necessity in meeting defined conservation targets. CBAs and Ecological Support Areas (ESA) within the ER application Area are shown in the Scoping Report.

#### 4.3 FAUNA

Numerous faunal species such as birds, amphibians, reptiles, mammals, fish and insects are associated with the various vegetation units located in the ER application area. Species of concern that are likely to occur within the ER application area according to International Union Conservation of Nature (IUCN) in conjunction with the Nature Conservation Bill (2007) and the Mpumalanga Province State of the Environment Report (2003) are presented in the Scoping Report.

#### 4.4 HYDROLOGY

The ER application area falls within the Upper Vaal Water Management Area (WMA), which covers a catchment area of 55 565 km<sup>2</sup>. The Upper Vaal is the uppermost WMA in the Vaal River catchment and one of five WMAs in the Orange River Basin, of which the Vaal River catchment forms a major component.

Major rivers in the Upper Vaal WMA include the Vaal and its tributary, the Wilge River. Other tributaries of note include the Klip, Liebenbergsvlei, Waterval, Suiderbosrand and Mooi Rivers. There are no natural lakes in the WMA. Important wetlands occur along the Klip River, with several vlei areas elsewhere in the WMA.

The WMA includes the very important dams Vaal Dam, Grootdraai Dam and Sterkfontein Dam. Numerous farm dams have also been built in the catchment of Vaal Dam, which negatively impact on the inflow to Vaal Dam. The total water requirements in the Upper Vaal WMA is 2 424 million m<sup>3</sup>/annum.

Naturally the quality of surface water in the WMA is good, particularly in those streams in the north-western parts which receive outflow from the dolomitic aquifers in the region. However, the large quantities of urban and industrial effluent, together with urban wash-off and mine pumping, have a major impact on the water quality in some tributary rivers in the north western part of the water management area (e.g. Waterval, Blesbokspruit, Natalspruit, Klip) and particularly on the Vaal River downstream of Vaal Dam.

#### 4.5 GROUNDWATER

The ER application area is classified as a “minor” aquifer region, which implies a moderately yielding aquifer system of variable water quality in terms of the Aquifer Classification Map of South Africa. Certain parts of the ER application area are classified as a “poor” aquifer region, which implies a low to negligible yielding aquifer system with moderate to poor water quality. Although borehole yields in the deeper aquifer are generally, considered low, structural features such as faults and fractures can produce higher yielding boreholes.

The Groundwater Quality Map of South Africa (DWA, 2012b) indicates that the groundwater quality that can be expected within the exploration area has electrical conductivity concentrations from low (0 – 70 mS/m) to high (150 – 370 mS/m) where the water will have a noticeable salty taste.

#### 4.5 HERITAGE

The ER application area does not include any world heritage sites or national heritage sites as recognised by SAHRA. Provincial heritage sites as recognised by SAHRA that are located in the vicinity, but outside, of the ER application area are presented in the Scoping Report. The presence of any other heritage sites / resources (e.g. artefacts, tools, etc.) will be determined during the onsite investigations undertaken during the next phase of the EIA.

#### 4.5 SOCIO-ECONOMIC

The ER application area overlaps with the Free State and Mpumalanga provincial border and falls under the jurisdiction of the following district municipalities:

- Free State
  - > Fezile Dabi District Municipality
  - > Thabo Mofutsanyana District Municipality
- Mpumalanga
  - > Gert Sibande District Municipality

The ER application area is located roughly between the towns of Standerton (Mpumalanga) in the north, Frankfort (Free State) in the west and Vrede (Free State) in the east. Cornelia (Free State) is located within the proposed ER boundary. All residential areas (i.e. erfes) of the towns are excluded from the ER application area.

The Free State and the Mpumalanga highveld form part of what is known as South Africa’s “bread basket”. Maize is the dominant field crop in these two provinces, followed by wheat, sunflowers, dry beans, grain

sorghum and groundnuts. In Mpumalanga province intensive crop farming under irrigation is practiced along lower river basins in the Lowveld, notably along the Komati and Crocodile rivers.

#### 4.6 PROTECTED AREAS

One protected area, the Lourensa Game Farm, is located in the study area, approximately 13 km to the east of Frankfort. This protected area is 6.81 km<sup>2</sup> in extent and has been excluded from the ER application area.

The ER application area overlaps with four National Protected Areas Expansion Strategy (NPAES) focus areas for land-based protected area expansion. The areas are large, intact and unfragmented areas of high importance for biodiversity representation and ecological persistence, suitable for the creation or expansion of large protected areas. It should be noted that these areas should not be seen as future boundaries of protected areas, as in many cases only a portion of a particular focus area would be required to meet the protected area targets set in the NPAES.

The Mpumalanga Grassland Important Bird Area (IBA) extends over the eastern portion of the ER application area. Proposed core drilling sites are located outside of this IBA.

### 5. KEY PROJECT ISSUES AND IMPACTS

#### 5.1 ISSUES RELATED TO ACTIVITIES PROPOSED AS PART OF THE CURRENT WORK PROGRAMME

Issues and impacts that may result due to the proposed exploration work programme, and which will be further investigated and assessed / addressed in the next phase of the EIA, are summarised below. Full details of these issues, including possible mitigation measures, are included in Section 6.1 of the Scoping Report.

##### 5.1.1 Impact on Ecology

- **Loss of or disturbance to vegetation and faunal habitats**  
Vegetation would be cleared and/or disturbed as a result of the proposed core drilling activities, including the establishment of work platforms, possible creation of new access tracks, etc. The clearing of vegetation and exploration activities may also result in the loss or disturbance to habitats of faunal significance.
- **Disturbance to and mortality of fauna**  
In addition to the indirect impact on fauna as a result of loss or damage to natural vegetation (faunal habitat), animals in the vicinity of the drill sites may be affected by increased human presence / activity, and increased noise and vibration generated by vehicles and core drilling.
- **Enabling the establishment of alien and invasive species in disturbed areas**  
The establishment of alien and invasive plant species may be enabled by disturbances to the natural vegetation. Thus vegetation clearance and soil excavations during exploration could be the catalyst that enables alien and invasive plant species to colonise or proliferate in new areas. The introduction of alien invasive vegetation could occur as a result of vehicular traffic and the import of materials.

##### 5.1.2 Impact to Groundwater

- **Altered hydrogeological regime and groundwater availability**  
Core hole drilling would more than likely involve interaction with groundwater, which could have an impact on groundwater availability.

- **Contamination of groundwater resources**

Contamination of groundwater could occur as a result of the mixing of water (including any contaminants and gas) from different stratigraphic aquifers, the use of drilling fluids during core hole drilling, and accidental spillages and leaks.

- **Water consumption**

Water would be required for the operation of the core hole drilling rig. The use of groundwater may compete with existing users for the 3 to 4 week drilling period at a given location.

### 5.1.3 Impact to Surface Water

- **Altered surface water hydrological regime**

Potential changes to the surface water hydrological regime (surface flow, drainage patterns, sediment load and availability) could have secondary impacts on water users and terrestrial and aquatic environment.

- **Contamination of surface water resources**

As for groundwater contamination, leaks and spills from vehicles, machinery and handling of potential pollutants (e.g. fuel, and lubricants) during activities in the field could potentially contaminate surface water resources. In addition, inadequate management of surface sumps could result in the contamination of surface water resources. The release of contaminants into water resources could result in a deterioration of water quality, limiting use by water users, as well as damaging aquatic ecosystems.

- **Water consumption**

Water would be required for the operation of the core hole drilling rig. The use of surface water may compete with existing users for the 3 to 4 week drilling period at a given location.

### 5.1.4 Impact to Soils

- **Physical impact on soils (increased erosion / compaction)**

The exposure of soils through vegetation clearance and / or physical disturbance of exposed soils may increase the risk of erosion (by wind and water), while the repetitive movement of vehicles and machinery over such surfaces could compact soils. These impacts may collectively affect the surface hydrology, damage soil structure, reduce aeration, soil permeability, infiltration rates and water retention capacity and retard the regeneration of vegetation. Reduced infiltration could also result in an increase in surface runoff, potentially causing increased erosion.

- **Potential contamination of soils**

Leaks and spills from vehicles, machinery and handling of potential pollutants (e.g. fuel and lubricants) during on-site activities may potentially contaminate the soil.

### 5.1.5 Heritage

Core drilling activities and site access could potentially result in the loss of or damage to heritage resources. Many farms and communities in rural areas have graveyards located near to them. There are also many buildings, infrastructure and sites of cultural or heritage importance across the Free State and Mpumalanga.

### 5.1.6 Land Tenure and Access to Private Property

The issuance of an ER would result in Afro Energy holding a right for “Petroleum and Natural Gas” exploration, which would necessitate access onto private property in order to undertake the proposed core drilling. Various queries were raised regarding access onto private property.

### 5.1.7 Land Use

Core drilling would preclude other land uses (e.g. farming, mining, etc.) within the immediate drilling area for the duration of the drilling period. Potential impacts include:

- Prevention or disruption of land user’ activities;
- Impacts to crops, plantations, veld and livestock / game;
- Related loss of income; and
- Loss of productivity on disturbed land.

### 5.1.8 Structural Damage to Infrastructure

Accidental damage during core drilling could occur as vehicles and equipment move on and between sites. Such damage to infrastructure (such as fences, gates, culverts, pipes and roads) would have direct cost of repair / replacement, as well as potential for significant loss of income due to the effects of such damage.

### 5.1.9 Noise

Primary sources of noise associated with the proposed exploration activities include vehicle traffic and drill rig operations. Increased noise levels may cause disturbances and nuisance to nearby receptors. The region generally has low ambient noise levels and exploration activities could change this, albeit for short durations.

### 5.1.10 Air Quality

- **Dust and vehicle emissions**  
Dust generated from the movement of vehicles to and from drill sites on unsurfaced roads and the drilling operation may contribute to elevated particulate matter levels in the air on a local scale. Emissions would also be generated by vehicles and other combustion-driven equipment (e.g. generators) that release nitrogen oxides (NO<sub>x</sub>), carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO) and volatile organic compounds (VOC).
- **Escape or release of gas from exploration boreholes**  
Core holes drilled to the target strata could create the opportunity for any gas present to escape to the surface and atmosphere. The escape or release of gas from exploration core holes is of concern as methane (one of the main constituents of natural gas) is a relatively powerful green-house gas with a high global warming potential (23 times that of CO<sub>2</sub>).

### 5.1.11 Landowner Security

There may be concerns that the increased numbers of people in the area as a result of the proposed exploration activities could have an impact on farm safety and security, either through direct theft by contractors and staff or through undeterred access onto private land through gates that are left open.

### 5.1.12 Contribution to Local Economy

Contribution to the local economy could occur through the creation of some direct employment opportunities and generation of direct revenues as a result of using local businesses for support services and supplies. On the other hand if the exploration detracts from or compromises the main attractions of the region then it could result in a reduction in external inputs to the local economy.

### 5.1.13 Compensation

Various queries were raised relating to compensation for:

- the minerals derived from the land;
- access to land; and
- the use of or impact to land.

### 5.1.13 Rehabilitation and Liability

Landowners were concerned about who would be responsible for rehabilitation of land and property after any exploration activity.

## 5.2 ISSUES NOT RELATED TO ACTIVITIES PROPOSED AS PART OF THE CURRENT WORK PROGRAMME

The issues discussed below are not related to the proposed exploration work programme, and will not be assessed in the next phase of the EIA phase. These issues are discussed in more detail in Section 6.2 of the Scoping Report.

### 5.2.1 Risks of Possible Future Exploration and Production

The interest in and concerns around possible future exploration and production are recognised and acknowledged. However, at this stage it is not known if there is a viable resource in the ER application area, where it may be located and the nature of the resource. Thus the specifics of what future exploration or production would entail is not known.

The exploration-to-production process is phased - where the information gained from an earlier phase is used to inform the specifics of future phases. Discovering gas reservoirs and estimating the likelihood of them containing a viable resource, and what would be required to extract gas, is a technically complex process consisting of a number of different phases requiring the use of a range of exploration techniques. Without information on the scope, extent, duration and location of future activities it is not possible to undertake a reliable assessment of future impacts and any assessment would be mere speculation and of limited value to I&APs and the decision-maker.

Afro Energy is at the beginning of the exploration process and at this stage is only seeking authorisation to undertake early-phase exploration activities (i.e. core borehole drilling and aeromagnetic surveying). Based on Afro Energy's existing exploration operations in the Amersfoort and Volksrust areas, future exploration would more than likely entail the drilling of permeability test wells, the location of which would be informed by the current exploration work programme. The results of this more detailed exploration phase would determine if there is in fact an economically viable gas resource and would provide further detail on the nature and extent of the resource (including the volume and quality of water in the coal seam that may require dewatering). After the drilling of permeability test wells, a pilot plant may be established, which would

ultimately determine the size of the resource and inform the specifics of the production phase (including number and location of wells, dewatering and treatment / disposal, etc.).

As the specifics of what future exploration or production entails is not known at this stage, the scope of this EIA is limited to the current exploration work programme. PASA has accepted that this is a standard approach for any such development of a “petroleum” resource. The assessment of potential impacts associated with any future exploration or production activities would be undertaken as part of a future EIA (or environmental authorisation amendment) process, as required by NEMA.

### 5.2.2 Hydraulic Fracturing as a Method of Exploration

The interest in and concerns around hydraulic fracturing are recognised and acknowledged. However, it should be noted that it is possible for CBM gas to be released / extracted without formation stimulation as required for tight shale gas. If the coal seam and surrounding strata are permeable, dewatering may be sufficient to start gas flowing from the well.

It is important for I&APs to understand the fundamental difference between what Afro Energy is proposing and that related to shale gas exploration. Firstly, Afro Energy is not targeting shale gas, located deeper than approximately 2 500 m below the surface, which may require hydraulic fracturing in order to release the gas. Afro Energy is targeting a much shallower gas resource, located approximately 100 m to 800 m below the surface, associated with the coal seams and adjacent sandstone / mudstone strata. Secondly, exploration undertaken by Afro Energy's in its ER areas near Volksrust and Amersfoort has shown the geology to be sufficiently permeable to extract commercial rates of gas from unstimulated test wells. Thus Afro Energy has indicated that well stimulation would not be required to release the CBM gas and will not at any time during the project life-cycle (exploration or production) be considered as an activity for this project.

## 6. PROPOSED SPECIALIST STUDIES

Three specialist studies will be commissioned to address the key issues that require further investigation and detailed assessment. This specialist information and other relevant information will be integrated into the EIR, which will be made available to all registered I&APs for review and comment.

### 6.1 ECOLOGICAL ASSESSMENT

The specific terms of reference for the Ecological Assessment are as follows:

- Identify, map and describe the extent, nature and status of ecological features (including geology, soil, vegetation and surface water resources), sensitive habitat types (such as ridges, wetlands and rivers), threatened ecosystems, protected areas, CBAs and other sensitive biophysical areas in the ER area, based on available literature, existing databases (e.g. SANBI, NFEPA and other provincial databases) and fine scale plans for the region;
- Identify any species of special concern (vegetation and fauna) viz. species with conservation status, endemic to the area or threatened species that exist or may exist in the ER application area;
- Identify and investigate ecological / biodiversity processes that could be affected (positively and/or negatively) by the proposed project;
- Visit each of the identified drill sites to identify, describe and map the ecological features; determine the presence of species of concern and identify relevant ecological/biodiversity processes at each site and within the immediate surrounds;
- Ground truth all biodiversity features of high sensitivity (as indicated in existing data) within a 1.5 km radius of the site and delineate the boundaries of all wetlands within this area;

- Develop an ecological sensitivity plan (low, medium and high significance), which defines the potential ecological constraints and no-go areas, as well as map preferred locations and access routes;
- Identify and assess the significance of potential impacts associated with the proposed drilling activities on the ecology and biodiversity (specifically vegetation, fauna and surface water ecology) at each site;
- Identify practicable mitigation measures to reduce any potential negative impacts and indicate how these could be implemented and managed during exploration; and
- Provide guidance for the requirement of any permits or licences (e.g. General Authorisation or Water Use Licence).

## 6.2 GROUNDWATER ASSESSMENT

The specific terms of reference for the Groundwater Assessment are as follows:

- Identify, map and describe major surface resources and groundwater resources / aquifers in the ER area, based on available literature, existing databases (e.g. National Groundwater Archive and Water Allocation and Registration Management System) and plans and assessments for the region;
- Describe the regional geology and general hydrogeological conditions of the ER application area including the prevailing groundwater levels and quality, known aquifers and their key parameters and classification, and significant registered water users;
- Identify and investigate hydrogeological processes that could be affected (positively and/or negatively) by the proposed project;
- Undertake a hydrocensus of boreholes within a 5 km radius of the identified drill site to identify, describe and map the local hydrogeological features and water uses. Sample and analyse active water production holes within 1 km of the identified drill site and of significance to local users e (water level and quality (SANS 241));
- Describe the hydrogeological conditions and status of the groundwater resources at each identified drill site;
- Develop a hydrogeological sensitivity plan (low, medium and high significance) for each site to define potential hydrogeological constraints and no-go areas;
- Identify and assess the significance of potential impacts associated with the proposed project on the groundwater systems;
- Identify other practicable mitigation measures to reduce any potential negative impacts and indicate how these could be implemented and managed during exploration; and
- Provide guidance for the requirement of any authorisation, permits or licences (e.g. General Authorisation or Water Use Licence).

## 6.3 HERITAGE ASSESSMENT

The specific terms of reference for the heritage assessment are as follows:

- Identify, map and describe heritage resources (including archaeology, palaeontology and cultural heritage) in the ER area, based on available literature, existing databases and fine scale plans for the region;
- Visit each of the identified drill sites to identify, describe and map the heritage features at each site and within the immediate surrounds;
- Determine the sensitivity and conservation significance of any sites of archaeological, palaeontology or cultural heritage significance potentially affected by the proposed project;
- Develop a heritage sensitivity plan (low, medium and high significance) for each site to describe any constraints relating to identified heritage features;
- Identify and assess the significance of potential impacts associated with the proposed project on the heritage resources / features;



- Identify other practicable mitigation measures to reduce any potential negative impacts and indicate how these could be implemented and managed during exploration; and
- Provide guidance for the requirement of any heritage permits or licences.

# EIA FOR AN EXPLORATION RIGHT APPLICATION FOR PETROLEUM AND NATURAL GAS ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

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## ACRONYMS AND ABBREVIATIONS

Below a list of acronyms and abbreviations used in this report.

Acronyms / Abbreviations	Definition
BID	Background Information Document
CBAs	Critical Biodiversity Areas
CBM	Coal Bed Methane
CEAPSA	Certified Environmental Practitioner of South Africa
CH <sub>4</sub>	Methane
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CR	Critical Endangered
CTL	Coal-To-Liquid
DEA	Department of Environmental Affairs
DoE	Department of Energy
EAP	Environmental Assessment Practitioner
EIA	Scoping and Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Managements Programme
EN	Endangered
ER	Exploration Right
ESA	Ecological Support Areas
FEPAs	Freshwater Ecosystem Priority Areas
FSGDS	Free State Development Strategy
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GN	Government Notice
GUMP	Gas Utilisation Master Plan
I&APs	Interested and Affected Parties
IDPs	Integrated Development Plans
IEM	Integrated Environmental Management
IEP	Integrated Energy Plan
IRP	Integrated Resource Plan
IUCN	International Union Conservation of Nature
LC	Least Concern
MGDP	Mpumalanga Growth and Development Path
MPRDA	Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002)
NDP	National Development Plan
NEMA	National Environmental Management Act, 1998 (No. 107 of 1998)
NEMAQA	National Environmental Management Air Quality Act, 2004 (No. 57 of 2003)
NEMBA	National Environmental Management Biodiversity Act, 2004 (No. 10 of 2004)
NEMPRAA	National Environmental Management: Protected Areas Act, 2003 (No. 57 of 2003)
NEMWA	National Environmental Management Waste Act, 2008 (No. 59 of 2008)
NGP	New Growth Path

<b>Acronyms / Abbreviations</b>	<b>Definition</b>
NHRA	National Heritage Resources Act, 1999 (No. 25 of 1999)
NO <sub>x</sub>	nitrogen oxides
NPAES	National Protected Areas Expansion Strategy
NT	Near Threatened
NWA	National Water Act, 1998 (No. 36 of 1989)
NYBA	Not yet been assessed
PASA	Petroleum Agency of South Africa
PSDF	Provincial Spatial Development Framework
Pr.Sci.Nat.	Registered Professional Natural Scientists
REIPP	Renewable Energy Independent Power Producers
ROMPCO	Republic of Mozambique Pipeline Company
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SDFs	Spatial Development Frameworks
SLR	SLR Consulting (South Africa) (Pty) Ltd
TCP	Technical Co-operation Permit
TMDM	Thabo Mofutsanyane District Municipality
UNFCCC	United Nations Framework Convention on Climate Change
VOC	Volatile Organic Compounds
VU	Vulnerable
WMA	Water Management Area



# EIA FOR AN EXPLORATION RIGHT APPLICATION FOR PETROLEUM AND NATURAL GAS ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

## 1 INTRODUCTION

This chapter describes the purpose of this report, provides a brief description of the project background, summarises the legislative authorisation requirements, provides the terms of reference, and describes the structure of the report.

### 1.1 PURPOSE OF THIS REPORT

This Scoping Report has been compiled as part of the Scoping and Environmental Impact Assessment (hereafter collectively referred to as “EIA”) process that is being undertaken as part of the application by Afro Energy (Pty) Ltd (hereafter referred to as “Afro Energy”) to apply for an Exploration Right (ER) to explore for “Petroleum and Natural Gas” on various farms in a portion of the Free State and Mpumalanga provinces (12/3/320 ER).

This report provides a description of the proposed project and the affected environment, summarises the EIA process followed to date and identifies the key project issues that will be further investigated and assessed / addressed in the next phase of the EIA. The compilation of this report has been informed by comments received from Interested and/or Affected Parties (I&APs) during the Pre-application Public Participation Process and on the draft Scoping Report. It should be noted that all significant changes to the draft report are underlined and in a different font (Times New Roman) to the rest of the text.

This report is submitted to the Petroleum Agency of South Africa (PASA)<sup>3</sup> for consideration as part of the application for Environmental Authorisation in terms of Chapter 5 of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA), as amended.

### 1.2 PROJECT BACKGROUND

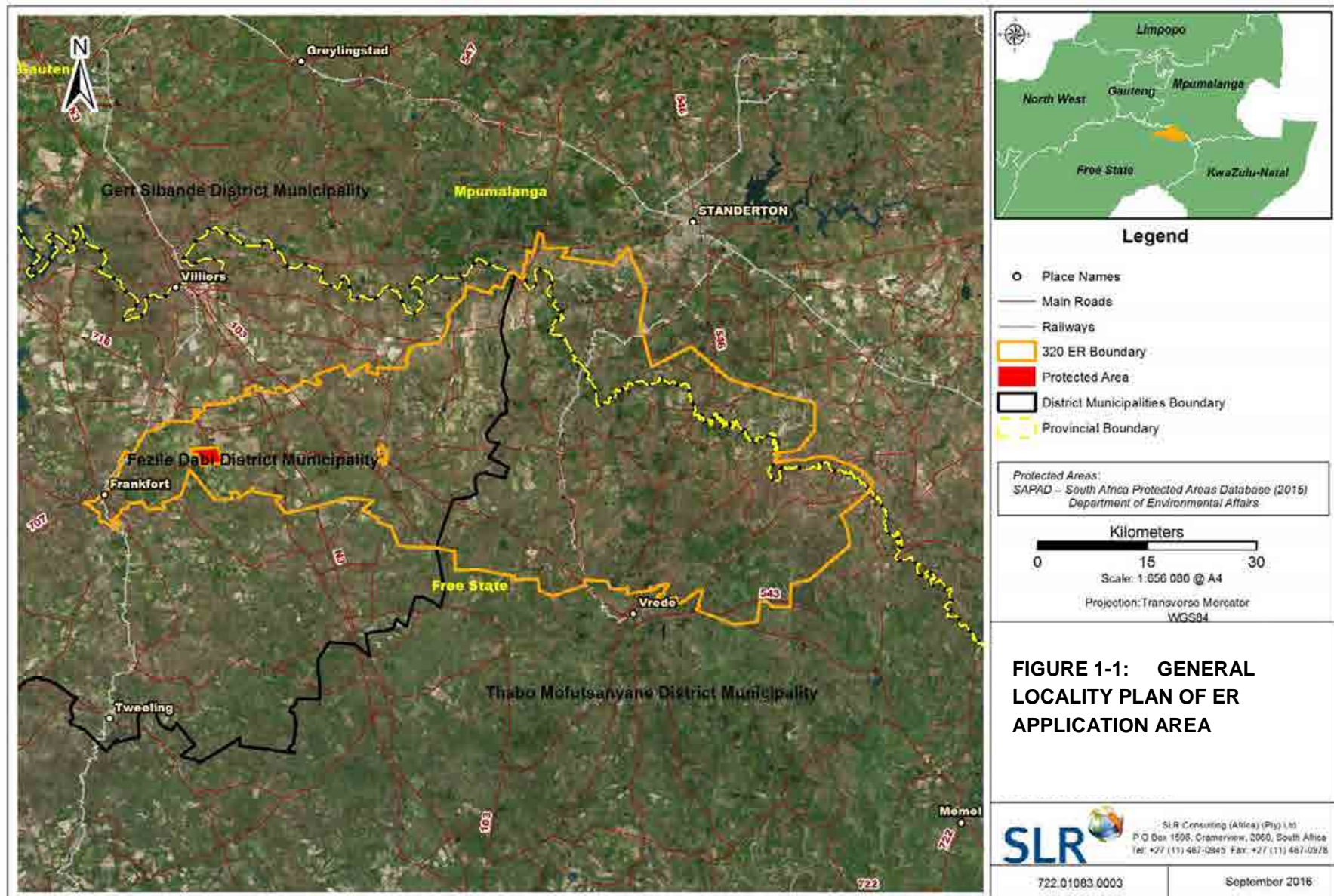
On 8 July 2016, Afro Energy lodged an application for an ER with PASA to explore for “Petroleum and Natural Gas” in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA). PASA accepted the application on 13 July 2016. The ER application area is extensive and encompasses various farms in the Free State and Mpumalanga provinces (see Figure 1-1).

Afro Energy previously held a Technical Co-operation Permit (TCP) for the same area. An analysis of the data collected as part of the TCP (including historical coring) has indicated that conditions are permissive for the occurrence of methane-rich gas in underground coal seams and associated geological strata in the ER area. Afro Energy is now proposing to further explore the area for Coal Bed Methane (CBM) gas resources.

The application is for undertaking early-phase petroleum exploration, which is aimed at determining the presence of CBM gas resources that could warrant further exploration. The initial exploration work programme is restricted to an aeromagnetic survey and drilling of up to four stratigraphic core boreholes. No stimulation, pressure testing, hydraulic fracturing or water abstraction is included in the proposed exploration work.

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<sup>3</sup> PASA is the designated agency, in terms of Section 70 of the MPRDA, responsible for the regulation and administration of exploration and production applications and activities.



Based on Afro Energy's existing ER in the Amersfoort area and its success of extracting commercial rates of gas from unstimulated test wells, well stimulation (e.g. hydraulic fracturing) **will not**, at any time, be considered as an activity for this project (refer to Section 6.2.2 for further discussion in this regard). This applies to any possible future work, not just what is currently proposed.

### 1.3 SUMMARY OF AUTHORISATION REQUIREMENTS

An application for an ER requires statutory approval in terms of both the MPRDA and NEMA. These two regulatory processes are summarised below and presented in more detail in Section 2. All legislation and guidelines that have been considered in the preparation of the EIR are also documented in Section 2.

In terms of Section 79 of the MPRDA an ER is required from the Minister of Mineral Resources (or delegated authority) prior to the commencement of any exploration activities. A requirement for obtaining an ER is that an applicant must comply with Chapter 5 of NEMA with regards to consultation and reporting.

In terms of the EIA Regulations 2014, promulgated in terms of Chapter 5 of NEMA, any activity which requires an ER under the MPRDA may not commence without Environmental Authorisation from the competent authority, the Minister of Mineral Resources (or delegated authority), to carry out the proposed exploration programme. In order for PASA, as the delegated authority, to consider an application for Environmental Authorisation and make a recommendation to the Minister of Mineral Resources (or delegated authority), an EIA process must be undertaken.

SLR Consulting (South Africa) (Pty) Ltd (hereafter referred to as "SLR") has been appointed by Afro Energy as the Environmental Assessment Practitioner (EAP) to undertake the EIA and associated public participation process to meet the relevant requirements of the MPRDA, NEMA and Regulations thereto.

### 1.4 TERMS OF REFERENCE

The terms of reference for the EIA are as follows:

- Ensure the EIA is undertaken in accordance with the requirements of NEMA and the EIA Regulations 2014 (GN No. R982, 4 December 2014);
- Align scope of the EIA process to the proposed initial exploration work programme as described in Section 4.5;
- Ensure the EIA is undertaken in an open, participatory manner to ensure that all potential impacts are identified;
- Undertake a formal public participation process, which includes the distribution of information to I&APs and provides the opportunity for I&APs to raise any concerns/issues, as well as an opportunity to comment on all EIA documentation;
- Commission specialist studies to assess key issues and concerns identified during the scoping process; and
- Integrate all the information, including the findings of the specialist studies and other relevant information, into an Environmental Impact Report (EIR) to allow an informed decision to be taken on the proposed project.

## 1.5 STRUCTURE OF THIS REPORT

This Scoping Report has been prepared in compliance with Appendix 2 of the EIA Regulations 2014 and is divided into various chapters and appendices, the contents of which are outlined below.

Section	Contents
Executive Summary	Provides a comprehensive synopsis of the Scoping Report.
Chapter 1	<b>Introduction</b> Describes the purpose of this report, provides a brief description of the project background, summarises the legislative authorisation requirements, provides the terms of reference, and describes the structure of the report.
Chapter 2	<b>Legislative requirements</b> Outlines the key legislative requirements applicable to the ER application and associated exploration activities.
Chapter 3	<b>EIA methodology</b> Outlines the methodology for the assessment and consultation process undertaken in the EIA. Also includes a summary of the consultation undertaken to date and the results thereof.
Chapter 4	<b>Project description</b> Provides general project information; a general overview of exploration processes; describes the need and desirability for the proposed project; presents the proposed exploration work programme and a description of the project alternatives.
Chapter 5	<b>Description of the affected environment</b> Describes the existing biophysical and social environment that could potentially be affected by the proposed exploration activities.
Chapter 6	<b>Key project issues and impacts</b> Describes key issues and impacts associated with the proposed project.
Chapter 7	<b>Preliminary assessment of project alternatives</b> Compares the environmental impacts and risks of the project alternatives for the purpose of selecting the preferred alternative(s).
Chapter 8	<b>Plan of Study for EIA</b> Describes the nature and extent of further investigations to be conducted by SLR and the specialists in the EIA, and sets out the proposed approach to the EIA process.
Chapter 9	<b>References</b> Provides a list of the references used in compiling this report.
Appendices	Appendix 1: Co-ordinates of the Exploration Right application area Appendix 2: List of properties included in the Exploration Right application area Appendix 3: EAP undertaking Appendix 4: Curricula Vitae (including registrations) of the Project Team Appendix 5: Public Participation Process: Appendix 5.1: PASA correspondence Appendix 5.2: I&AP database Appendix 5.3: I&AP notification letter and BID Appendix 5.4: Advertisements Appendix 5.5: Notices Appendix 5.6: Minutes of information-sharing meetings Appendix 5.7: Correspondence received during the pre-application public participation process <u>Appendix 5.8: Draft Scoping Report notification letters</u> <u>Appendix 5.9: Correspondence received during the draft Scoping Report review and comment period</u> <u>Appendix 5.10: Comments and Responses Report</u>

## 2 LEGISLATIVE REQUIREMENTS

This chapter outlines the key legislative requirements applicable to the ER application and associated exploration activities.

### 2.1 OVERVIEW OF THE “ONE ENVIRONMENTAL SYSTEM”

The “One Environmental System” commenced on 8 December 2014 removing the environmental regulation of prospecting, mining, exploration and production and related activities from the MPRDA and transferring it to NEMA. Under the “One Environmental System”, the Minister of Mineral Resources (or delegated authority) is the competent authority responsible for issuing Environmental Authorisations in terms of NEMA for mining and petroleum related activities. The Minister of Environmental Affairs, however, remains the appeal authority for these authorisations.

### 2.2 MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002

The MPRDA provides that the mineral and petroleum resources are the common heritage of all South Africans and the State is the custodian thereof for the benefit of all South Africans. The state is entitled to issue rights to ensure the sustainable development of South Africa’s mineral and petroleum resources within a framework of national environmental policy, while promoting economic and social development.

In terms of the MPRDA, an ER must be obtained prior to the commencement of any exploration activities. A requirement for obtaining an ER is that an applicant must submit an application in terms of Section 79(1) of the MPRDA to the designated agency, and they must accept the application within 14 days if, *inter alia*, no other person holds a TCP, ER or Production Right for the same mineral over any part of the proposed licence area. If the application for an ER is accepted, the designated agency must request that the applicant comply with Chapter 5 of NEMA with regards to consultation and reporting (see Section 2.1.3). The Minister (or delegated authority) may only grant the ER if an Environmental Authorisation is issued.

#### 2.2.1 APPLICATION FOR AN ER

As mentioned in Section 1.2, on 8 July 2016 Afro Energy lodged an application for an ER with PASA, the designated agency in terms of Section 79 of the MPRDA. PASA accepted the application on 13 July 2016 (Ref: 12/3/320 ER) (see Appendix 5.1) and requested that, *inter alia*,

- an application for Environmental Authorisation be submitted to them in terms of Regulation 16 of the EIA Regulations 2014 on or before 12 September 2016;
- a Scoping Report as contemplated in Regulation 21(1) of the EIA Regulations 2014 and which has been subjected to public participation be submitted; and
- consultation be undertaken with landowners, lawful occupiers and any other I&APs and the results be included in the Scoping Report and EIR.

In order to allow sufficient time to undertake a Pre-application Public Participation Process (see Section 3.3.2) Afro Energy submitted a motivation to PASA to extend the submission deadline of the application for Environmental Authorisation. PASA agreed to the request and extended the submission deadline to 12 November 2016 (see Appendix 5.1).

### 2.2.2 CONSULTATION BY AUTHORITY

Section 10 of the MPRDA requires that the designated agency (i.e. PASA), within 14 days after accepting an application for a right, and in the prescribed manner must:

- make known that an application for a ER<sup>4</sup> has been accepted in respect of the land in question; and
- call upon interested and affected persons to submit their comments regarding the application within 30 days from the date of the notice.

The prescribed manner for the designated agency (i.e. PASA) to give notice in terms of Section 10 of the MPRDA is set out in Regulation 3 of the MPRDA Regulations (GN R 527 of April 2004). PASA has confirmed that, in respect of this application, a notice was placed at the Frankfort Magistrate's Court on 14 July 2014.

### 2.2.3 LEGAL NATURE AND LIMITATIONS ON AN ER

Any right granted under the MPRDA is limited in respect of the mineral or petroleum and the land to which such right relates. The holder of a right is entitled to the rights referred to in Section 5 of the MPRDA and such other rights as may be granted to, acquired by or conferred upon such holder under the MPRDA or any other law.

The ER that Afro Energy has applied for is specific and limited to:

- The minerals being Petroleum and Natural Gas;
- The proposed ER area as defined by the co-ordinates presented in Appendix 1;
- The properties as listed in Appendix 2;
- The proposed exploration work programme as detailed in Section 4.5; and
- A three-year time frame from the granting of the right.

Any change to the scope of the ER, further exploration or future production activities would need to be subject to additional authorisation / approval in terms of the MPRDA and NEMA. Each of these would require a separate environmental assessment (or Environmental Authorisation amendment) process, which would include a further public participation process and an environmental assessment (potentially including specialist studies) of all project-related activities / issues. Refer to Sections 4.6 and 4.7.2.3 for further information in this regard.

## 2.3 NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998

Section 2 of NEMA sets out a range of environmental principles that are to be applied by all organs of state when taking decisions that significantly affect the environment. Included amongst the key principles is that all development must be socially, economically and environmentally sustainable and that environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably. NEMA also provides for the participation of I&APs and stipulates that decisions must take into account the interests, needs and values of all I&APs.

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<sup>4</sup> In terms of Section 69(2)(b)(vii) "prospecting rights, must be construed as reference to ERs".



Chapter 5 of NEMA outlines the general objectives and implementation of Integrated Environmental Management (IEM), which provides a framework for the integration of environmental issues into the planning, design, decision-making and implementation of plans and development proposals. Section 24 provides a framework for granting of Environmental Authorisations. In order to give effect to the general objectives of IEM, the potential impacts on the environment of listed activities must be considered, investigated, assessed and reported on to the competent authority. Section 24(4) provides the minimum requirements for procedures for the investigation, assessment and communication of the potential impact of activities.

### 2.3.1 EIA REGULATIONS 2014

The EIA Regulations 2014, as amended, promulgated in terms of Chapter 5 of NEMA, and published in Government Notice (GN) R982, provides for the control of certain listed activities. These activities are listed in GN R983 (Listing Notice 1), R984 (Listing Notice 2) and R985 (Listing Notice 3) of 4 December 2014, and are prohibited until Environmental Authorisation has been obtained from the competent authority. Although the administration of applications for Environmental Authorisations has been delegated to PASA, the Minister of Mineral Resources (or delegated authority) remains responsible the granting of Environmental Authorisation in terms of NEMA where the listed or specified activity is directly related to prospecting or exploration of a mineral or petroleum resource (refer to Section 24C(2A) of NEMA).

Environmental Authorisation, which may be granted subject to conditions, will only be considered once there has been compliance with the EIA Regulations 2014 (GN R982). This notice sets out the procedures and documentation that need to be complied with when applying for Environmental Authorisation. A Basic Assessment process must be applied to an application if the authorisation applied for is in respect of an activity(ies) listed in Listing Notice 1 and / or 3 and an EIA process must be applied to an application if the authorisation applied for is in respect of an activity(ies) listed in Listing Notice 2.

The proposed ER application triggers Activity 18 contained in Listing Notice 2 and Activity 12 in Listing Notice 3 (see Table 2-1), thus an EIA process must be undertaken in order for PASA to consider the application in terms of NEMA and make a recommendation to the Minister of Mineral Resources. Afro Energy lodged an application to PASA for Environmental Authorisation of the ER on 8 November 2016.

**TABLE 2-1: LISTED ACTIVITIES APPLIED FOR AS PART OF THE PROPOSED PROJECT**

ACTIVITY NO.	ACTIVITY DESCRIPTION	DESCRIPTION OF ACTIVITY IN RELATION TO THE PROPOSED PROJECT
<b>Listing Notice 1 (GN R983)</b>		
N/A	-	-
<b>Listing Notice 2 (GN R984)</b>		
18	<i>Any activity including the operation of that activity which requires an ER as contemplated in Section 79 of the MPRDA, including associated infrastructure, structures and earthworks.</i>	The proposed exploration activities require an ER and an application has been submitted to PASA.  The proposed exploration activities associated with the ER application are described in Section 4.5

ACTIVITY NO.	ACTIVITY DESCRIPTION	DESCRIPTION OF ACTIVITY IN RELATION TO THE PROPOSED PROJECT
<b>Listing Notice 3 (GN R985)</b>		
12	<p><i>The clearance of an area of 300 m<sup>2</sup> or more of indigenous vegetation, ...</i></p> <p><i>(a) In ... Free State, ...:</i></p> <p><i>(i) Within any critically endangered or endangered ecosystem listed in terms of Section 52 of the NEMBA ...;</i></p> <p><i>(ii) Within critical biodiversity areas identified in bioregional plans;</i></p> <p><i>(c) In Mpumalanga:</i></p> <p><i>(i) Within any critically endangered or endangered ecosystem listed in terms of Section 52 of the NEMBA or ...;</i></p> <p><i>(ii) Within critical biodiversity areas identified in bioregional plans;</i></p>	<p>A typical diamond core drill rig and equipment requires an operating area of approximately 1 000 m<sup>2</sup> (33 m by 33 m). Vegetation would be cleared and/or disturbed within the demarcated drill area.</p> <p>The clearing of critically endangered or endangered vegetation will be confirmed during the specific site assessments undertaken by the specialist consultants during the next phase of the EIA.</p>

## 2.4 OTHER LEGISLATION CONSIDERED IN THE PREPARATION OF THE SCOPING REPORT

In accordance with the EIA Regulations 2014, all legislation and guidelines that have been considered in the EIA process must be documented. Table 2-2 below provides a summary of the applicable legislative context and policy.

**TABLE 2-2: LEGAL FRAMEWORK**

APPLICABLE LEGISLATION AND GUIDELINES	RELEVANCE OR REFERENCE
MPRDA and associated regulations (GN No. R527)	Refer to Section 2.2.
Regulations on Petroleum Exploration and Production (GN R466, July 2015)	<p>These Regulations augment the MPRDA Regulations, so as to prescribe standards and practices to ensure the safe exploration and production of petroleum. Section 122(3) of these Regulations prohibits “wells” within 1 km of a wetland, but does not prohibit the granting of a right.</p> <p>There is, however, some ambiguity as to the applicability of this setback distance to stratigraphic core boreholes (as “stratigraphic wells” are defined separately to “wells”) and is currently under review by PASA and the Department of Water and Sanitation (Stet Mushwana, PASA <i>pers. comm.</i>). The interpretation of these Regulations will be investigated further with the relevant authorities during the next phase of the EIA. If necessary, the proposed borehole locations would need to be relocated to comply with this setback distance. The proximity of the proposed core boreholes in relation to wetlands will also be confirmed during the on-site specialist investigations (see Section 8.3.1).</p>
Mine Health and Safety Act Regulations (GN R93 of 1997)	<p>Exploration must be undertaken in terms of the relevant provisions of the Regulations.</p> <p>Afro Energy is not proposing any activities to which the Regulations apply.</p>
NEMA	Refer to Section 2.3.



APPLICABLE LEGISLATION AND GUIDELINES	RELEVANCE OR REFERENCE
EIA Regulations 2014 (GN No. R982), Listing Notice 1 (GN No. R983), Listing Notice 2 (GN No. R984) and Listing Notice 3 (GN No. R985)	<p>Refer to Section 2.3.1. The application for an ER is an activity listed in Listing Notice 2 and, therefore, requires an EIA process to inform the application for Environmental Authorisation. The proposed core drilling may also trigger Activity 12 in Listing Notice 3.</p> <p>This Scoping Report has been compiled in accordance with Appendix 2 of the EIA Regulations 2014. No other activities are being proposed that trigger the need for an Environmental Authorisation.</p>
Financial Provision Regulations, 2015 (GN No. R1147)	<p>These regulations set the requirements for financial provision as contemplated in NEMA for the costs associated with the undertaking of management, rehabilitation and remediation of environmental impacts of prospecting, exploration, mining or production operations through the lifespan of such operations and latent or residual environmental impacts that may become known in the future.</p> <p>See Section 4.5.3.</p>
National Environmental Management Waste Act, 2008 (No. 59 of 2008) (NEMWA) and associated regulations.	<p>NEMWA regulates all aspects of waste management and has an emphasis on waste avoidance and minimisation. NEMWA creates a system for listing and licensing waste management activities. Listed waste management activities above certain thresholds are subject to a process of impact assessment and licensing. Activities listed in Category A require a Basic Assessment process, while activities listed in Category B require an EIA process.</p> <p>Afro Energy is not proposing any activities that trigger the need for a Waste Management Licence.</p>
Regulations Regarding the Planning and Management of Residue Stockpiles and Residue Deposits, 2015 (GN R632).	<p>The purpose of these Regulations is to regulate the planning and management of residue stockpiles and residue deposits from a prospecting, mining, exploration or production operation.</p> <p>Afro Energy is not proposing any activities to which the Regulations apply. Drill cuttings (from skips) would not be stockpiled on site, but rather stored in containers, before being removed from site and disposed at an appropriately licensed landfill facility.</p>
National Environmental Management Air Quality Act, 2004 (No. 57 of 2003) (NEMAQA).	<p>The NEMAQA regulates all aspects of air quality, including prevention of pollution, providing for national norms and standards and including a requirement for an Atmospheric Emissions Licence for listed activities, which result in atmospheric emissions and have or may have a significant detrimental effect on the environment. In terms of Section 22 no person may conduct a listed activity without an Atmospheric Emission Licence.</p> <p>No activities are being proposed that would trigger the need for an Atmospheric Emission Licence.</p>
National Water Act, 1998 (No. 36 of 1989) (NWA)	<p>NWA provides a legal framework for the effective and sustainable management of water resources in South Africa. It serves to protect, use, develop, conserve, manage and control water resources as a whole, promoting the integrated management of water resources with the participation of all stakeholders. This Act also provides national norms and standards, and the requirement for authorisation (Water Use Licence or General Authorisation) of uses listed in Section 21.</p> <p>The exploration of onshore naturally occurring hydrocarbons that requires stimulation is a controlled activity that requires a Water Use Licence (see row below). Note: well stimulation will not, at any time, be considered as an activity for this project (see Section 6.2.2).</p>

APPLICABLE LEGISLATION AND GUIDELINES	RELEVANCE OR REFERENCE
<p>Declaration of the exploration and or production of onshore naturally occurring hydrocarbons ... as a controlled activity ... (Notice 999 of 2015)</p>	<p>This declares the following activity to be a controlled activity, which requires a Water Use Licence in terms of the NWA:</p> <p><i>“The exploration and or production of onshore naturally occurring hydrocarbons that requires stimulation, including but not limited to hydraulic fracturing and or underground gasification, to extract, and any activity incidental thereto that may impact detrimentally on the water resource”.</i></p> <p>Well stimulation will not, at any time, be considered as an activity for this project (see Section 6.2.2). PASA has indicated that the dewatering of <i>in-situ</i> water (which may be required as part of a future exploration or production phase) does not fall under “well stimulation”. Thus a Water Use Licence in terms of this Notice is not required for the proposed exploration activities.</p>
<p>General Authorisation for taking water from a resource (GN R399, 2004)</p>	<p>The General Authorisation permitted in terms of this Schedule replaces the need for a water user to apply for a licence in terms of the NWA for the taking or storage of water from a water resource, provided that the taking or storage is within the limits and conditions set out in this authorisation. The General Authorisation includes specific limitations for the taking of surface and groundwater per catchment per property.</p> <p>Water required for drilling would be obtained in terms of the regulatory requirements. The need for a General Authorisation or Water Use Licence will be determined as part of the Ecological Assessment (see Section 8.3.1) and Groundwater Assessment (see Section 8.3.2).</p>
<p>General Authorisation for water uses as defined in Section 21(c) and 21(i) (GN 509, 2016)</p>	<p>The General Authorisation permitted in terms of this Schedule replaces the need for a water user to apply for a licence in terms of the NWA for impeding or diverting the flow of water in a watercourse (Section 21(c)) or altering the bed, banks, course or characteristics of a watercourse (Section 21(i)). The regulated area of a watercourse in terms of this notice means:</p> <ul style="list-style-type: none"> <li>• The outer edge of the 1:100 year flood line ...;</li> <li>• In the absence of a determined 1:100 year flood line, the area within 100 m from the edge of a watercourse where ...; or</li> <li>• A 500 m radius from the delineated boundary (extent) of any wetland or pan.</li> </ul> <p>The applicability of this notice would ultimately depend on the location of the core holes. The need for a General Authorisation or Water Use Licence will be determined as part of the Ecological Assessment (see Section 8.3.1).</p>
<p>Regulations on use of water for mining and related activities aimed at the protection of water resources (GN R704)</p>	<p>These Regulations, promulgated under the NWA, were made in respect of the use of water for mining and related activities, and are aimed at the protection of water resources. Regulation 4(b) sets out that no person in charge of an activity may “carry on any underground or opencast mining, prospecting or any other operation or activity under or within the 1:50 year flood-line or within a horizontal distance of 100 m from any watercourse or estuary, whichever is the greatest.</p> <p>Afro Energy is not proposing any activities to which the Regulations apply. This will be confirmed during the on-site specialist investigations (see Section 8.3.1).</p>

APPLICABLE LEGISLATION AND GUIDELINES	RELEVANCE OR REFERENCE
National Heritage Resources Act, 1999 (No. 25 of 1999) (NHRA)	<p>NHRA provides for the protection of all archaeological and palaeontological sites and meteorites. Under the general protection provisions, no person may alter, demolish, destroy or remove any of these resources without a permit issued by the relevant provincial resources authority. In addition, any person who in the course of an activity discovers archaeological, palaeontological, meteorological material or burial grounds or graves, must immediately cease the activity and notify the responsible heritage resources authority.</p> <p>Section 38(1) of the Act defines the categories of development for which the responsible heritage resources authority must be notified. Amongst others, under Section 38(c) <i>'any development or other activity which will change the character of a site-</i> (i) exceeding 5 000 m<sup>2</sup> the responsible heritage authority must be informed of a development larger than 0.5 ha.</p> <p>Afro Energy is not proposing any activities that trigger the need for heritage permission.</p>
National Environmental Management: Protected Areas Act, 2003 (No. 57 of 2003) (NEMPRAA)	<p>NEMPRAA provides for protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. Section 48 of this Act restricts certain activities (incl. exploration) within protected areas.</p> <p>The ER application area excludes all areas protected in terms of NEMPRAA.</p>
National Environmental Management Biodiversity Act, 2004 (No. 10 of 2004) (NEMBA).	<p>The objectives of NEMBA are to provide for the management and conservation of biological diversity within South Africa.</p> <p>NEMBA does not place any obligations on the proposed exploration activities. Threatened ecosystems and species of conservation concern, as listed by NEMBA, will be given consideration in the EIA.</p>
National Forests Act, 1998 (No 84 of 1998)	<p>Provides for the sustainable management and development of forests for the benefit of all, including providing special measures for the protection of certain forests and trees. Licensing is required for the destruction of certain indigenous trees.</p> <p>Afro Energy is not proposing any activities to which the Act applies.</p>
Mountain Catchment Areas Act, 1970 (No 63 of 1970)	<p>Provides for the conservation, use, management and control of land situated in mountain catchment areas.</p> <p>This Act does not place any obligations on the proposed exploration activities.</p>
Spatial-Planning and Land Use Management Act, 2013 (No. 16 of 2013)	<p>Provides a framework for spatial planning and land use management.</p> <p>Given that no permanent infrastructure is proposed and, therefore, no change in land use or the zoning, there is no requirement for approval under this legislation.</p>

## 2.5 GUIDELINES AND POLICIES

The guidelines and policies listed below will be or have been taken into account during the EIA.

### **2.5.1 NEMA PUBLIC PARTICIPATION GUIDELINE**

The Department of Environmental Affairs (DEA) published a Public Participation Guideline in the EIA Process Guideline (2010) as part of the Integrated Environmental Management Guideline series. It provides guidance on the procedure and the provisions of the public participation process in terms of NEMA and the EIA Regulations, as well as other relevant legislation.

### **2.5.2 NEMA NEEDS AND DESIRABILITY GUIDELINE**

DEA published a Guideline on Need and Desirability in 2010 as part of the Integrated Environmental Management Guideline Series 9. The guideline has to be read together with the NEMA and the EIA Regulations 2014.

### **2.5.3 PASA PUBLIC PARTICIPATION GUIDELINE**

PASA prepared guidelines for consultation with I&APs (December 2011). PASA developed these guidelines as a tool to assist applicants to undertake a comprehensive consultation process as prescribed by the MPRDA.

### **2.5.4 MUNICIPAL IDP AND SDF**

The Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs) of the Local and District municipalities have been reviewed and relevant details are presented in Section 4.3.3.

### **2.5.5 MINING AND BIODIVERSITY GUIDELINES**

The South African National Biodiversity Institute (SANBI) and partners produced a Mining and Biodiversity Guideline (2013) to provide practical guidance to the mining sector on how to address biodiversity issues in the South African context. This guideline provides a tool to facilitate the sustainable development of South Africa's mineral resources in a way that enables regulators, industry and practitioners to minimise the impact of mining on the country's biodiversity and ecosystem services.

The Guideline distinguishes between four categories of biodiversity priority areas in relation to their importance from a biodiversity and ecosystem service point of view, as well as the implications for mining in these areas. These include areas designated as: 1) Legally Protected, 2) Highest Biodiversity Importance, 3) High Biodiversity Importance, and 4) Moderate Biodiversity Importance. The 'Highest Biodiversity Importance' category is based on the mapped extent of Critically Endangered and Endangered ecosystems, Critical Biodiversity Areas (CBAs), river and wetland Freshwater Ecosystem Priority Areas (FEPAs) with a 1 km buffer and Ramsar sites.

The Guidelines indicates that if the presence of biodiversity features, leading to the categorisation as a 'Highest Biodiversity Importance' area, are confirmed then this could be a fatal flaw or pose significant limitations for new mining projects. An environmental assessment should inform whether or not mining is acceptable, including potentially limiting specific types of prospecting or mining which may be deemed not acceptable due to the impact on biodiversity and associated ecosystem services found in the priority area. Mining in such areas may be considered out of place and authorisations may well not be granted. If granted, the authorisation may set limits on allowed activities and methods, the extent thereof and impacts.

### 3 EIA METHODOLOGY

This chapter outlines the assessment methodology and I&AP consultation process followed in the EIA process.

#### 3.1 DETAILS OF THE EIA PROJECT TEAM

The details of the EIA project team that were involved in the preparation of this Scoping Report are provided in Table 3-1.

**TABLE 3-1: DETAILS OF THE EIA PROJECT TEAM**

General				
Organisation	SLR Consulting (South Africa) (Pty) Ltd			
Postal address	PO Box 10145, CALEDON SQUARE, 7905			
Tel No.	+27 (0)21 461 1118 / 9			
Fax No.	+27 (0)21 461 1120			
Name	Qualifications	Professional registrations	Experience (Years)	Tasks and roles
Jonathan Crowther	M.Sc. (Env. Sci.). University of Cape Town	Pr.Sci.Nat., CEAPSA, Member IAIAAsa	27	Report and process review
Matthew Hemming	M.Sc. (Cons. Biology), University of Cape Town	Member IAIAAsa and IWMSA	10	Report and process review
Jeremy Blood	M.Sc. (Cons. Ecol.), University of Stellenbosch	Pr.Sci.Nat., CEAPSA, Member IAIAAsa	16	Management of the EIA process, including process review, specialist study review and report compilation
<u>Theo Wicks</u>	<u>M.Phil. (Env. Management.), University of Stellenbosch</u>	<u>Member IAIAAsa</u>	<u>9</u>	
Edwynn Louw	M.Sc. (Env. Mgt), University of Johannesburg	-	6	Management of the public participation process, including I&AP database, document distribution and assimilation of comments

SLR has no vested interest in the proposed project other than fair payment for consulting services rendered as part of the EIA process and has declared its independence as required by the EIA Regulations 2014. An undertaking by the EAP is provided in Appendix 3.

##### 3.1.1 QUALIFICATIONS AND EXPERIENCE OF THE EAP

Jonathan Crowther is the SLR Sector Lead for Oil and Gas in Africa. He holds a Master's Degree in Environmental Science and has over 27 years of relevant experience. He has expertise in a wide range of environmental disciplines, including EIAs, Environmental Management Plans / Programmes, Environmental

Planning and Review and Public Consultation. Jonathan is a Registered Professional Natural Scientists (Pr.Sci.Nat.) and a Certified Environmental Practitioner of South Africa (CEAPSA).

Matthew Hemming has over 10 years of relevant experience in the environmental consulting field. He holds a Master's Degree in Conservation Biology and is currently the Technical Discipline Manager for the Environmental and Social Impact Assessment team in the African region. He is well versed in the authorisation and compliance requirements of all South African environmental legislation and his project experience is diverse and he has managed environmental authorisation processes for projects across a wide range of sectors including mining, gas exploration, electricity generation, infrastructure development and waste management throughout South Africa.

Jeremy Blood holds a Master's Degree in Conservation Ecology and has over 16 years' experience in range of environmental disciplines, including EIAs, Environmental Management Plans / Programmes, Environmental Auditing and Monitoring in South Africa, Namibia, Mozambique and Kenya. He has expertise in a wide range of projects, including oil / gas, mining and infrastructure. He is a Registered Professional Natural Scientists and a Certified Environmental Practitioner of South Africa.

Theo Wicks holds a Master's Degree in Environmental Management and has over 9 years' experience in range of environmental disciplines, including EIAs, Environmental Management Plans / Programmes, Environmental Auditing and Monitoring in South Africa, Swaziland and Namibia.

Edwynn Louw holds a Master's Degree in Environmental Management and has over six years of relevant experience where his main focus has been in the fields of rehabilitation, impact assessment and mitigation, compliance auditing and environmental monitoring.

Relevant curricula vitae (including proof of registrations) are attached in Appendix 4.

### 3.2 ASSUMPTIONS AND LIMITATIONS

The assumptions and limitations pertaining to this EIA are listed below:

- It is assumed that SLR has been provided with all relevant project information and that it was correct and valid at the time it was provided;
- The assessment will be based, to some extent, on a generic description of the proposed exploration activities, as specific details would be dependent on the specific contractor employed to undertake each activity. However, it is assumed that parameters provided (or range thereof) are equivalent to the actual activity;
- There will be no significant changes to the project description or surrounding environment between the completion of the EIA process and implementation of the proposed project that could substantially influence findings and recommendations with respect to mitigation and management, etc.;
- Public participation has been undertaken in terms of Chapter 6 of the EIA Regulations 2014;
- As a result of large number of landowners and occupiers in the ER application area and the availability of accurate title deed, landowner and occupier contact information, identification of and consultation with every landowner of and occupier of properties included in the ER application area was not achieved. A minimum of 94% of landowners have been notified. Much effort was made to make potentially affected parties aware through various other means (refer to Box 3-1); and
- The large size of the ER application area does not allow for, nor warrant, a detailed baseline assessment of the whole application area. It should, however, be noted that the databases that were utilised generally have good coverage, providing adequately accurate representation of the field conditions. Site assessments at each proposed core drilling location will also be undertaken during the EIA Phase.

### 3.3 SCOPING PHASE

#### 3.3.1 OBJECTIVES

In accordance with Appendix 2 to the EIA Regulations 2014, the objectives of the scoping process are to:

- identify the relevant policies and legislation relevant to the activity;
- present the need and desirability of the proposed activity and its preferred location;
- identify preferred activity, technology and sites related to the project proposal;
- ensure that all potential key environmental issues and impacts that would result from the proposed project are identified;
- agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to determine the risks and impacts of the activity; and
- identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of residual risks that require management and monitoring.

The scoping process consists of a series of steps to ensure compliance with these objectives and the EIA Regulations 2014 as set out in GN No. R982. The process involves an open, participatory approach to ensure that all impacts are identified and that decision-making takes place in an informed, transparent and accountable manner. A flowchart indicating the generic EIA process is presented in Figure 3-1.

#### 3.3.2 PRE-APPLICATION PUBLIC PARTICIPATION PROCESS

Although this step is not a legislated requirement of the EIA Regulations 2014, it provides an opportunity to notify landowners, key stakeholders and other I&APs of the proposed project and to raise any issues or concerns regarding the proposed exploration activities.

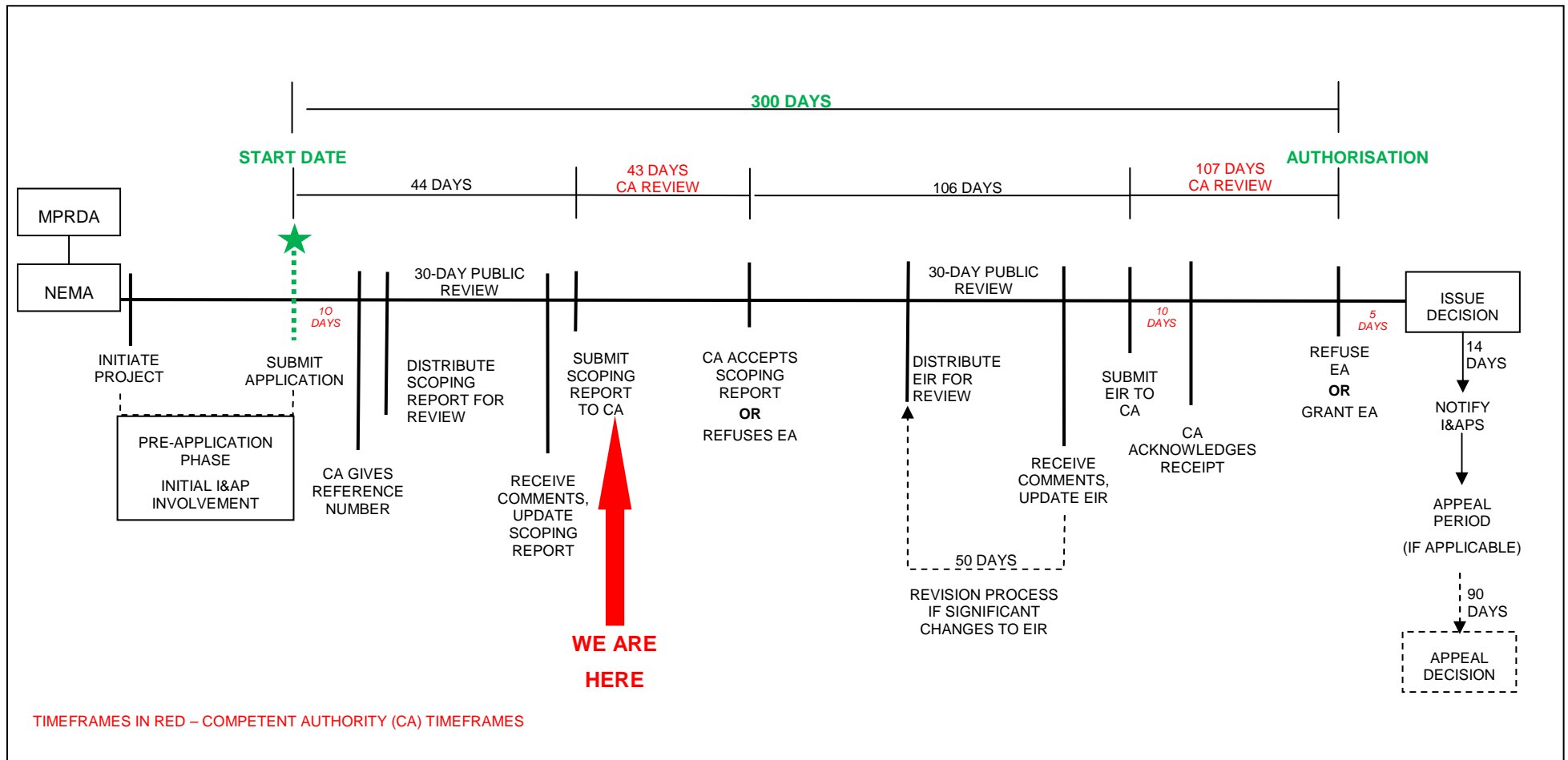
Steps undertaken during the Pre-application Public Participation Process are summarised in Box 3-1 and all supporting information is presented in appendices to this report.

A total of 28 written submissions were received during the pre-application public participation process (see Box 3-2 and Appendix 5.7). All written comments received were collated, and responded to, in an initial Comments and Responses Report, which was appended to the draft Scoping Report. An updated version of the Comments and Responses Report is presented in Appendix 5.10.

#### 3.3.3 APPLICATION FOR ENVIRONMENTAL AUTHORISATION

On 8 November 2016, Afro Energy submitted an application to PASA for Environmental Authorisation of the proposed ER application and associated exploration activities (i.e. Activity 18 in Listing Notice 2 and Activity 12 in Listing Notice 3) in terms of Section 24(5) of NEMA.

PASA acknowledged receipt of the Application for Environmental Authorisation on 11 November 2016 and requested that the Scoping Report be submitted to them on or before 13 January 2017. PASA correspondence is presented in Appendix 5.1.



**FIGURE 3-1: FLOW DIAGRAM SHOWING THE EIA PROCESS**



### **BOX 3-1: TASKS UNDERTAKEN DURING THE PRE-APPLICATION PUBLIC PARTICIPATION PROCESS**

- **Competent authority consultation**

Afro Energy held a pre-application meeting with PASA on 14 September 2016. The purpose of the meeting was to discuss the legislative requirements and the approach to the EIA process to ensure agreement and compliance.

- **Landowner identification**

Afro Energy identified all properties included as part of the ER application area (see Appendix 2). The properties included in the ER application area were searched against the Deeds Office records by LexusNexus to identify landowners. Further deeds and other internet searches were undertaken to obtain contact details for landowners. At the time of distribution of the draft Scoping Report it was estimated that 95% of the landowners within the ER application area had been notified.

- **I&AP identification**

In addition to landowners, a preliminary I&AP database of authorities (including State Departments with jurisdiction in the area, municipal offices, ward councillors and traditional authorities), Organs of State, Non-Governmental Organisations, Community-based Organisations and other key stakeholders (including farmers' unions) with a potential interest in the ER application was compiled. Additional I&APs were added to the database following responses to the advertisements and notification letter, and attendees at the Information-sharing Meetings (see bullets below). To date 487 I&APs have been registered on the project database (see Appendix 5.2).

It is recorded that the following State departments, as a minimum, have been notified and afforded opportunity to comment: PASA, South African Heritage Resources Agency (SAHRA), Department of Mineral Resources (Free State and Mpumalanga), Department of Agriculture and Rural Development (Free State), Department of Agriculture and Rural Development and Land Administration (Mpumalanga), Department of Water and Sanitation (Free State and Mpumalanga), Department of Rural Development and Land Reform (Free State and Mpumalanga), Department of Economic Development, Tourism, Environmental Affairs & Small Business (Free State), Department of Economic Development and Tourism (Mpumalanga), Department of Transport (Free State), Department of Public Works, Roads and Transport (Mpumalanga), district and local municipalities.

- **Meetings with directly affected landowners**

In September 2016 Afro Energy commenced with a process of discussing possible borehole locations with directly affected landowners. Meetings were held with various landowners in September, October and November 2016.

- **Notification letter and Background Information Document (BID)**

All identified landowners and I&APs were notified of the application and EIA process by means of a notification letter and BID (see Appendix 5.3 for letter, BID and proof of distribution). The BID (in English and Afrikaans) was compiled to provide introductory information on the project, to encourage people to register on the I&APs database and to provide an initial opportunity to comment. The letter and BID were distributed from 20 September 2016. I&APs had until the 21 October 2016 to submit initial comments to SLR in order for them to be included in the Scoping Report.

- **Site notices and advertisements**

Press advertisements providing notification of the ER application and EIA process were placed in the following newspapers (in both English and Afrikaans) on 23 September 2016 (see Appendix 5.4):

- Frankfort Herald;
- Vrede Record; and
- Cosmos News.

Site notices (in English and Afrikaans) were also placed at multiple locations in the ER application area, including Frankfort, Standerton, Cornelia and Vrede (see Appendix 5.5).

- **Information-sharing meetings**

The following information-sharing meetings were held during October 2016:

- 10 October 2016 (15h00): Siesta Guest House, 12 km from Frankfort;
- 11 October 2016 (09h00): Standerton Golf Club, Standerton;
- 11 October 2016 (15h00): NG Kerk Hall, Cornelia; and
- 12 October 2016 (09h00): Vrede Hotel, Vrede.

At these meetings Afro Energy and SLR provided a basic overview of the project proposal and EIA process, respectively, and provided stakeholders the opportunity to raise any issues or concerns. Minutes of these meetings (including presentation and attendance register) are presented in Appendix 5.6.

**BOX 3-2: LIST OF I&APS THAT SUBMITTED WRITTEN CORRESPONDENCE DURING THE INITIAL PUBLIC PARTICIPATION PROCESS**

**1. Organs of State**

- Free State Provincial Government: Department of Economic, Small Business Development, Tourism and Environmental Affairs
- National Department of Water and Sanitation
- Free State Agriculture
- Mpumalanga Agriculture
- Mpumalanga Provincial Government: Economic Development and Tourism
- SANRAL

**2. Organisations**

- Endangered Wildlife Trust
- Enviro Works
- Frack Free South Africa
- VKB

**3. Landowners / general I&APs**

- Ben Travers
- Jaco Hurter (Blydskap and Kleindeel)
- JAD Cilliers (Taaiboschspruit)
- Jacobus Lourens (JJ Lourens Trust)
- Johann van Heerden (Uitzoek 223, Wonderwal 1082, Driehoek 1058 and Hipkins Valley 1083)
- Johnny & Myra Muller (Uitzien, Uitzicht 313 and Geluk 325)
- Paul Kruger (Radnor 417)
- PB & M van Wyk (Zamenkomst 400 VR)
- PB de Wet (De Wetshoop)
- Piet Hurter (Deugsaam en Elim)
- PS Kruger (Runnymede and Christoffel's Rust)
- SR Koller (Aanleg 76)
- Werner Krugel (Eensgevonden Trust IT955/04)

### 3.3.4 COMPILATION AND REVIEW OF SCOPING REPORT

This Scoping Report has been prepared in compliance with Appendix 2 of the EIA Regulations 2014 (see Table 3-2) and has been informed by comments received during the Pre-application Public Participation Process and by comments received on the draft Scoping Report.

The draft Scoping Report was distributed for a 30-day comment period from 9 November to 9 December 2016 in order to provide I&APs with an opportunity to comment on any aspect of the proposed project and the findings of the

Scoping Phase. Public participation tasks undertaken during this phase are summarised in Box 3.3 and all supporting information is presented in appendices to this report.

A total of 18 written submissions were received during the draft Scoping Report review and comment period (see Box 3-4 and Appendix 5.9). All comments received have been collated, and responded to, in an updated Comments and Responses Report (see Appendix 5.10). The key issues raised were related to:

- The need and desirability of the proposed project;
- The potential impact on biodiversity (vegetation and terrestrial fauna), water resources, agricultural potential, land-use and heritage;
- Risks of possible future exploration and production;
- Impacts related to well stimulation and fracking (which are not proposed as part of the current work programme);
- Exclusion of CBAs and water resources from the ER application area;
- Other licences and approvals (e.g. Water Use Licence and heritage approval); and
- Impact management / mitigation (including rehabilitation).

The key issues identified by the project team during the Scoping Phase, with I&AP input, are summarised in Section 6 of this report.

### **BOX 3-3: TASKS UNDERTAKEN DURING THE DRAFT SCOPING REPORT REVIEW AND COMMENT PERIOD**

- **Landowner identification**

SLR continued to search properties within the ER application area against Windeed records, internet searches and discussions with key stakeholders (e.g. Transnet and Department of Public Works) to identify landowner contact details. At the time of completion of this report a minimum of 94% (856 of 912) of the landowners had been notified.

- **Draft Scoping Report availability**

Copies of the draft Scoping Report were made available on the SLR website ([www.ccaenvironmental.co.za](http://www.ccaenvironmental.co.za)) and at the following locations for the duration of the review and comment period:

<b><u>Name of Facility</u></b>	<b><u>Physical Address</u></b>
<u>Frankfort Public Library</u>	<u>JJ Hadebe Street, Frankfort</u>
<u>Standerton Public Library</u>	<u>Corner Mbonani Mavisela &amp; Beyers Naude Street, Standerton</u>
<u>Cornelia Public Library</u>	<u>Richter Street, Cornelia (next to old school)</u>
<u>Vrede Public Library</u>	<u>Kuhn Street, Vrede</u>

- **I&AP notification**

A notification letter was sent to all I&APs registered on the project database. The letter informed them of the release of the draft Scoping Report and where the report could be reviewed (see Appendix 5.8 for notification letter and proof of distribution). To facilitate the commenting process, a copy of the Executive Summary was enclosed with each letter. The notification letter and Executive Summary were made available in both English and Afrikaans.

Copies of the draft Scoping Report were sent directly to the following organs of state (see Appendix 5.8 for letters and proof of distribution):

<b><u>No.</u></b>	<b><u>Organ of state</u></b>	<b><u>Contact person</u></b>
<u>1</u>	<u>PASA</u>	<u>P Ngesi</u>
<u>2</u>	<u>Department of Mineral Resources: Free State</u>	<u>Z Ndlelendhle</u>
<u>3</u>	<u>Department of Mineral Resources: Mpumalanga</u>	<u>A Tshivhandekano</u>

<u>No.</u>	<u>Organ of state</u>	<u>Contact person</u>
4	<u>Department of Water and Sanitation</u>	<u>A Muir</u>
5	<u>Department of Water and Sanitation: Free State</u>	<u>TP Ntli</u>
6	<u>Department of Water and Sanitation: Mpumalanga</u>	<u>M Mulaudzi</u>
7	<u>Department of Economic Development, Tourism, Environmental Affairs &amp; Small Business: Free State</u>	<u>M Gasela</u>
8	<u>Department of Economic Development and Tourism: Mpumalanga</u>	<u>MW Mkize</u>
14	<u>Lekwa Local Municipality</u>	<u>L Tshabalala</u>
15	<u>Mafube Local Municipality</u>	<u>A Hlubi</u>
16	<u>Phumelela Local Municipality</u>	<u>B Kannemeyer</u>
17	<u>Dr Pixley ka Isaka Seme Local Municipality</u>	<u>PB Malebye</u>
18	<u>SAHRA - Online submission</u>	-

• **Meetings with directly affected landowners**

Afro Energy met with directly affected landowners, as well as some and neighbouring landowners, on 29 November 2016 in Vrede. The purpose of this meeting was to clarify outstanding issues and uncertainties remaining after the information-sharing meetings.

**BOX 3-4: LIST OF I&APS THAT SUBMITTED WRITTEN CORRESPONDENCE ON THE DRAFT SCOPING REPORT**

**1. Organs of State**

- Department of Agriculture, Forestry and Fisheries: Free State, Johan Zeelie
- Department of Mineral Resources: Free State, Tshifhiwa Makhokha
- Department of Water and Sanitation: Free State, Mdhuli Sibó
- Mpumalanga Agriculture, Robert Davel
- South African Heritage Resources Agency (SAHRA), Nokukhanya Khumalo
- Transnet Freight Rail, Teboho Modise
- Transnet Pipelines, Thami Hadebe

**2. Organisations**

- Endangered Wildlife Trust, Bradley Gibbons
- Enviro Works, Rikus Lamprecht
- GroundWork and Friends of the Earth South Africa, Niven Reddy
- NatureStamp, Susan Carter-Brown

**3. Landowners / General I&APs**

- Ben Travers
- HSV van Wyk (Helderfontein Ptn 10)
- JD van Wyk (Arundel – ext)
- MJ van Wyk (Brakwal – ext)

**TABLE 3-2: REQUIREMENTS OF A SCOPING REPORT IN TERMS OF THE EIA REGULATIONS 2014**

<b>Appendix 2</b>	<b>Content of Scoping Report</b>	<b>Completed (Y/N or N/A)</b>	<b>Location in report</b>
2(a)	<i>(i &amp; ii) Details and expertise of the Environmental Assessment Practitioner (EAP) who prepared the report.</i>	Y	Section 3.1
(b)	<i>The location of the activity, including:</i>		
	<i>(i) the 21 digit Surveyor General code of each cadastral land parcel; or</i>	Y	Appendix 2
	<i>(ii) where available, the physical address and farm name</i>		
	<i>(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;</i>	Y	Appendix 1
(c)	<i>A plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is:</i>		
	<i>(i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or</i>	N/A	N/A
	<i>(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken.</i>	Y	Appendix 1
(d)	<i>A description of the scope of the proposed activity, including:</i>		
	<i>(i) all listed and specified activities triggered;</i>	Y	Table 2-1
	<i>(ii) a description of the activities to be undertaken, including associated structures and infrastructure.</i>	Y	Section 4.6
(e)	<i>A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.</i>	Y	Section 2
(f)	<i>A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.</i>	Y	Section 4.3
(h)	<i>A full description of the process followed to reach the proposed preferred activity, site and location within the site, including:</i>		
	<i>(i) details of all the alternatives considered;</i>	Y	Section 4.3 & 4.8
	<i>(ii) details of the public participation process undertaken in terms of Regulation 41 of the Regulations, including copies of the supporting documents and inputs;</i>	Y	Section 3.3.2 & 3.3.4
	<i>(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;</i>	Y	Section 6 & Appendix 5.10
	<i>(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</i>	Y	Section 5
	<i>(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and</i>	Y	Section 7

Appendix 2	Content of Scoping Report	Completed (Y/N or N/A)	Location in report
	<i>(cc) can be avoided, managed or mitigated.</i>		
	<i>(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;</i>	Y	Section 8.4
	<i>(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</i>	Y	Section 6 & 7
	<i>(viii) the possible mitigation measures that could be applied and level of residual risk;</i>	Y	Section 6
	<i>(ix) the outcome of the site selection matrix;</i>	Y	Section 4.7.1 & Table 7-1
	<i>(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and</i>	N/A	Alternatives are considered in Section 4.7
	<i>(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity.</i>	Y	Section 4.7
(i)	<i>a plan of study for undertaking the environmental impact assessment process to be undertaken, including:</i> <ul style="list-style-type: none"> <li><i>(i) a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;</i></li> <li><i>(ii) a description of the aspects to be assessed as part of the environmental impact assessment process;</i></li> <li><i>(iii) aspects to be assessed by specialists;</i></li> <li><i>(iv) a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;</i></li> <li><i>(v) a description of the proposed method of assessing duration and significance;</i></li> <li><i>(vi) an indication of the stages at which the competent authority will be consulted;</i></li> <li><i>(vii) particulars of the public participation process that will be conducted during the environmental impact assessment process; and</i></li> <li><i>(viii) a description of the tasks that will be undertaken as part of the environmental impact assessment process;</i></li> <li><i>(ix) identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.</i></li> </ul>	Y	Section 8

Appendix 2	Content of Scoping Report	Completed (Y/N or N/A)	Location in report
(i)	<i>An undertaking under oath or affirmation by the EAP in relation:</i>	Y	Appendix 3
	<i>(i) the correctness of the information provided in the report;</i>		
	<i>(ii) the inclusion of comments and inputs from stakeholders and interested and affected parties; and</i>		
	<i>(iii) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;</i>		
(k)	<i>An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment.</i>	Y	Appendix 3
(l)	<i>Where applicable, any specific information required by the competent authority.</i>	N/A	N/A
(m)	<i>Any other matter required in terms of Section 24(4)(a) and (b) of the Act.</i>	Y	Sections 3, 5, 6, 7 & 8

### 3.3.5 COMPLETION OF THE SCOPING PHASE

If the Scoping Report is accepted, the project will proceed onto the EIA Phase (see Section 3.4). A Plan of Study for EIA as required in terms of Section 2(i) of Appendix 2 of GN R982 is included in Section 8 of this report.

## 3.4 EIA PHASE

### 3.4.1 OBJECTIVES

In accordance with Appendix 3 of GN. R982, the objectives of the EIA are to:

- identify the relevant policies and legislation relevant to the activity;
- present the need and desirability of the proposed activity and its preferred location;
- identify feasible alternatives related to the project proposal;
- ensure that all potential key environmental issues and impacts that would result from the proposed project are identified;
- provide a reasonable opportunity for I&APs to be involved in the EIA process;
- assess potential impacts of the proposed project alternatives during the different phases of project development;
- present appropriate mitigation or optimisation measures to minimise potential impacts or enhance potential benefits, respectively; and
- Through the above, to ensure informed, transparent and accountable decision-making by the relevant authorities.

### 3.4.2 SPECIALIST STUDIES

Three specialist studies will be commissioned to address the key issues that require further investigation and detailed assessment (refer to Section 8.3), namely ecological, groundwater and heritage.

The specialist studies will involve the gathering of data (desktop and site visit of proposed drill locations) relevant to identifying and assessing environmental impacts that may occur as a result of the proposed project. These impacts will then be assessed according to pre-defined rating scales (see Section 8.4). Specialists will also recommend appropriate mitigation or optimisation measures to minimise potential impacts or enhance potential benefits, respectively.

The terms of reference for the proposed specialist studies are presented in Sections 8.3.1 to 8.3.3.

### **3.4.3 INTEGRATION AND ASSESSMENT**

The specialist information and other relevant information will be integrated into an EIR, which will include an Environmental Managements Programme (EMPr). The specialist studies will be included as appendices to the EIR. The EIR will be released for a 30-day comment period and all I&APs on the project database will be notified when the EIR is available for comment.

After closure of the comment period, all comments received on the draft report will be incorporated and responded to in a Comments and Responses Report. The draft report will then be updated to a final report, which will include the Comments and Responses Report, and will be submitted to PASA for consideration and decision-making by the Minister of Mineral Resources.

After the Minister of Mineral Resources (or delegated authority) has reached a decision, all I&APs on the project database will be notified of the outcome of the application and the reasons for the decision. A statutory appeal period in terms of the National Appeal Regulations, 2014 (GN No. R993) will follow the issuing of the decision. In terms of Regulation 4(1)(a) an appellant must submit an appeal to the appeal administrator, and a copy of the appeal to the applicant, any registered I&AP and any organ of state with interest in the matter within 20 days from the date that the notification of the decision for an application for an Environmental Authorisation was sent to the registered I&APs by the applicant.



## 4 PROJECT DESCRIPTION

This chapter provides general project information; a general overview of exploration processes; describes the need and desirability for the proposed project; presents the proposed initial three-year exploration work programme and a description of the project alternatives.

### 4.1 GENERAL PROJECT INFORMATION

#### 4.1.1 APPLICANT DETAILS

Address: Afro Energy (Pty) Ltd  
PO Box 52237  
SAXONWORLD, 2132  
Johannesburg

Responsible person: Donald Ncube  
Tel: 011 483 1523  
Fax: 086 646 0162 or 011 483 3040  
E-mail: donald.ncube@badimo.co.za

#### 4.1.2 APPLICANT BACKGROUND

##### 4.1.2.1 Shareholders

Afro Energy is a South African registered company that was formed by Badimo Gas (Pty) Ltd (51% shareholder) and Kinetiko Energy Ltd (49%) combining their resources and interests. Badimo Gas is a South African registered company with interests in CBM exploration. Kinetiko Energy is an Australian registered company, listed on the Alternate Stock Exchange of Australia.

##### 4.1.2.2 CBM experience and existing rights

The partners in Afro Energy (namely Badimo Gas and Kinetiko Energy) hold existing ERs and are currently undertaking CBM exploration in Amersfoort (12/3/56 ER) and Volksrust (12/3/38 ER). Phased exploration has been undertaken in these areas since 2011.

Afro Energy has also applied for other ERs for CBM gas near to:

- Memel and Wakkerstroom (12/3/270 ER);
- Amersfoort (12/3/271 ER); and
- Secunda (12/3/272 ER).

These ER applications were submitted to PASA for decision-making in October 2013. Decisions on these applications are still pending.

##### 4.1.2.3 B-BBEE status

Afro Energy is a Level Two contributor and has a BEE Procurement Recognition Level of 125%.

## 4.2 GENERAL OVERVIEW OF CBM AND THE EXPLORATION PROCESS

### 4.2.1 WHAT IS COAL BED METHANE?

CBM is a natural gas, comprising mostly methane (CH<sub>4</sub>), that is often found in association with coal deposits where it is created as a by-product during the formation of coal (“coalification process”). CBM is different from typical conventional gas reservoirs, where the gas migrates from the source rock to a reservoir. In the case of CBM, coal is both the source and the reservoir. Coal is also normally found at depths of less than 1 000 m, which is somewhat shallower than conventional gas reservoirs. The methane is trapped in fine fractures (called “cleats”) within the coal matrix (and migration into the overlying / underlying geological strata), as a result of the pressure on the coal seam from overlying geological strata and water that generally fills the void spaces.

Due to the large internal surface area created by the internal fractured matrix, coal can store surprisingly large volumes of gas; six or seven times as much gas a conventional gas reservoir of equal rock volume. However, the greater the depth of the coal seam and associated increased pressure, the fractures in the coal may close, thereby reducing the permeability and the ability of the gas to move through and out of the coal (USGS, 2000).

Most coals, although not all, have a low porosity and low permeability, and CBM is generally only released if the overburden pressure is reduced, which normally involves the dewatering of the formation through a well (due to reduced hydrostatic pressure). Lowering the pressure allows the formation of free gas, which raises the gas permeability of the coal and facilitates the migration of gas into the wellbore. The lower pressure releases methane adsorbed on the coal face, which then flows to the wellbore. If the coal seam is permeable, dewatering the seam is enough to start gas flowing from the well. However, if the seam is not sufficiently permeable, well stimulation may be necessary (USGS, 2000; Schlumberger, 2009). Afro Energy has successfully completed wells, requiring no stimulation / hydraulic fracturing, in coal seams and associated sandstones in the Amersfoort area. The same is expected for the ER application area, which is located approximately 50 km to the south-west of Amersfoort.

Methane is a relatively clean form of energy that can be used to generate electricity, provide heat for domestic and industrial purposes, or be used as a fuel in vehicles. In recent times it has become an important source of energy in some countries, including the United States, Canada, China, India and Australia.

### 4.2.2 CBM EXPLORATION IN SOUTH AFRICA

Forty-two Exploration Rights and one Production Right have been issued for CBM and natural gas in South Africa (see Table 4-1).

**TABLE 4-1: EXISTING ONSHORE PETROLEUM EXPLORATION AND PRODUCTION RIGHTS IN SOUTH AFRICA (SOURCE: PASA, OCTOBER 2016)**

No.	Holder	Area / Province	Type of petroleum
<b>Exploration Rights</b>			
1	Inert Gas Industries	Heilbron, Free State	Natural Gas
2	Inert Gas Industries	Heilbron, Free State	Natural Gas
3	Molopo	Evander, Mpumalanga	CBM
4	Molopo	Virginia, Free State	Natural Gas
5	Molopo	Evander, Free State	CBM

No.	Holder	Area / Province	Type of petroleum
6	Molopo	Virginia, Free State	Natural Gas
7	Molopo	Virginia, Free State	Natural Gas
8	Molopo	Virginia, Free State	Natural Gas
9	Riverwalk Trading	Lydenburg, Mpumalanga	CBM
10	Tully Resources	Amersfoort, Mpumalanga	CBM
11	Highveld Gas	Standerton, Mpumalanga	CBM
12	Moonstone Investments 81	Grootvlei North, Gauteng	CBM
13	Iningi Investments	Soutpansberg, Limpopo	CBM
14	Badimo Gas /Kinetiko Energy	Amersfoort NWS, Mpumalanga	CBM
15	Molopo	Virginia, Free State	Natural Gas
16	Molopo	Virginia, Free State	Natural Gas
17	Badimo Gas/Kinetiko Energy	Amersfoort Extension, Mpumalanga	CBM
18	Vibrant Veterans Energy Res.	Soutpansberg, Limpopo	CBM
19	Coal of Africa Limited(Tshipise)	Soutpansberg, Limpopo	CBM
20	Vibrant Veterans Energy Resources (Tshipise)	Brits, North West	Natural Gas
21	Vibrant Veterans Energy Res (Tshipise)	Soutpansberg, Limpopo	Natural Gas
22	Umbono	Soutpansberg, Limpopo	Natural Gas
23	Umbono	Springbokflats, Limpopo	Natural Gas
24	Alumni	Lydenburg, Mpumalanga	CBM
25	Aberdeen	Alexandria, Eastern Cape	Natural Gas
26	Anglo	Waterberg, Limpopo	CBM
27	Anglo	Waterberg, Limpopo	CBM
28	Anglo	Waterberg, Limpopo	CBM
29	Anglo	Waterberg, Limpopo	CBM
30	Anglo	Waterberg, Limpopo	CBM
31	Anglo	Waterberg, Limpopo	CBM
32	Anglo	Waterberg, Limpopo	CBM
33	Anglo	Waterberg, Limpopo	CBM
34	Anglo	Coalbrook 1, Gauteng	CBM
35	Anglo	Grootvlei1, Gauteng	CBM
36	Anglo	Grootvlei2, Gauteng	CBM
37	Anglo	Coalbrook2, Gauteng	CBM
38	Iningi	Soutpansberg Limpopo	CBM
39	Umbono	Bela-Bela, Limpopo	CBM
40	Badimo Gas	Waterberg, Limpopo	CBM
41	Badimo Gas	Aliwal North, Eastern Cape	CBM
42	Booi Brothers	Mutale & Malamulele, Limpopo	Natural Gas
<b>Production Rights – currently in production</b>			
1	Molopo/Tetra4	Free State	Natural Gas

#### 4.2.3 EXPLORATION-TO-PRODUCTION PROCESS

The purpose of exploration is to identify the existence of any commercially viable reserves of gas, in this instance a CBM resource. The conditions necessary for CBM reserves to have accumulated are complex and largely dependent on past geological history and present geological formations and structures.

Discovering such reservoirs and estimating the likelihood of them containing a viable resource is a technically complex process consisting of a number of different stages requiring the use of a range of exploration techniques. Such techniques may include, *inter alia*, aeromagnetic or gravity surveys, deep and shallow geophysical (seismic) surveys, shallow coring and drilling, and exploration and appraisal drilling (DTI, 2001). Exploration is an iterative process with data acquired from a prior stage required to improve the knowledge and understanding of the resource, which may then be subject to a later stage of more intensive exploration.

Exploration generally begins with an application for a TCP and the identification of target areas. This is undertaken by integrating regional surface and basin structure data derived from available legacy data (i.e. desktop analysis). Based on the general geological understanding, broad areas are initially identified as being prospective with the potential to contain CBM gas reserves. An analysis of data by Afro Energy, collected as part of their TCP (see Section 4.4), has indicated that conditions in the ER application area are permissive for the occurrence of methane gas in underground coal seams and associated geological strata.

Prospective areas are then subjected to early-phase exploration, through an application for an ER, which is focused on large-scale regional analysis. Prospective areas are further defined using a combination of techniques (e.g. aeromagnetic / gravity surveys, core borehole drilling and seismic surveys) to define and aid in the understanding of deeper, subsurface geology. The proposed project is currently in this stage of exploration. The work undertaken in the early-phase exploration stage might identify potential areas of interest that warrant further exploration, but would not typically enable the extent of the reservoir to be defined. Through the course, or at the end, of the early-phase exploration stage non-prospective areas would typically be relinquished by the applicant from the ER area. Thus the extent of the ER area would decrease as the exploration process progresses.

Exploration in areas identified as prospective would then progress to the appraisal stage. Identified areas of potential interest may be subjected to further seismic and lithological studies, which may involve reinterpreting existing data or conducting new surveys. Such surveys would typically be conducted at higher resolution or with more accurate techniques to improve the confidence in the information. The purpose of these surveys is to delineate and evaluate the prospects of interest identified in the first phase of exploration. Exploration wells would then be planned to access the target stratigraphy for testing, which may include permeability testing and pressure testing. This work is aimed at identifying and defining the extent of target areas with high CBM potential, as well as whether or not the size of the resource warrants further study and drilling. At the end of this stage the non-prospective areas would again typically be relinquished by the applicant from the ER area, thus the extent of the ER being further reduced.

Only once it is determined that a field is commercially viable would an operator consider moving into the production phase and apply for a Production Right.

As indicated above, Afro Energy is at the beginning of the exploration process and at this stage is only seeking authorisation to undertake early-phase exploration activities (see Section 4.5). This is the second step in determining if there is a likely CBM resource in the ER application area that would warrant further investigation (the first phase having been the technical study undertaken as part of the TCP). At this stage it is not known whether there are viable CBM reserves in the ER application area. The proposed exploration work programme is designed to improve the understanding of the regional geology and inform the potential for the occurrence of a CBM gas resource that would warrant further exploration.

### 4.3 NEED AND DESIRABILITY

The DEA guideline on need and desirability (GN R891, 20 October 2014) notes that while addressing the growth of the national economy through the implementation of various national policies and strategies, it is also essential that these policies take cognisance of strategic concerns such as climate change, food security, as well as the sustainability in supply of natural resources and the status of our ecosystem services. Thus, the over-arching framework for considering the need and desirability of development in general is taken at the policy level through the identification and promotion of activities / industries / developments required by civil society as a whole. The DEA guideline further notes that at a project level (as part of an EIA process), the need and desirability of the project should take into consideration the content of regional and local plans, frameworks and strategies.

In light of the above, this section aims to provide an overview of the need and desirability for the proposed project by firstly, highlighting the applications for the use of natural gas (particularly with reference to the electricity generation sector) and, secondly, how these applications are aligned within the strategic context of national policy and energy planning, broader societal needs and regional planning, as appropriate.

#### 4.3.1 USE OF NATURAL GAS

Natural gas is a fossil fuel, which is used globally as a source of energy for heating, cooking and electricity generation. It is also used as fuel for vehicles and in the manufacturing of plastics and other commercially important chemicals. The fastest growing sector for the use of natural gas is for the generation of electric power (Union of Concerned Scientists, n.d.).

Natural gas power plants usually generate electricity in gas turbines, directly using the hot exhaust gases from the combustion of the gas. Of the three fossil fuels used for electric power generation (coal, oil and natural gas), natural gas emits the least carbon dioxide per unit of energy produced. When burnt, natural gas emits 30% and 45% less carbon dioxide than burning oil and coal, respectively. Burning natural gas also releases lower amounts of nitrogen oxides, sulphur dioxide, particulates and mercury when compared to coal and oil (Union of Concerned Scientists, n.d.).

As economic growth is dependent on the availability of electricity, ensuring a sustainable and reliable supply of electricity with sufficient capacity is a key aspect to growing the economy of South Africa in the future. The electricity shortages experienced in South Africa over the past decade were a contributing factor to the significant slowdown in economic growth rate. To enable economic growth within the target rate of between 6% and 8% (Accelerated and Shared Growth Initiative, 2004) to be achieved, it will be necessary for Government to continue increasing electricity generating capacity in the country.

In the context of the above, the use of natural gas for electricity generation is considered to have substantial benefits going forward and is identified in national policy, together with renewable energy technologies, as an alternative in diversifying the domestic energy supply away from its current reliance on coal. The feasibility of using natural gas for domestic power generation is considered to be dependent on the extent of available domestic reserves of natural gas, as well as the financial cost of importing natural gas should those reserves be insufficient.

At present, domestic resources are limited to offshore gas fields close to Mossel Bay (F-A field), which are understood to be in decline. The F-O offshore field (Project Ikhwezi) is envisioned to complement this supply in the short- to medium-term. Other proven offshore reserves include the Ibhubesi Gas Field off the West Coast of South Africa. The development of this field to supply gas to the existing Ankerlig Power Station is

currently being considered. Neighbouring countries (Mozambique and Namibia) and regional African nations (Angola and Tanzania) have substantial gas reserves. Presently, gas is imported to South Africa through the Republic of Mozambique Pipeline Company (ROMPCO) pipeline from Mozambique. This gas is mostly used for chemical processes in Sasol's coal-to-liquid (CTL) process in Secunda (Bischof-Niemz, *et al.*, 2016). In Johannesburg, Egoli Gas supplies industry and households in some suburbs with reticulated natural gas that is sourced from Sasol.

In 2013, the total natural gas supply in South Africa (domestic production and import) equated to approximately 2.5% of total primary energy supply for the country (Bischof-Niemz, *et al.*, 2016). Thus, an increase in domestic natural gas reserves would enable South Africa to take steps to secure the country's energy supply (through diversification), assist in reducing the emissions of greenhouse gases (by reducing the country's reliance on coal for electricity generation) and reduce the need for the importation of gas. As such, exploration for additional domestic hydrocarbon reserves is considered important and supported by national policy, and any discoveries would be well received by the local market.

#### **4.3.2 NATIONAL POLICY AND PLANNING CONTEXT**

This section aims to provide an overview of the national policy and planning context relating to the promotion of development in general within South Africa, developing the energy sector (with specific reference to natural gas and renewable energy) and response to climate change.

##### **4.3.2.1 White Paper on the Energy Policy of the Republic of South Africa (1998)**

The White Paper on the Energy Policy (1998) is the overarching policy document which guides future policy and planning in the energy sector. The objectives of the policy included the stimulation of economic development, management of energy related environmental and health impacts and diversification of the country's energy supply to ensure energy security.

It is stated that the government will, *inter alia*, “*promote the development of South Africa's oil and gas resources...*” and “*ensure private sector investment and expertise in the exploitation and development of the country's oil and gas resources*”. The successful exploitation of these natural resources would contribute to the growth of the economy and relieve pressure on the balance of payments. Before the development of the country's oil and gas resources can take place, there is a need to undertake exploration activities to determine their extent and the feasibility of utilising these resources for production.

##### **4.3.2.2 White Paper on the Renewable Energy Policy (2003)**

The White Paper on Renewable Energy is intended to supplement the White Paper on Energy Policy (described above) and sets out Government's vision, policy principles, strategic goals and objectives for promoting and implementing renewable energy in South Africa. The position of the paper is based on the integrated resource planning criterion of “*ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options*”. The White Paper affirms Government's commitment to develop a framework within which the renewable energy industry can operate, grow, and contribute positively to the South African economy and to the global environment. The White Paper indicated that due to the limited availability of gas reserves, gas was unlikely to form any major component of primary energy supply over any extended period when compared with coal, even though natural gas is considered to a “cleaner fuel” in comparison with coal and oil.

#### 4.3.2.3 National Gas Infrastructure Plan (2005)

The National Gas Infrastructure Plan is Government's strategy for the development of the natural gas industry in South Africa so as to meet the energy policy objectives set out in the White Paper on Energy Policy (1998). The plan sets out the outlook for gas consumption and production globally and within South Africa and aims to articulate Government's broad policy and development aims. The plan outlines four main phases of gas infrastructure development (each with sub-phases) and following the completion of these projects, it is envisaged that there will be a fully integrated network linking the major economic centres to the upstream supplies of gas.

#### 4.3.2.4 New Growth Path (2011)

The New Growth Path (NGP) reflects the commitment of Government to prioritise employment creation in all economic policies and sets out the key drivers and sectors for employment which will be the focus of Government. The sectors identified for prioritisation include infrastructure, agriculture, mining, manufacturing, tourism and the green economy.

Within the green economy sector, the NGP targets 300 000 additional direct jobs by 2020, with 80 000 in manufacturing and the rest in construction, operations and maintenance of new environmentally friendly infrastructure. It is envisaged that the additional jobs will be created by expanding the existing public employment schemes to protect the environment and the production of biofuels. The NGP notes that renewable energy provides new opportunities for investment and employment in manufacturing new energy technologies as well as in construction.

The NGP further identifies the need to develop macro-economic strategies and micro-economic measures to achieve sustainable expansion of work opportunities and output. As part of the identified micro-economic measures, the NGP states that South Africa should be the driving force behind the development of regional energy, transport and telecommunications infrastructure. Priorities in this regard include strengthening the regional integration of energy by undertaking urgent improvements in electricity interconnectors, and exploring other opportunities for enhancing clean energy across central and southern Africa, including natural gas.

#### 4.3.2.5 National Development Plan (2012)

The National Development Plan (NDP) (2012) provides the context for all growth in South Africa, with the overarching aim of eradicating poverty and inequality between people in South Africa through the promotion of development. It is also acknowledged that environmental challenges are in conflict with some of these development initiatives. As such, it is emphasised that there is also a need to:

- protect the natural environment;
- enhance the resilience of people and the economy to climate change;
- extract natural resources to facilitate the improvement of living standards, skills and infrastructure in a sustainable manner; and
- reduce greenhouse gas emissions and improve energy efficiency.

The NDP identifies the need to develop the electricity generation sector in order to support the growth of the national economy and reach the stated developmental objectives. It is further acknowledged that emissions of carbon dioxide and other greenhouse gases potentially pose a significant cost on a global scale with respect to climate change. While South Africa contributes to these emissions, it is acknowledged that it is

also particularly vulnerable to the effects of climate change. Thus, in conjunction with developing the electricity generation sector further, the NDP also aims to ensure that carbon emissions are reduced.

The NDP identifies the construction of infrastructure to import liquefied natural gas, increasing exploration for domestic gas feedstock (including investigating shale and coal bed methane reserves) and procuring at least 20 000 MW of renewable electricity by 2030 as priority investments (amongst others) needed to develop the electricity generation sector further.

#### 4.3.2.6 Integrated Resource Plan for Electricity (2010 and updated in 2013 and 2016)

The Integrated Resource Plan (IRP) for Electricity (2010 - 2030), initiated by the Department of Energy (DoE), is viewed as an outline of Government's planned policy to meet the current and projected energy demands of the country for the foreseeable future. The IRP also defines a mix of generating technologies to ensure that the projected demand can be met.

The IRP was updated in 2013 (the Draft IRP 2013) to reflect changes in the electricity demand outlook from what was anticipated in 2010. The key recommendations of the updated IRP include delaying the decision on increasing the nuclear base-load, procuring a new set of fluidised bed combustion coal generators, making use of regional hydro-electric generation, continuing the Renewable Energy Independent Power Producers (REIPP) programme and undertaking further exploration of regional and domestic gas options. This document was, however, never accepted by Cabinet.

The IRP document was again updated and released for public comment in November 2016 (the Draft IRP 2016). The plan states that South Africa should continue to pursue a diversified energy mix, which reduced reliance on a single or a few primary energy sources.

- **Coal:** Coal should continue to play a role in electricity generation. However, investments need to be made in new and more efficient technologies. Investments should also continue on the testing of underground coal gasification. New coal-to-liquid (CTL) plants are not competitive if South Africa is to achieve the objective of moving towards a low carbon economy, and despite the beneficiation targets, no new investments are encouraged in this regard. Long-term investment in research and test injections for Carbon Capture and Storage (CCS) should continue to be pursued.
- **Nuclear:** Power generation from nuclear needs to play a more significant role in the provision of new baseload generation, depending on the cost of nuclear reactors and the financing thereof. The first unit of the New Nuclear Build Programme should be brought on line by 2030. However, additional capacity should be implemented at a scale and pace that will not have a negative impact on the economy and additional capacity can be brought online after 2030 in a well-spaced out manner.
- **Natural Gas:** Natural gas presents the most significant potential in the energy mix. The use of natural gas in Combined Cycle Gas Turbines in the electricity sector, Gas-to-Liquid plants in the liquid fuel sector and for direct thermal applications in the industrial and residential sectors, positions it as a viable option in the energy mix. Local exploration to assess the magnitude of recoverable shale and coastal gas needs to be pursued in line with the relevant regulations.
- **Crude Oil and Imports of Final Liquid Fuels:** The low contribution of crude oil in the energy mix is informed by the assumption that lower priced gas (mainly comprising natural gas) will be available and no externality costs will be imposed on imported refined product. If, however, levels of economically recoverable shale gas are insignificant and externality costs are included in the price of imported fuels, crude oil may need to have a greater contribution in the energy mix. However, new refinery capacity will be essential in the medium- to long-term.
- **Solar:** Solar photovoltaics and Concentrated Solar Power with storage present excellent opportunities to diversify the electricity mix, to produce distributed generation and to provide off-grid electricity.



- **Wind:** Wind presents an alternative source of power. However, this is limited to windy areas on the coast.
- **Biomass:** Biomass can play a role as a feedstock for cogeneration and in the provision of electricity close to the source.

#### 4.3.2.7 Draft Integrated Energy Plan (2013)

The Draft Integrated Energy Plan (IEP) (2013) seeks to determine how current and future energy needs can be addressed efficiently. Key objectives outlined in the plan include security of supply, increased access to energy, diversity in supply sources and primary sources of energy, and minimising emissions. The plan indicates that projected demand for natural gas between 2010 and 2050 would be second only to petroleum products, primarily due to increased growth in the industrial sector.

The Draft IEP points out that given South Africa is a net importer of oil, the liquid fuels industry and its economy is vulnerable to fluctuations in the global oil market. It is noted that the current natural gas consumption exceeds production, with the majority of demand being met through imports from Mozambique.

The plan states that the use of natural gas as an alternative electricity generator must be considered in moderation due to limited proven reserves, but that it has significant potential both for power generation, as well as direct thermal uses. The use of natural gas for power generation is considered as an option to assist South Africa to move towards a low carbon future given that natural gas has a lower carbon content than coal.

The role of renewable energy to deliver the intended policy benefits of improved energy security and reduced greenhouse gas emissions is also acknowledged in the plan. The availability of untapped renewable energy resources within the country is highlighted. It is noted that the DoE had implemented the REIPPs procurement process to increase the share of renewable energy technologies in the energy mix. The plan also highlights that storage remains the most important challenge to the widespread use of renewable energy. Due to the intermittent nature of renewable energy systems and the variability in electricity load requirements, the storage of the electricity generated when demand is low is considered to be critical. Thus the IEP notes that there is still a need to incorporate the use fossil fuels and nuclear power to ensure that there is both sufficient base-load electricity generating power to meet the minimum needs and peak-load power to meet the needs during peak periods.

#### 4.3.2.8 Gas Utilisation Master Plan (GUMP)

The DoE is currently in the process of compiling a Gas Utilisation Master Plan (GUMP) for South Africa. The GUMP is intended to be a long-term (30-year) plan for the development of a gas industry within South Africa. One of the key objectives of the GUMP is to enable the development of indigenous gas resources and to create the opportunity to stimulate the introduction of a portfolio of gas supply options. The GUMP will inform a Gas Independent Power Producers Programme with the intent to bring gas demand and supply on stream at the same time.

#### 4.3.2.9 Paris Agreement - United Nations Framework Convention on Climate Change

The Paris Agreement was adopted by South Africa on 12 December 2015 at the 21<sup>st</sup> session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC CoP21).

The Paris Agreement is a comprehensive framework which aims to guide international efforts to limit greenhouse gas emissions and to meet challenges posed by climate change. The main objective of the Paris Agreement is to limit the global temperature increase to below 2°C. Each individual country is responsible for determining their contribution (referred to as the “nationally determined contribution”) in reaching this goal. The Paris Agreement requires that these contributions should be “ambitious” and “represent a progression over time”. The contributions should be reported every five years and are to be registered by the UNFCCC Secretariat. As a signatory to the Paris Agreement, South Africa will be required to adopt the agreement within its own legal systems, through ratification, acceptance, approval or accession.

*“As a signatory to the Paris Agreement, South Africa would be required to investigate alternatives to existing industries which have high carbon-emissions. In this regard, it is anticipated that there will be a shift away from coal-based energy production within the energy sector and increased reliance on alternative energy sources. Given the fact that natural gas produces lower emissions and is a highly efficient source of energy when compared to coal, the increased use of natural gas can, in the short term, serve as bridge on the path to the carbon-neutral goal of the Paris Agreement”* (Source: <http://www.energylawexchange.com/the-paris-agreement-on-climate-change-implications-for-africa/>).

The SEA for Shale Gas Development (CSIR, 2016) indicates that *“including more natural gas in South Africa’s energy mix would make the energy system more efficient, cheaper and more reliable. Natural gas, regardless of its source, has a desirable set of qualities that coal and oil do not possess. Gas can be used in almost all subsectors (e.g. power generation, heat, transport, manufacture of chemicals); is easily transported once gas infrastructure is in place; is supported by a growing international market; is a more consistent fuel than coal (thus more flexible and easier to handle); is less CO<sub>2</sub> intensive when burnt than coal (if leakage during production and transport is minimised); can be more efficiently used for power generation (more kWh per GJ); has high operational flexibility; and has an end-use cost structure that is capital- light and fuel-intensive, making it economically flexible”* (Summary for Policy Makers, Page 12).

#### **4.3.2.10 National Climate Change Response White Paper**

The White Paper on the National Climate Change Response presents the South African Government’s vision for an effective climate change response and the long-term, just transition to a climate-resilient and lower-carbon economy and society. South Africa’s response to climate change has two objectives:

- Effectively manage inevitable climate change impacts through interventions that build and sustain South Africa’s social, economic and environmental resilience and emergency response capacity; and
- Make a fair contribution to the global effort to stabilise greenhouse gas (GHG) concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner.

The White Paper acknowledges that South Africa has relatively high emissions for a developing country. The energy intensity of the South African economy, largely due to the significance of mining and minerals processing in the economy and the coal-intensive energy system, means that South Africa is a significant emitter of GHGs. The majority of South Africa’s energy emissions arise from electricity generation.

The White Paper sets out South Africa’s overall response strategy through strategic priorities, leading to a series of adaption, mitigation, response measures and priority flagship programmes. Policy decisions on new infrastructure investments must consider climate change impacts to avoid the lock-in of emissions-intensive technologies into the future. In the medium-term, the White Paper indicates that a mitigation option with the biggest potential includes a shift to lower-carbon electricity generation options. The Renewable

Energy Flagship Programme is identified as possible driver for the deployment of renewable energy technologies.

### 4.3.3 REGIONAL POLICY AND PLANNING CONTEXT

This section aims to provide an overview of the regional policy and planning context relating to development within the Free State and Mpumalanga Provinces.

#### 4.3.3.1 Free State

##### 4.3.3.1.1 Free State Provincial Spatial Development Framework (2013)

The Free State Provincial Spatial Development Framework (PSDF) aims to align the province's strategies, proposals and guidelines for future spatial development with the Free State Development Strategy (FSGDS) 2005 – 2014 and the NDP (refer to Section 4.3.2.5). Like the NDP, the PSDF identifies key challenges to be addressed through plans and strategies. Four categories have been identified, each with its own challenges and plans and strategies to address the challenges. The four categories identified include:

- Context - Lack of international and national cooperation as it relates to biodiversity conservation and efficient bioregional planning.
- The Place - Addressing the space-related aspects that represent the environmental capital of the Free State.
- The People - Towards enhancing of well-being of the people of the province as an imperative for sustainable development.
- The Economy - Towards promoting the economy and ensuring efficient use of monetary and infrastructural capital for the benefit of all (Van der Merwe, 2013).

##### 4.3.3.1.2 Fezile Dabi District Municipality Integrated Development Plan (2016-2017)

The Fezile Dabi District Municipality IDP acts as a guideline for decision makers, creates a spatial logic guiding private sector investment, ensure social, economic and environmental sustainability, establish public sector developmental priorities and identify spatial priorities and places where public-private partnerships are possible. The SDF (a component of the IDP) highlights the fact that the natural resource management, land rights and tenure arrangements, land capability sub-division and consolidation of farms and the protection of prime agricultural land are issues that needs specific attention.

The IDP notes that developmental constraints in the district include: the functionality of urban concentrations that are not well defined, slow land reform, high unemployment rate, poverty levels, HIV/AIDS infection rate, crime and illiteracy, underutilisation of tourism potential and a need for housing, sanitation and infrastructure upgrades.

The development opportunities within the district include: the area has high agricultural and tourism potential, complimentary services to the primary agricultural and tourism sectors are required, natural resources can be utilised for job creation, good internal and external linkage exist via good road networks, electricity supply to the area is good and industrial stands are available. It is also noted that the district has location advantages in sectors such as agriculture, mining, manufacturing and electricity provision.

#### 4.3.3.1.3 Thabo Mofutsanyane District Municipality Integrated Development Plan 2015 - 2016

The Thabo Mofutsanyane District Municipality (TMDM) IDP notes that following to be their developmental outcomes: Integrated cities, towns, rural areas and social cohesion; Local economic development; and Environmental sustainability. In order to achieve these, a number of priority issues, objectives, strategies and projects have been included in the IDP. The priority issues that are contained in the IDP are: water, sanitation, electricity, waste management, roads, storm water, housing, cemeteries, rural development, telecommunication, environmental management, health, education, safety and security, transport, sports and recreation, industrial development and disaster management. The developmental strategies have been informed by local, provincial and national policy and strategy guidelines.

#### 4.3.3.2 Mpumalanga

##### 4.3.3.2.1 Mpumalanga Growth and Development Path (MGDP) 2011

The primary objective of the Mpumalanga Economic Growth and Development Path is to foster economic growth that creates jobs, reduces poverty and inequality in the Province. The following are the main economic sectors that have been identified as pivotal in spurring economic growth and employment creation:

- Agriculture and forestry
- Mining and energy;
- Tourism and cultural industries;
- The Green Economy and Information Communication Technology; and
- Manufacturing and beneficiation.

The MGDP recognises that the mining industry remains one of the important economic sectors in the Province for economic growth and job creation. It, however, identifies water supply, energy insecurity, skills availability, inadequate infrastructure and competition between mining, agriculture and human settlements as the main constraints to mining in the Province.

The MGDP also identifies the need to support the development of clean forms of energy (including wind and hydro power), including gas production from landfill and organic waste.

##### 4.3.3.2.2 Mpumalanga Rural Development Programme 2001

The main objective of the programme is to contribute towards an “improvement of the social and economic situation of the rural poor.” The programme focuses on the creation of income and employment in rural areas, and the key concepts of the programme include:

- Self-reliance / empowerment: strengthen the self-help capabilities of the communities and emphasise development planning;
- Economic growth: encourage local economic development, employment and income generation through the promotion of small and micro-sized rural enterprises and the participation of the private sector;
- Sustainability: improve viable and sustainable natural resource utilisation;
- Outreach: upgrade and broaden the facilitation of government services to the impoverished;
- Capacity building: strengthen, advise and train service providers;
- Innovation: develop innovative concepts for public service delivery;
- Mainstream: get innovations on track;

- Coping with HIV/AIDS: plan, design and implement relevant strategies in order to cope with HIV/Aids; and
- Stakeholder participation: ensuring participation by all concerned.

#### 4.3.3.2.3 Gert Sibande District Municipality IDP 2016 / 2017

The key sectors that drive the economy of the Gert Sibande District Municipality are:

- Manufacturing;
- Mining;
- Energy Generation and Supply;
- Agriculture;
- Forestry;
- Tourism; and
- Transportation and logistics.

The IDP recognises areas, including Standerton, Ermelo, Bethal and Piet Retief, as strong agricultural areas varying between crops and livestock farming. The tourism sector is not yet fully developed and should maximise its potential. The mining sector is one of the main contributors to the Province's Gross Value Added with the major concentration within Govan Mbeki Local Municipality and smaller operations, such as the Driefontein mine in Mkhondo Local Municipality. The coal-mining activities enable electricity generation by the coal-fired power stations in the District. The processing of the mined products either for electricity generation or petrochemicals contributes immensely to the economy of the country. These sectors have not been fully exploited to their maximum capacity to benefit the economy of the District.

#### 4.3.4 SUMMARY OF NATIONAL AND REGIONAL POLICY AND PLANNING

The previous sections have considered the various national and regional policies, plans, guidelines and conventions which are relevant to the proposed exploration activities. As highlighted above, there is a drive from national and provincial Governments to stimulate development and grow the economy of South Africa. In order to facilitate this economic growth, there is a need to ensure that there is sufficient capacity in the country's electricity supply by diversifying the primary energy sources within South Africa. One of the proposals to meet this aim is to develop the oil and gas sector within the country.

Afro Energy's ultimate goal is to provide a reliable source of "cleaner" energy in order to address the current energy crisis facing South Africa by diversifying the current energy mix, which is considered to be a key aspect to growing the economy of South Africa in the future. The proposed exploration activities would allow for the determination of whether or not petroleum and gas resources are located within the ER application area. By gaining a better understanding of the extent, nature and economic feasibility of extracting these potential resources, the viability of developing indigenous gas resources would be better understood.

At the same time, it is acknowledged that the promotion of the oil and gas sector could also be considered in contradiction with other plans and policies, which identify the need to reduce the reliance on fossil fuels for electricity generation. Nevertheless, the current limitations of renewable energy technologies are such, that there is still a need to include fossil fuels within the energy mix of the country.

### 4.3.5 CONSISTENCY WITH NEMA PRINCIPLES

The national environmental management principles contained in NEMA serve as a guide for the interpretation, administration and implementation of NEMA and the EIA Regulations. In order to demonstrate consistency with the NEMA principles, a discussion of how these principles are taken into account during the EIA process is provided in Table 4-2 below.

**TABLE 4-2: CONSIDERATION OF THE NEMA PRINCIPLES IN RELATION TO THE PROPOSED PROJECT**

National Environmental Management Principles	Comment
(2) <i>Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.</i>	<p>The proposed project aims to determine the presence of CBM resources within the ER area. Confirmation of the presence of such resources would enable the country to refine its long-term planning for the development of the oil and gas sector within the country.</p> <p>The gas sector is known to have significant economic benefits, as well as environmental risks, that need to be balanced.</p>
(3) <i>Development must be socially, environmentally and economically sustainable.</i>	<p>Government has indicated that there is a need for the country to reduce its reliance on coal-based electricity. The use of natural gas is being considered to assist in reaching this goal. By determining the presence (and extent) of such resources, the sustainability of developing the petroleum sector within the country can be better considered.</p>
<p>(4)(a) <i>Sustainable development requires the consideration of all relevant factors including the following:</i></p> <ul style="list-style-type: none"> <li><i>(i) That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;</i></li> <li><i>(ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;</i></li> <li><i>(iii) that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;</i></li> <li><i>(iv) that waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;</i></li> <li><i>(v) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;</i></li> <li><i>(vi) that the development, use and exploitation</i></li> </ul>	<p>The EIA process will consider potential social, economic, biophysical impacts that could result through the implementation of the proposed exploration activities.</p> <p>The EIR will also identify measures to avoid, minimise and/or remedy pollution and/or degradation of the environment that may occur as a result of the proposed exploration activities.</p> <p>By determining the presence and extent of any natural gas reserves, it can be determined whether the possible future use of these non-renewable resources would be sustainable.</p>

National Environmental Management Principles	Comment
<i>of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;</i>	
(4)(a)(vii) <i>that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and</i>	Assumptions, uncertainties and limitations associated with the compilation of the Scoping Report are discussed in Section 3.2.  Compliance with the various legislative requirements is presented in Section 2.4.
(4)(a)(viii) <i>that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.</i>	The EIA process will consider and assess the identified potential social, economic and biophysical impacts of the project (refer to Section 6).  The EMPr will provide the recommended management measures to mitigate the significance of identified impacts.
(4)(b) <i>Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.</i>	The EIA process that is being followed recognises that all elements of the environment are linked and interrelated. PASA, as the decision-making authority, will be responsible for taking all aspects of the environment, including whether or not the potential impacts of the project would unfairly discriminate against any person, into consideration when making a decision regarding the proposed project.
(4)(c) <i>Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.</i>	
(4)(d) <i>Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.</i>	The proposed exploration activities are not anticipated to limit access to environmental resources that meet basic human needs. The use of any land for exploration activities would have to be through an Access Agreement negotiated between the ER holder and the landowner/occupier.
(4)(e) <i>Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.</i>	Afro Energy is proposing to undertake a 3-year, early-phase exploration programme. The EMPr will contain measures for the management of exploration activities.
(4)(f) <i>The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.</i>	The public consultation process has been undertaken in accordance with the requirements of the EIA Regulations 2014. In addition to various public meetings held for the project, the Scoping and Environmental Impact Reports will also be distributed for public review and comment (see Box 3-1 and Section 3.3.4 and 3.4.3).

National Environmental Management Principles	Comment
(4)(g) <i>Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognizing all forms of knowledge, including traditional and ordinary knowledge.</i>	The EIA process will take into the account the interests, needs and values of all I&APs, through the submission of comments on the proposed project, during the Scoping and EIA phases of the project. Thus the decision-makers will have all the necessary information before them on which to base an informed decision.
(4)(h) <i>Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.</i>	The Scoping Report and EIR prepared for the proposed project will be made available to communities for review and comment (see Box 3-1 and Section 3.3.4 and 3.4.3). Where necessary, the Executive Summaries have been and will be translated into Afrikaans.
(4)(i) <i>The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.</i>	The EIA process will consider identified potential social, economic, biophysical impacts of the project in an integrated manner. The significance of these impacts will be assessed in the next phase of the EIA according to pre-defined rating scales (see Section 8.4).
(4)(j) <i>The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.</i>	During the undertaking of the exploration activities, Afro Energy (and its appointed contractors) would be required to comply with the requirements of the Mine Health and Safety Act. An Environmental Awareness Plan will also be prepared, which will require staff be informed about any aspects of their work that may pose a danger to the environment.
(4)(k) <i>Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.</i>	As mentioned previously, the public consultation process is being undertaken in accordance with the requirements of the EIA Regulations 2014 and will allow for the distribution of the Scoping Report and EIR for public review and comment. This information will be provided in an open and transparent manner.
(4)(l) <i>There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.</i>	The public consultation process for the proposed project provides an opportunity for the other spheres of government to provide comment on the proposed project and address any potential conflicts between policies or other developmental proposals administered by other organs of state that may be in conflict with the proposed exploration activities before decision-making.
(4)(m) <i>Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.</i>	
(4)(n) <i>Global and international responsibilities relating to the environment must be discharged in the national interest.</i>	PASA, as the decision-making authority, will be responsible for taking cognisance of international obligations that could have an influence on the project. As highlighted above, the proposed exploration activities would enable the determination of the extent the country's natural gas reserves. This will assist the country in making an informed decision of the role natural gas may play in South Africa's energy sector and commitment to reduce greenhouse gas emissions.



National Environmental Management Principles	Comment
(4)(o) <i>The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.</i>	The footprint of the proposed exploration activities is relatively small in relation to the extent of the ER area. The EIA process will consider and assess the identified potential social, economic, biophysical impacts of the project (refer to Section 6).
(4)(p) <i>The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.</i>	As the applicant, Afro Energy will be responsible for the implementation of the measures included in the EMPr.
(4)(q) <i>The vital role of women and youth in environment management and development must be recognised and their full participation therein must be promoted.</i>	The public participation process for the proposed project has been and will continue to be inclusive of woman and the youth.
(4)(r) <i>Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.</i>	Sensitive areas have been excluded from possible target areas for the proposed exploration activities.

#### 4.4 TECHNICAL INVESTIGATION UNDERTAKEN AS PART OF THE TCP

Afro Energy held a TCP (TCP 106) for the same area as the current ER application area. TCP 106 expired in July 2016.

The delineation of the TCP area was based, to a large extent, on an analysis of the Amersfoort Coalfield (see Figure 4-1) and Afro Energy's exploration success in its two adjacent ER areas (i.e. 12/3/56 ER and 12/3/38 ER). In addition, there were the added benefits of being located in close proximity to the Liliy Gas Pipeline (see Figure 4-2), which could ultimately facilitate the transfer of gas to the end user.

As part of the TCP, Afro Energy conducted a desktop analysis of historical coal exploration borehole data from the northern and eastern portions of the ER application area. Of the 152 boreholes drilled in the area, data for 68 of the deepest boreholes was used in the TCP evaluation (see Figure 4-3). An analysis of this existing data indicated that the geology in the ER application area is similar to the Amersfoort area, where Afro Energy has discovered viable, shallow gas deposits from unstimulated test boreholes.

A site visit to historical boreholes in the area confirmed that CBM was in fact being discharged into the atmosphere (see Figure 4-4).

A brief summary of the TCP analysis is provided below.

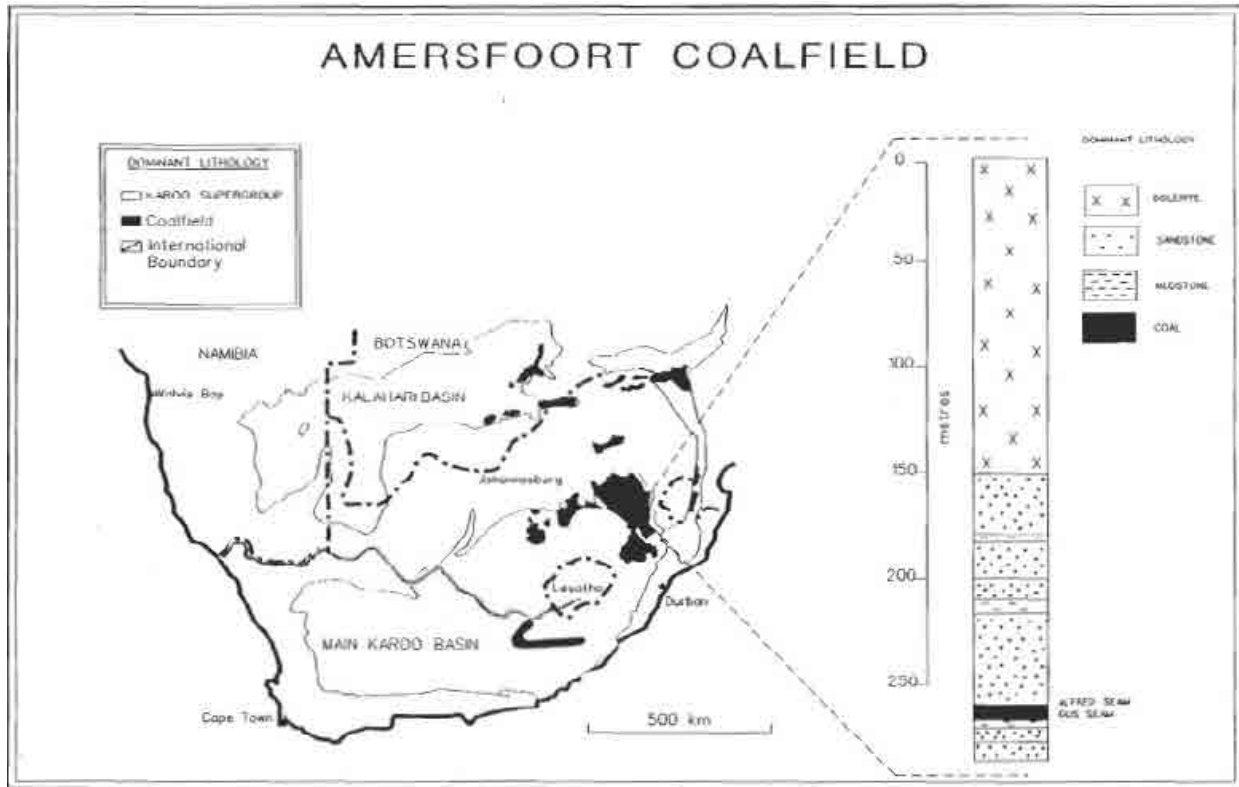


FIGURE 4-1: AMERSFOORT COAL FIELD

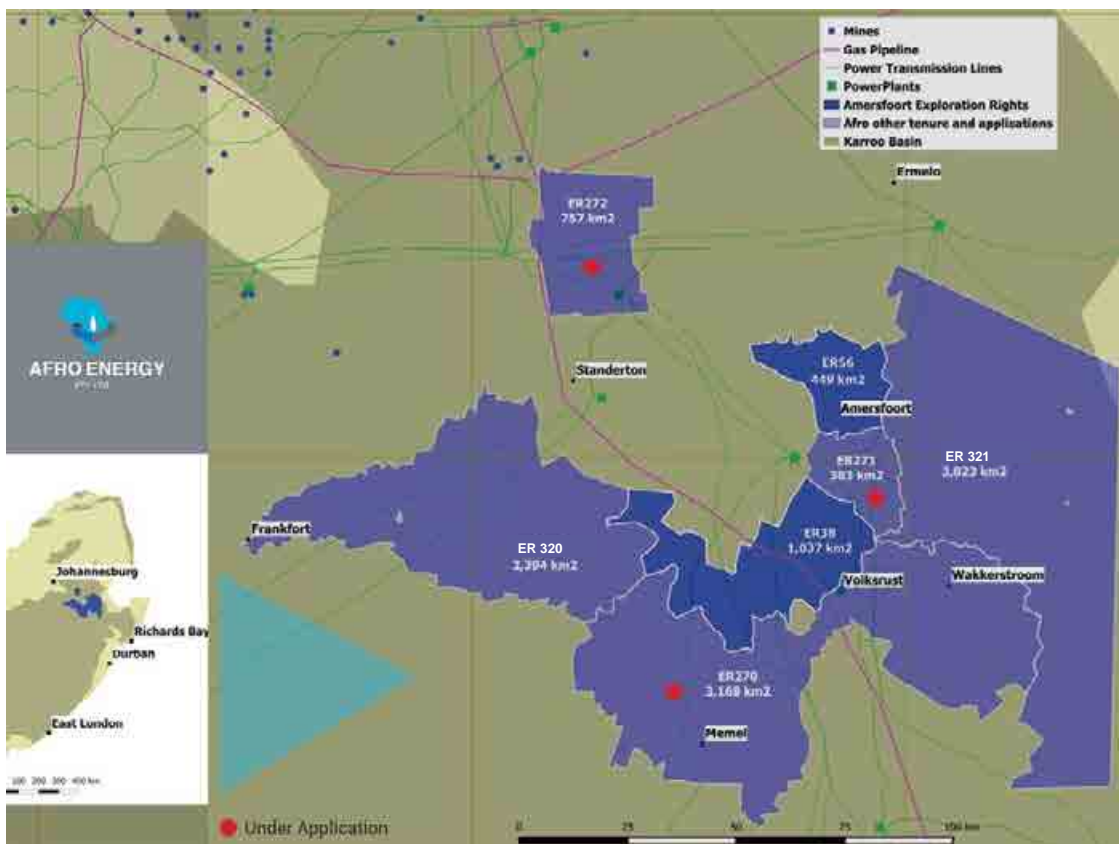
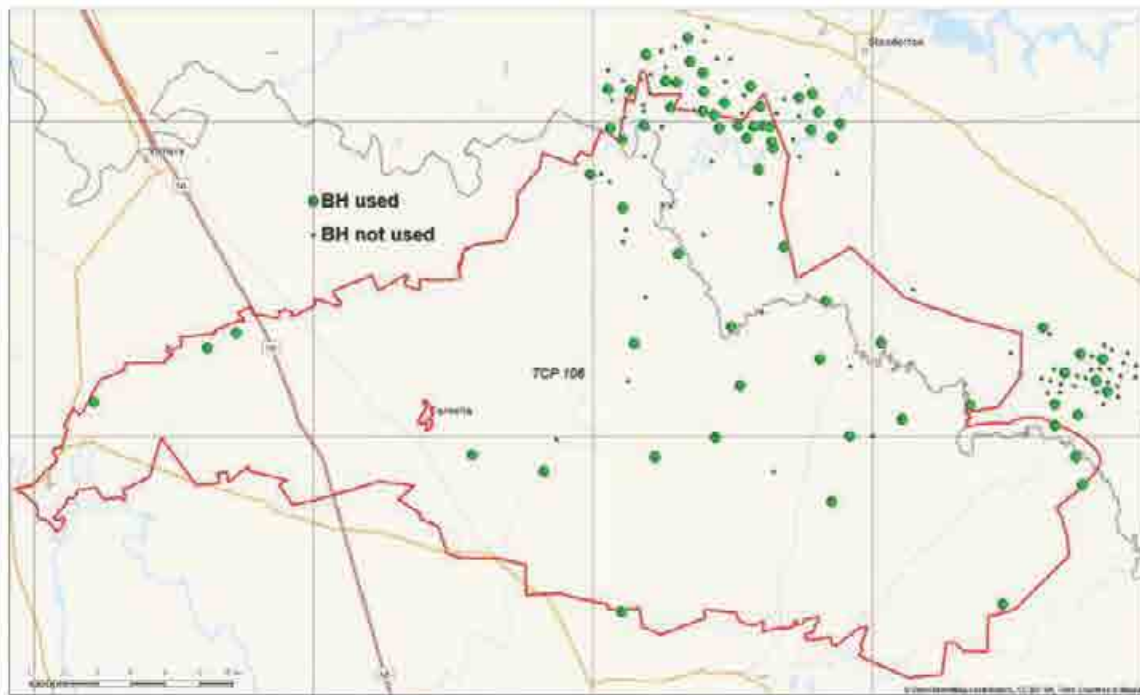


FIGURE 4-2: AFRO ENERGY'S EXISTING ER AND APPLICATION AREAS IN RELATION TO EXISTING GAS PIPELINES AND POWER LINES (AFTER AFRO ENERGY)



**FIGURE 4-3: HISTORICAL BOREHOLES IN AND AROUND THE ER APPLICATION AREA. THOSE USED IN THE TCP EVALUATION ARE INDICATED**



**FIGURE 4-4: HISTORICAL COAL BOREHOLE: (A) GAS BUBBLING OUT THROUGH WATER; AND (B) METHANE GAS BURNING WHEN IGNITED**

**4.4.1 DEPTH OF HISTORICAL BOREHOLES**

Typically, the coal exploration boreholes stop just below the coal zone, sometimes before intersecting the coal seam if it was deemed too deep to mine. Most of the historical boreholes stop short of the Dwyka Formation or the Karoo basement. The historical drilling thus provides a somewhat incomplete picture for gas exploration of CBM and sandstone reservoirs. Only five of the historic boreholes intersected the Karoo basement, which indicates that the Karoo strata are at maximum depths of greater than 300 m, which is sufficient for shallow gas exploration.

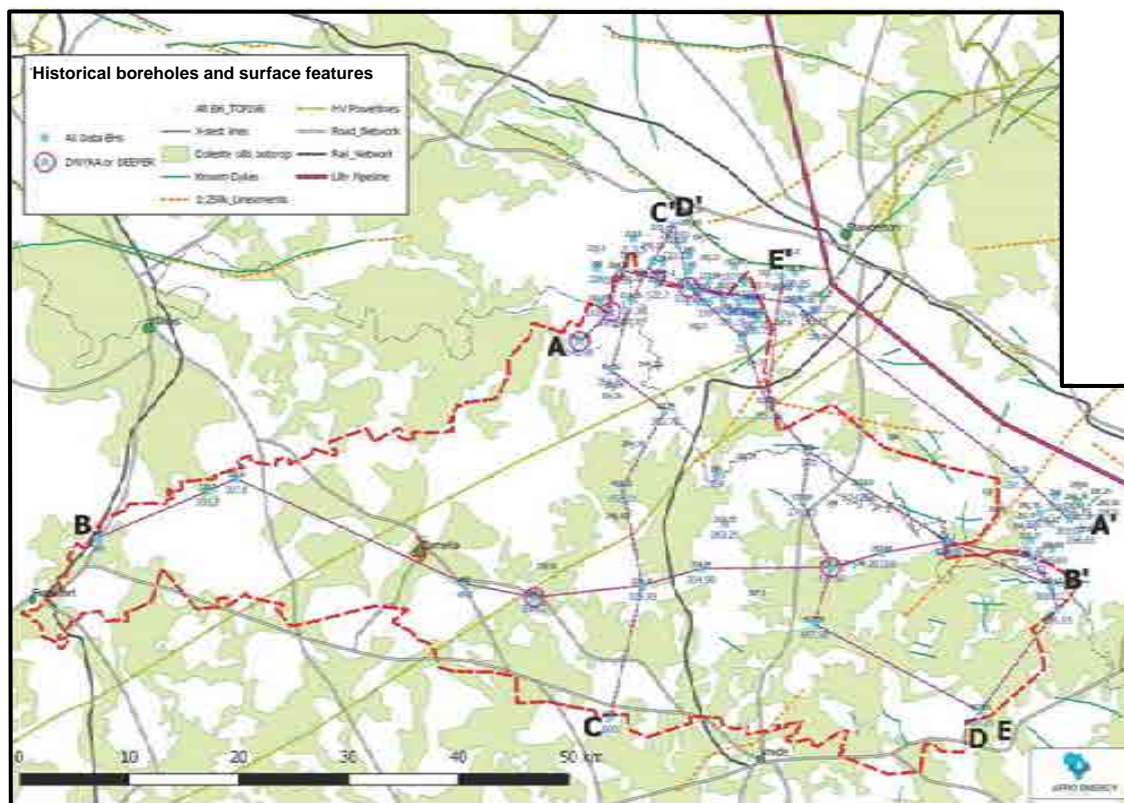
**4.4.2 SOURCE ROCK**

Most of the boreholes analysed intersected some amount of coal. The analysis of borehole logs also revealed the possibility of other carbonaceous mudstone, siltstones and sandstones being present. These indicate that the entire area is considered to have source rock. The dolerite intrusions would have assisted with generating gas beyond that of the coalification process.

**4.4.3 RESERVOIRS AND TRAPS**

The gas in the coal seam can be expected to be complimented by adjacent sandstone reservoirs. This is comparable to the Amersfoort area where Afro Energy has previously identified gas in the sandstones. The porosity and permeability of the sandstone is, however, unknown.

Afro Energy has proven that dolerite intrusions in the Highveld can also provide vertical traps (via dolerite sills) and lateral traps (via dolerite dykes). Regional mapping of the surface presence of dolerite sills is shown in Figure 4-5.



**FIGURE 4-5: LOCATION OF HISTORICAL BOREHOLES AND SURFACE FEATURES**

**4.4.4 CONCLUSIONS OF TECHNICAL INVESTIGATION**

Since much of the area within the ER application area has not been drilled and based on the combination of existing borehole depth, source rock, reservoirs and traps (discussed below), Afro Energy believes the resource warrants further exploration, as proposed in Section 4.5 below.



#### 4.4.5 EXPLORATION RIGHT APPLICATION AREA

The ER application area mirrors the area over which Afro Energy previously held a TCP. It is located roughly between the towns of Standerton in the north, Frankfort in the west and Vrede in the east, which falls within portions of both the Free State and Mpumalanga provinces. The ER application area includes 1 047 farms over an area of approximately 240 000 ha (see Figure 4-6). The ER boundary co-ordinates and a list of the properties included in the ER application area are provided in Appendix 1 and 2, respectively.

The ER application area excludes all properties where the granting of an ER is prohibited by Section 48 of the MPRDA. These include:

- as per Section 48 of NEMPRAA: special nature reserves, national parks, nature reserves, protected areas or protected environments (including world heritage sites, marine protected areas, specially protected forest areas, forest nature reserves and forest wilderness areas);
- land comprising a residential area;
- any public road, railway or cemetery;
- any land being used for public or government purposes or reserved in terms of any other law; or
- areas identified by the Minister by notice in the Gazette in terms of Section 49.

#### 4.5 PROPOSED EXPLORATION WORK PROGRAMME

The proposed three-year exploration work programme includes the following activities:

- Core borehole drilling: Originally Afro Energy proposed to drill up to five stratigraphic core boreholes within the ER area as part of the early exploration work programme based on the data collected as part of the TCP. However, following discussions with the directly affected landowners only four boreholes are now proposed. The gas content would be measured by desorption testing of cores, while wireline geophysical logging would evaluate any gas in sandstones; and
- Aeromagnetic survey: An aeromagnetic survey (approximately 50 km<sup>2</sup> in extent) would be undertaken within the ER area.

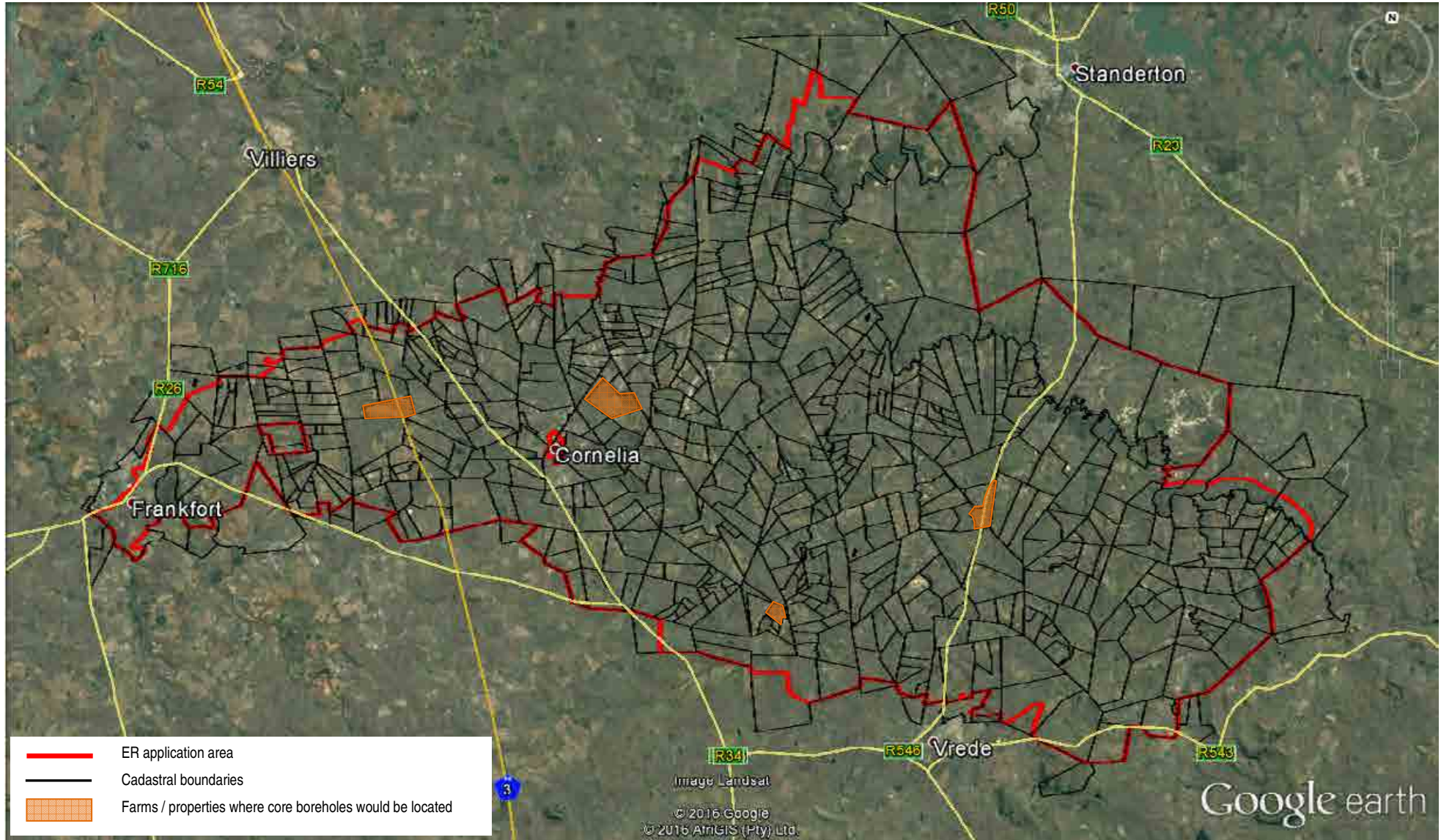
##### 4.5.1 CORE BOREHOLE DRILLING

###### 4.5.1.1 Number and siting of core boreholes

Afro Energy is proposing to drill up to four stratigraphic core boreholes as part of the early exploration work programme. The proposal is to drill at least three of the boreholes during the first year, with the fourth borehole being drilled during the second year. These boreholes have no purpose beyond exploration.

Four preferred site locations<sup>5</sup> have been identified for drilling based on the data collected as part of the TCP and discussions with directly affected landowners (see Figure 4-6 & Figure 4-7). These sites have been selected as they are deemed to have the best chance of encountering dolerite sills above 100 m and sandstone sequences below. Afro Energy is currently in the process of discussing possible locations on each farm with directly affected landowners. These site locations will be defined and site specific impact assessments undertaken during the course of the EIA process.

<sup>5</sup> As noted in Table 2-2, the Regulations on Petroleum Exploration and Production (GN R466, July 2015) prohibit “wells” within 1 km of a wetland. There is, however, some ambiguity as to the applicability of this setback distance to stratigraphic core boreholes (as “stratigraphic wells” are defined separately to “wells”) and is currently under review by PASA and the Department of Water and Sanitation. The interpretation of these Regulations will be investigated further with the relevant authorities during the next phase of the EIA. In addition, the proximity of the proposed core boreholes in relation to wetlands will be confirmed during the on-site specialist investigations and, if necessary, boreholes may need to be relocated to comply with this setback distance.



**FIGURE 4-6: EXPLORATION RIGHT APPLICATION AREA SHOWING FARM BOUNDARIES AND THOSE PROPERTIES DIRECTLY AFFECTED**





**FIGURE 4-7: LOCALITY OF PROPOSED DRILL SITES**

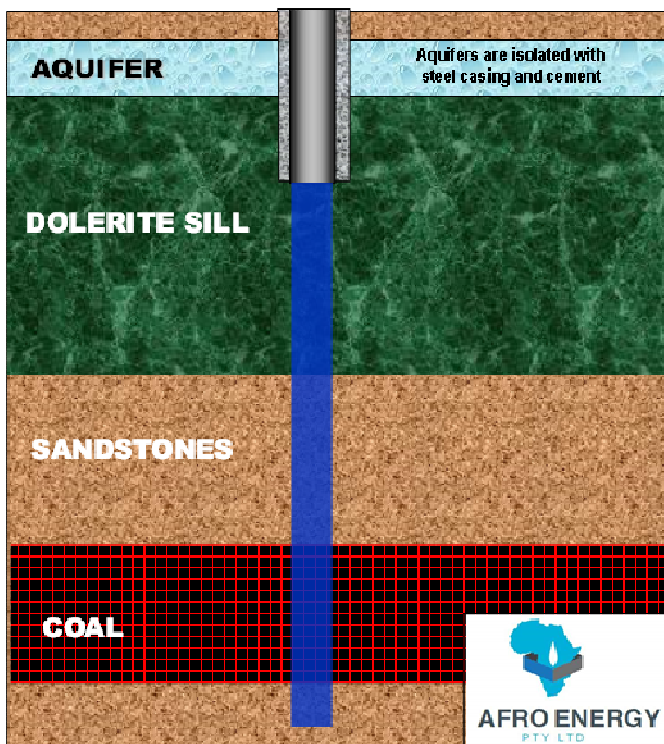
It should be noted that the final location of an exploration stratigraphic borehole is flexible and can be adjusted to minimise disturbance to landowner needs / activities and local environmental sensitivities. The final location, establishment and management of all exploration sites would be undertaken in consultation with landowners and informed by the EIA process.

**4.5.1.2 Drilling procedure**

Afro Energy proposes to use a rotary (diamond) core drilling method to drill the stratigraphic core boreholes to determine gas potential. This is the same technique that was used for the more than 150 historical coal exploration boreholes that have been drilled in this same area over the years. A diagrammatic representation of a core borehole is shown in the Figure 4-8. The core boreholes, and the equipment used to drill them, are of the same type and scale as that of most water boreholes.

Drilling requires the use of a truck or trailer mounted, mobile drilling rig at target sites (see Figure 4-9). The drill rig would be accompanied by supporting equipment (vehicles, trailers, compressors, water tanks, pumps, caravan, etc.) and would be manned by a staff of approximately five persons. A typical diamond core drill rig and equipment requires an operating area of approximately 1 000 m<sup>2</sup> (33 m by 33 m).

Core drilling uses a diamond bit (approximately 8.5 cm in diameter), which rotates at the end of drill rod (or pipe). The diamond bit is rotated slowly with gentle pressure while being lubricated with water to prevent overheating. The driller adjusts the rotation speed, pressure and water circulation for different rock types and drilling conditions so as to avoid problems, such as the bit getting stuck or overheating. Highly fractured rocks (often encountered near the surface), in addition to the increased risk of getting the bit stuck, allow the water to escape, leading to an increased risk of overheating. This problem is minimised by injecting biodegradable drilling fluid or mud (see Section 4.5.1.5) into the drill hole to “plug” the fractures and prevent escape of the fluids, as well as to lubricate the drill bit, remove drill cuttings and maintain ideal hole conditions.



**FIGURE 4-8: ILLUSTRATION OF EXPLORATION CORING**





**FIGURE 4-9: TYPICAL CORE BOREHOLE DRILLING RIG**

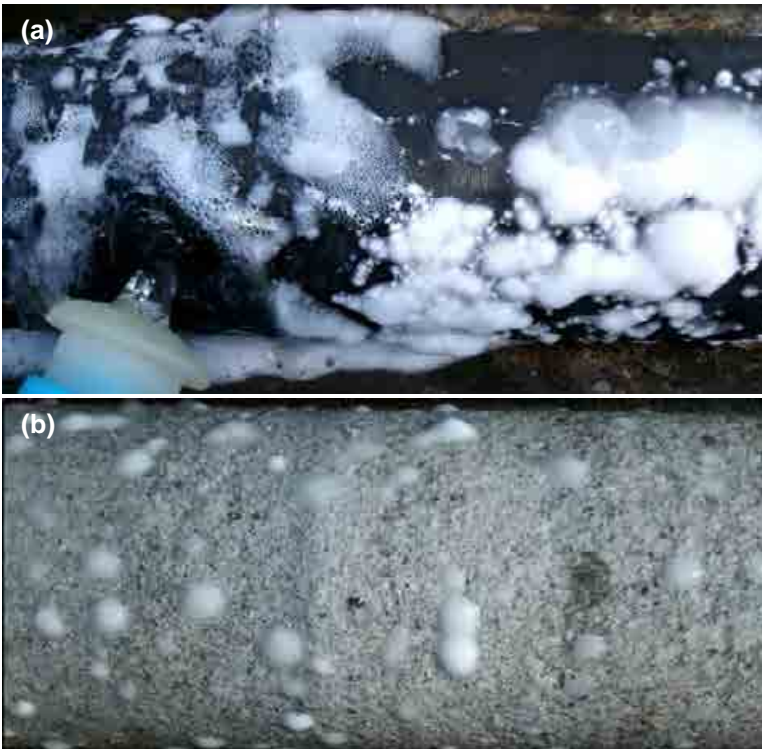
The opening at the end of the bit allows a solid column of rock to move up into the drill pipe and be recovered at the surface. Inside the drill pipe is a “core tube”, which has a latching mechanism attached to a cable. The cable is used to winch the core tube containing the new rock core to the surface where it is recovered. The drill core is stored in specially designed core boxes containing compartments to hold sections of the core (see Figure 4-10) before being taken to the laboratory for desorption testing, i.e. where samples are examined, described and tested for gas quantity and quality. Soapy water<sup>6</sup> is poured over the core to provide visual evidence of gas flow, which cannot be easily detected otherwise (see Figure 4-11). Wireline logging would also be performed by lowering a 'logging tool' into the boreholes in order to record the petrophysical properties and to identify the depth and thickness of the gas zone (see Figure 4-12). These readings are used to confirm the presence or absence of gas in the sandstone formations.

The drilling rig would drill into the underground coal seams, which are generally located at depths of greater than 100 m below the surface. It is possible that drilling may go as deep as 800 m. The drill depth is estimated by keeping count of the number of drill rods. In order to protect near surface aquifers, all exploration boreholes would be cased and cemented to depths below all potential aquifers (see Figure 4-8).

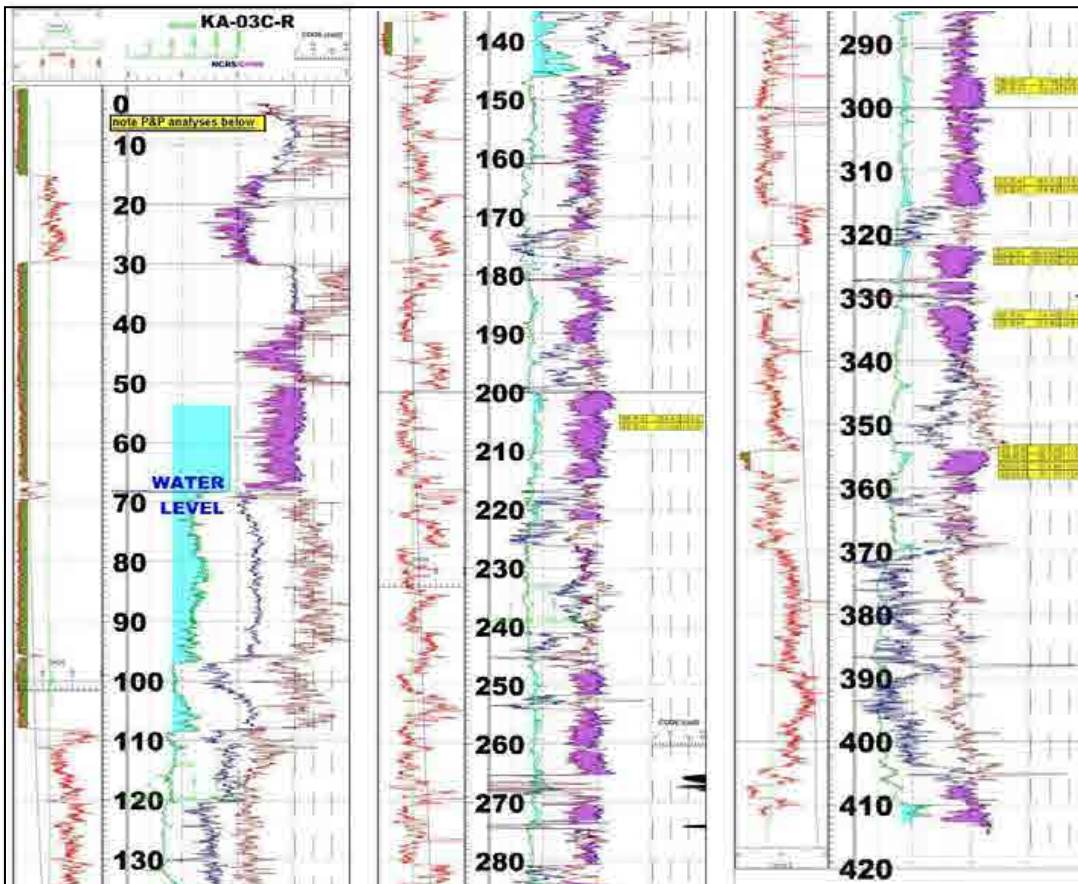


**FIGURE 4-10: CORE LAYDOWN AREA**

<sup>6</sup> Based on past core borehole drilling in the Amersfoort area, it is estimated that approximately 20 litres of water to 100 ml of dishwashing liquid (e.g. sunlight soap) would be used per core hole.



**FIGURE 4-11: SOAPY WATER BEING POURED ON COAL (A) AND SANDSTONE (B) CORES TO PROVIDE VISUAL EVIDENCE OF GAS FLOW**



**FIGURE 4-12: WIRELINE LOGGING DATA (NOTE: ANY GAS-BEARING ZONE STANDS OUT AS PINK)**

#### 4.5.1.3 Access and site demarcation

Private property would only be accessed with prior consent of the landowner and then in terms of a written access agreement. Drill sites would be accessed using existing roads and farm tracks, where available. Although no roads would be constructed, short tracks to specific sites would be required.

The boundaries of the drill site would be demarcated and all exploration activities would take place within the demarcated footprint.

#### 4.5.1.4 Hours of operation

The drilling operation would be undertaken during daylight hours, normally between 06h00 and 18h00 hours. It is anticipated that the core drilling at a site would be completed within three to four weeks.

#### 4.5.1.5 Drilling fluids

Drilling through rock requires the use of various drilling additives to lubricate the drill bit and maintain ideal hole conditions. The exact combination of the drilling fluids depends on the specific drilling conditions. The drilling additives used include a variety of products that are widely used in the South African and international prospecting and water borehole drilling industries. The additives are largely biodegradable and are not rated as hazardous (non-toxic). Based on previous drilling undertaken in the Amersfoort area, the drilling fluid may be comprised of the following:

- Bentonite;
- Bordet;
- CAP21;
- Copper compound;
- Ecolube-8;
- Eezimix;
- Ezycore;
- Lubtac;
- Rotafoam concentrate; and
- Wondercut.

Material Safety Data Sheets (MSDS) for potential drilling fluids will be provided in the EIR.

#### 4.5.1.6 Water use

Water required for the operation of the drilling rig would be obtained locally (e.g. dam, river, stream or borehole), by agreement with landowners and in terms of the relevant regulatory requirements.

It is estimated, based on previously drilling in the Amersfoort area, that approximately 5 000 litres of water per day would be required per core borehole, if drilling conditions are reasonably good and the formation is solid. Thus, the total water use per hole over a four week period is estimated to be in the order of 140 000 litres. For comparative purposes a typical middle income household would use in the order of 20 000 to 30 000 litres over the same period (Bailey and Buckley, 2004). This is, however, considered to be an over estimation as the water would be recycled.

Although some water would remain down the hole, the balance would be recycled through a series of aboveground skips where the drill muds and cuttings would settle out (see Figure 4-13).



**FIGURE 4-13: ABOVEGROUND SKIPS FOR REUSE OF DRILLING FLUID**

#### **4.5.1.7 Waste management**

All drill cuttings (from skips), general waste and hazardous waste generated at the drilling site would be separated and stored in containers, before being removed from site and disposed at an appropriately licensed landfill or waste facility. All cores (not considered to be waste) will be kept for storage.

Chemical toilets would be provided for the drilling crew. The toilets would be supplied and managed by a specialist contractor and the sewage disposed of at the nearest sewage treatment plant, or as required by the local authority.

Appropriate mitigation and management measures will be included in the EMP<sub>r</sub> (that will be prepared during the next phase of the EIA).

#### **4.5.1.8 Drilling completion and rehabilitation**

Once drilling is completed, the rig, all associated equipment and waste products, would be removed from site. The core hole would be capped pending further investigation or sealed / plugged with cement if not required further. In the case of sealing the borehole a down hole cement plug would be placed below all potential aquifers and the balance of the hole plugged with bentonite fluid. The steel casing would be cut below ground level (see Figure 4-14).

Rehabilitation would be undertaken, in consultation with the landowner, to re-establish the pre-exploration land use.





**FIGURE 4-14: COMPLETED EXPLORATION BOREHOLE (STAND PIPE STILL TO BE CUT BELOW GROUND LEVEL)**

#### 4.5.2 AEROMAGNETIC SURVEY

An aeromagnetic survey is a common type of geophysical survey carried out to aid in the production of geological maps that are commonly used during mineral and petroleum exploration. The principle is similar to a magnetic survey carried out with a hand-held magnetometer, but allows much larger areas to be surveyed more efficiently for regional reconnaissance.

Surveys involve grid-based flights using a light fixed wing aircraft (see Figure 4-15), which is fitted with a magnetometer. The aircraft flies at slow speeds (~ 130 knots) and at an altitude of between 40 and 60 m above ground. As the aircraft flies, the magnetometer measures and records the total intensity of the magnetic field. The resulting aeromagnetic map shows the spatial distribution and relative abundance of magnetic minerals (most commonly the iron oxide mineral magnetite) in the upper levels of the Earth's crust. Since different rock types differ in their content of magnetic minerals, the magnetic map allows a visualisation of the geological structure of the upper crust in the subsurface, particularly the spatial geometry of bodies of rock and the presence of faults and folds.

Based on the drilling results, it is envisaged that up to a maximum of 50 km<sup>2</sup> would be surveyed with a spacing of between 500 m and 750 m between lines. In good weather the survey would take approximately 8 days to complete. As this survey would be undertaken by aircraft, there would be no footprint on the ground.



**FIGURE 4-15: TYPICAL SURVEY PLANE**

### 4.5.3 FINANCIAL PROVISION

In terms of Section 24P of NEMA and associated regulations pertaining to the financial provision (GN R1147), an applicant for Environmental Authorisation relating to exploration must, before the Minister of Mineral Resources issues the Environmental Authorisation, comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts.

Afro Energy would put in place the required financial provision for the proposed exploration activities. Afro Energy will discuss the nature and quantum of the financial provision with PASA during the next phase of the EIA. The proposed nature and quantum of the financial provision will be presented in the EIR.

## 4.6 POSSIBLE FUTURE EXPLORATION

The period for which the ER is required is three years and the current application is only to authorise the initial work programme as described above.

During the initial exploration period Afro Energy would decide whether to exercise its exclusive rights to apply for a renewal of the ER based on the results of the early exploration work programme. Any further exploration work to evaluate an identified resource would require further approval in terms of the MPRDA and NEMA. Such approvals would be subject to the relevant legal requirements which include further public consultation and environmental assessment.

## 4.7 DETAILS OF ALL ALTERNATIVES CONSIDERED IN THE EIA PROCESS

### 4.7.1 PROPERTY OR LOCALITY ALTERNATIVES

#### 4.7.1.1 Exploration Right Application Area

The purpose of exploration is to acquire and evaluate relevant data to determine if CBM gas resources exist that warrants further exploration. The process is iterative with data gained in early phases being used to improve the level of knowledge and refine the anticipated (or known) extent of the resource (refer to Section 4.2.3 for an overview of the exploration process).

The exploration process begins with the development of a regional perspective of the geology to determine where conditions that are conducive to hydrocarbon formation may exist. Given the low level of accuracy of the publicly available petroleum resource data, it is necessary to apply for an ER over a large area such that with ongoing data collation and refinement a resource is identified within the boundaries of ER application area. The expected dispersed nature of petroleum resources is such that a reasonably large area is required initially in order to identify a resource that may be economically viable. The result is that an ER application is typically made over large areas.

It is not possible for more than one ER to be held over land for the same mineral / petroleum product and thus an application area must be distinct from other ERs (and applications). The extent of Afro Energy's ER application area is based on their TCP area and, as such, does not overlap with other similar exploration areas.

As mentioned previously in Section 4.4.5, an ER may not be held over land comprising residential areas, any public road, railway or cemetery, any land being used for public or government purposes or reserved in terms of any other law or areas identified in terms of Section 49 of the MPRDA. Section 48 of the NEMPRAA further restricts exploration from all protected areas.

ER applications are only made over areas, subject to the restraints indicated above, the applicant believes are likely to be prospective for the subject resource. No alternative ER application areas have been or will be considered in the EIA process.

#### **4.7.1.2 Number of boreholes and location of drill sites**

Afro Energy's approach to site selection was to avoid sensitive natural vegetation or habitats, watercourses and steep slopes, as far as possible, based on a desktop analysis, and locate drill sites within areas that had previously been disturbed.

As mentioned above Afro Energy originally identified five preferred site locations for drilling based on the data collected as part of the TCP. However, following discussions with directly affected landowners only four boreholes (namely sites 106-2 to 106-5) are now proposed (see Figure 4-7). Site 106-1 is no longer being proposed for drilling. Afro Energy is currently in the process of discussing possible locations on each farm with remaining directly affected landowners. These site locations will be defined and site specific impact assessments undertaken during the course of the EIA process.

The nature of the proposed exploration activities is such that the target sites are not bound to fixed locations but are somewhat adjustable. Thus the final location of an exploration stratigraphic borehole is flexible and can be adjusted to minimise disturbance to landowner needs / activities and local environmental sensitivities. The final location, establishment and management of all exploration sites would be undertaken in consultation with landowners and informed by the EIA process.

### **4.7.2 TECHNOLOGY ALTERNATIVES**

#### **4.7.2.1 Core borehole drilling**

Afro Energy is proposing to use rotary (diamond) core drilling to drill the stratigraphic core boreholes (see Section 4.5.1). The alternative is to use Percussion / Reverse Circulation (RC) drilling. The main limitation of the Percussion / RC drilling method for the proposed exploration is the fact that the cuttings are delivered to surface as finely crushed material. The rotary core drilling method delivers a cylindrical core of rock, which allows for better interpretation of stratigraphy and *in situ* parameters. Thus, diamond core drilling is considered the best suited for exploration core drilling and will be assessed as part of the EIA process.

Drilling through rock requires the use of various drilling additives to lubricate the drill bit and maintain ideal hole conditions. The exact combination of the drilling fluids depends on the specific drilling conditions, as well as the contractor employed. The EIA will thus consider the use of drilling fluids that are widely used in the South African and international prospecting and water borehole drilling industries.

#### **4.7.2.2 Aerial surveying**

A variety of aerial surveying techniques exist for petroleum exploration (including aeromagnetic and gravity radiometry surveys). Since these techniques all require the use of low altitude grid-based flights using a light

fixed wing aircraft, potential impacts would be of similar significance. For this project, Afro Energy is proposing to undertake an aeromagnetic survey, which will be assessed in the EIA.

#### 4.7.2.3 Possible future exploration activities

The current early-phase exploration work programme, for which Environmental Authorisation is being sought, does not include activities other than those proposed to identify whether a petroleum resource exists that could be investigated further.

Any further exploration work to evaluate an identified resource would require further approval in terms of the MPRDA and NEMA. Such approvals would be subject to the relevant legal requirements which include further public consultation and environmental assessment.

### 4.7.3 DESIGN OR LAYOUT ALTERNATIVES

#### 4.7.3.1 Core borehole drilling

Design or layout alternatives considered for the core drilling have included:

- Type of drilling fluid: The proposal is to use a non-hazardous biodegradable drilling fluid, as is common practice in the core drilling industry, as opposed to non-aqueous drilling fluids (oil-based); and
- Recycling of water and drilling fluid: Afro Energy proposes to recycle of water and drilling fluid in aboveground skips. The alternative to skips is to use lined sump ponds, but this would result in additional aboveground disturbance due to the excavation of sump ponds.

#### 4.7.3.2 Aeromagnetic survey

Since the specific layout details for the proposed aeromagnetic survey would be based on the results of the core drilling, it is not possible to define that exact survey area at this stage. The survey grid, flight parameters and timing can be adapted to some degree depending on target areas, land use, weather and other restrictions.

Since the specific layout details of the aeromagnetic survey are not known, the EIA will assume that the 50 km<sup>2</sup> survey could take place anywhere within the ER application area.

### 4.7.4 THE “NO-GO” ALTERNATIVE

The “No-Go” alternative is the non-occurrence of the proposed exploration activities. Thus there would be no acquisition of data (via borehole drilling and aeromagnetic surveying) for the ER application area as proposed. In this case, the residual impacts (i.e. impacts after implementation of mitigation measures) of the proposed activities would not occur.

The implications of not undertaking the proposed early-phase exploration is that no additional information would be derived on the potential for a gas resource in the region. In the absence of exploration a potential petroleum resource cannot thus be identified, understood or assessed.

Without this knowledge no gas field development would be able to occur. In the absence of gas production there would obviously not be any of the potential risks related to detailed exploration nor future production. Similarly the potential benefits of gas production would not be derived.



## 5 DESCRIPTION OF THE AFFECTED ENVIRONMENT

This chapter provides a generic description of existing biophysical and social environment that could potentially be affected by the proposed exploration activities. More detailed site specific information will be provided in the EIR.

### 5.1 BIOPHYSICAL ENVIRONMENT

#### 5.1.1 CLIMATE

##### 5.1.1.1 Temperature

The climate of the ER application area is generally associated with warm to hot summers and cool to cold winters. Average daily maximum temperatures are 25°C and minimum daily temperatures are 7°C. Winter temperatures are known to drop below zero and maximum summer temperatures can often reach over 31°C (Middleton & Bailey, 2009).

##### 5.1.1.2 Rainfall

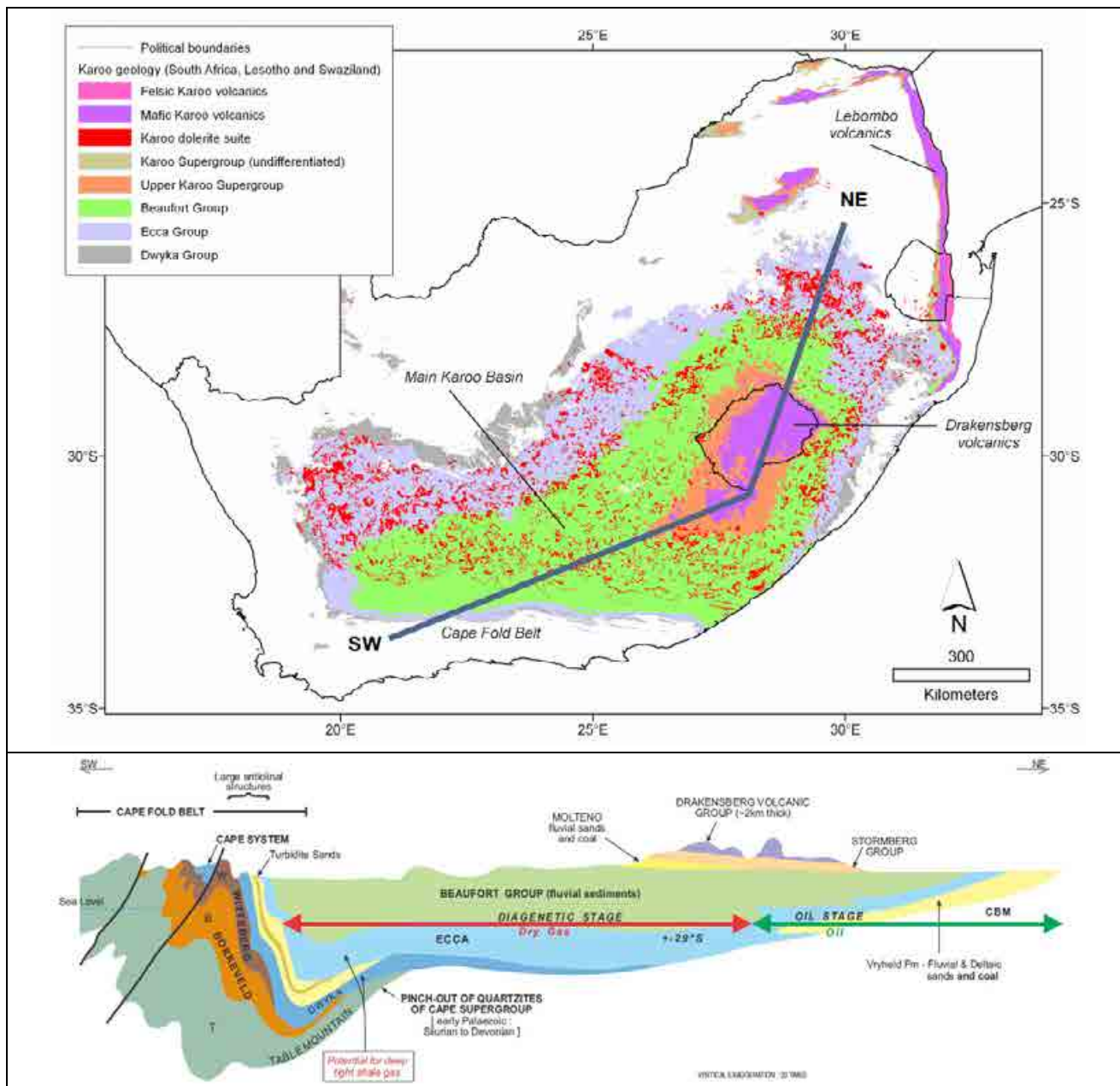
The broader area is characterised by summer rainfall usually in the form of thunderstorms. Mean annual precipitation varies between 544 mm to 668 mm. Sunshine duration in summer is about 60%. Mean annual evaporation varies between 1 507 mm to 1 619 mm within the ER application area. Higher evaporation rates can be expected towards the southern sections of the ER application area (Middleton & Bailey, 2009).

#### 5.1.2 GEOLOGY

##### 5.1.2.1 Regional Setting

The ER application area lies in the north-east of the Karoo Basin (see Figure 5-1). The main Karoo Basin in South Africa formed as a result of compression predominantly associated with flexural subsidence, characteristic of foreland basins, during the assembly of the Gondwana super-continent. Consensus on the tectonic setting of the basin, however, remains debated (Tankard *et al.*, 2012). The Karoo Basin represents a diverse and complex suite of rock units with an aerial extent of roughly 600 000 km<sup>2</sup> that attains a maximum sedimentary thickness of 12 km. The north-east of the basin is host to several distinct facies of rocks that vary between shore face, fluvial and lacustrine sediments, deposited between the Permian and Triassic.

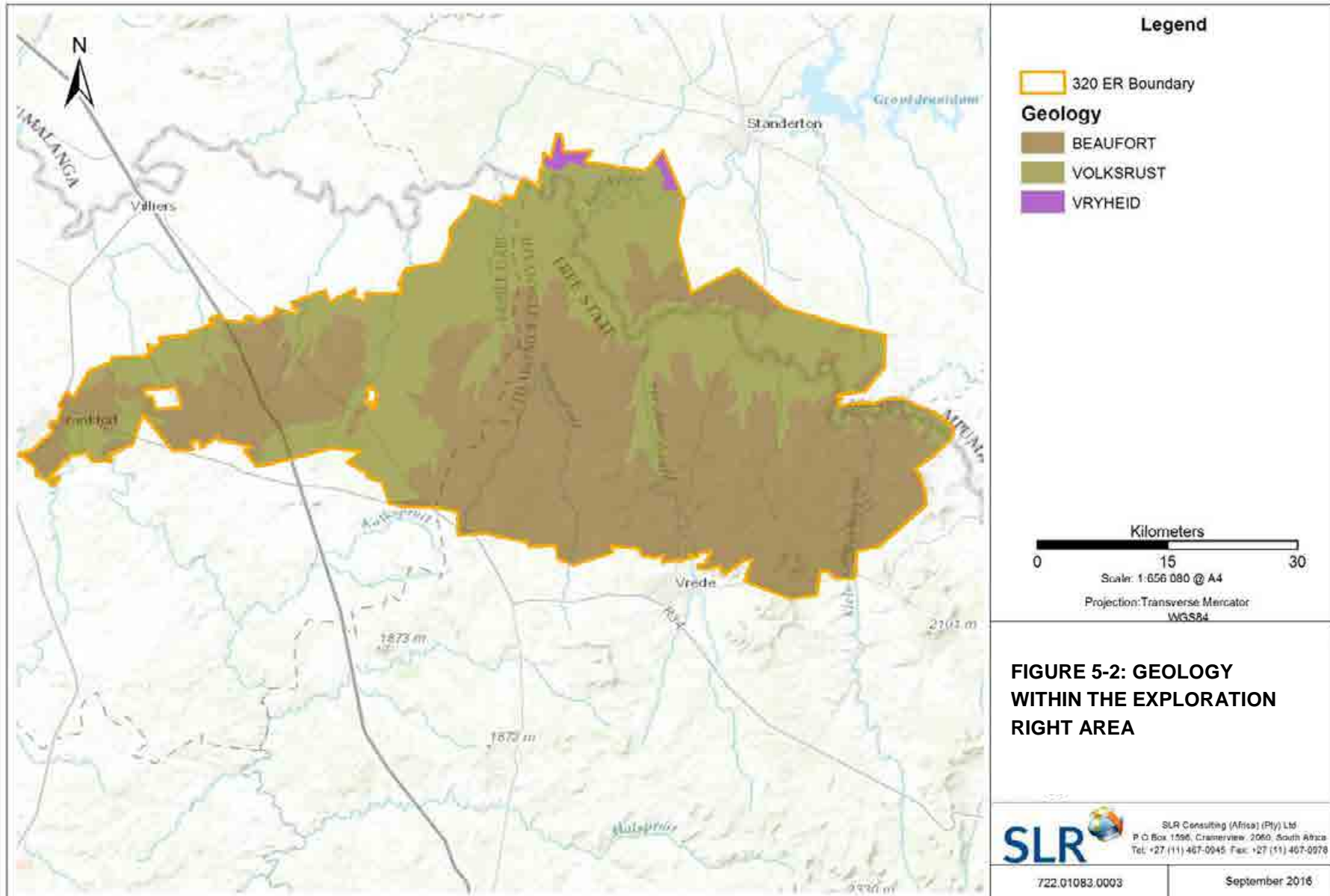
The deposition of Karoo Supergroup sediments ended in the early Jurassic during the emplacement of the igneous rocks that constitute the Drakensberg Group. The preserved basalts and dolerites attain a maximum thickness of approximately 1 400 m in the Lesotho area. The northern flank of the basin is defined by the erosional limits of the late Carboniferous-Permian Dwyka and Ecca Groups, where they unconformably overlay Archean-Cambrian age, Kaapvaal and Namaqua-Natal basement. The Ecca Supergroup consists mainly of sandstone and shale from the Permian period. The Dwyka Formation within the ER application area consists mainly of tillite from the Carboniferous period.



**FIGURE 5-1: SIMPLIFIED GEOLOGY OF THE KAROO BASINS**  
(source PASA brochure)

**5.1.2.2 Geology of ER application area**

The geology of the proposed ER application area comprises Permian aged (~299-252 million years ago (Ma)) Ecca Group outcrops in the northern and central regions. In the ER application area, the Ecca Group is represented by black silty shale with thin mudstone or sandstone of the Volksrust Formation and sandstone of the Vryheid Formation (see Figure 5-2). In the central and southern regions, the Early Triassic (~252-247 Ma) sandstone and mudstone of the Tarkastad Subgroup (Beaufort Group) can be found overlying the formations of the Ecca Group. Jurassic (~201-145 Ma) Karoo dolerite dykes, including sheet and sill outcrops, can be found throughout the ER application area. Regional mapping of the surface presence of dolerite sills is shown in Figure 4-5.



### 5.1.2.3 Resource assessment

Resource assessments of the Karoo Basin have historically emphasised the world-class coal reserves that have dominated the energy history of South Africa. Some limited onshore exploration for hydrocarbon occurrences was undertaken in the 1960s, but no commercial hydrocarbon occurrences were discovered. However, it is expected that the north-east Karoo Basin has potential for a tremendous diversity of hydrocarbon resources including shale oil and shale gas, CBM, helium and biogenic gas.

One of the complications recognised during the initial resource exploration effort undertaken in the 1960s was the widespread occurrence of dolerite dykes, especially in the north-east Karoo Basin. The thermal effects of these dykes led some early researchers to state that the dykes were required for distillation of hydrocarbons from adjacent coal and shale beds. The complexity of these dyke intrusions, well documented in the shallow north-east Karoo coal fields, makes it difficult to understand the geometry of any possible reservoir horizons in the adjacent sediments. As a result, there is poor understanding of the relationship between the observed non-commercial oil and gas occurrences and any structural control. Further compounding the perception of an absence of commercial hydrocarbons in the Karoo Basin was the documentation of low-permeability conditions in most drill holes. This led many researchers to conclude that the rocks possessed too low a permeability to produce hydrocarbons and porosities too low to trap them.

#### 5.1.2.3.1 Shale gas potential

The development of shale gas fields, which commenced in the United States in the early 21<sup>st</sup> Century, has demonstrated the ability to produce voluminous economic quantities of hydrocarbons from extremely low permeability rocks. This was made possible by the use of horizontal drilling and hydraulic fracturing to maximise wellbore connectivity with low-permeability hydrocarbon-bearing strata.

As a result, shale gas in South Africa is being reassessed as a potential hydrocarbon resource. Most exploration focus has emphasized the potential gas resource of the deep Karoo Basin in the southern and western sub-basins where the rocks are most thermally mature. Based on limited preliminary data, Advanced Resources International (ARI), on the behalf of the US Energy Information Administration, assessed the shale gas potential of the Lower Ecca Group shales in the southern Karoo Basin to contain 1 834 trillion cubic feet (Tcf) of gas-in-place with recoverable shale gas resources of 485 Tcf (Dittrick, 2013). In 2013, ARI completed a reassessment to show that the lower Permian Ecca Group contains 1 559 Tcf of shale-gas-in-place with 370 Tcf as the technically recoverable shale gas resource (US Energy Information Administration, 2015). In this part of the Karoo Basin, the sediments reach nearly 12 km in thickness (Raseroka and McLachlan, 2008). PASA estimates recoverable shale gas reserves of about 40 Tcf<sup>7</sup>.

#### 5.1.2.3.2 Oil potential

The oil resource potential of the Karoo Basin has largely been ignored because of the historical absence of commercial oil discoveries, and the restricted occurrence of oil accumulations to the north-east Karoo Basin where the rocks are less thermally mature. Further evaluation still needs to be undertaken in the frontier basins.

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<sup>7</sup> According to a 2014 interview by PASA Resource Development Manager, David van der Spuy. ("SA petroleum Agency's Karoo shale-gas estimate 'far lower'", Business Day BDLive Paul Vecchiattor 2-12-14, <http://www.bdlive.co.za/business/energy/2014/02/21/sa-petroleum-agencys-karoo-shale-gas-estimate-far-lower>).

5.1.2.3.3 *Coalbed methane potential*

The north-east Karoo Basin also has considerable potential as a CBM resource play due to well-documented gassy coals at relatively shallow drilling depths. Estimates of the CBM resource in the north-east Karoo ranges from 1 Tcf for the Waterberg Coalfield (Anglo Thermal Coal for Waterberg Coalfield) to over 196 Tcf for the NE Karoo region (PASA Unconventional Resources Onshore Report).

5.1.2.3.4 *Helium potential*

In addition to the oil and CBM potential of the north-east Karoo Basin, there are also documented reserves of helium in Precambrian-hosted gold mines in some regions. The methane component of these reserves is estimated at over 11.5 billion cubic feet (Bcf) (Molopo Energy Company website; PASA Unconventional Resources Onshore Report). Helium is an extremely valuable strategic resource found in limited areas of the world. A rare gas on earth, the bulk of the current helium production (75%) is from the United States. The most important use of helium currently is for cryogenic cooling (32%), although helium has numerous other industrial uses which include welding, controlled atmosphere (medical and other laboratory testing), leak testing, as a purge gas, breathing mixtures for deep sea diving, and also as a lifting gas.

5.1.3 SEISMICITY

The Southern African region is considered to be relatively stable from a seismic perspective. South Africa is located on the African tectonic plate, which includes the African continent and parts of the floor of the Atlantic and Indian Oceans. In general earth tremors and quakes are infrequent and generally of low magnitude. The largest ever recorded earthquake to occur in South Africa was the Ceres-Tulbagh Earthquake, which occurred in September 1969, and had a magnitude of 6.3 on the Richter Scale.

There are areas in South Africa with higher peak ground acceleration, which indicates a greater likelihood of earthquakes. These are found in the Western Cape region and in parts of the northern and western Free State, as well as the Witwatersrand.

5.1.4 SOILS

The soils of a particular area influences the vegetation, agricultural potential and ultimately land use. The soils of the Free State and Mpumalanga have a wide range of properties. Variations in texture from light sandy soils to heavy swelling clays; leached soils that are high in organic matter to virtually unweathered soils. The primary diver of this diversity is the variability in the underlying geology, climate and topography.

Four main soil types occur within the ER application area (see Figure 5-3), with the area dominated by well-structured soils with a high clay content. The soil types in the ER application area are described further in Table 5-1.

TABLE 5-1: SOIL TYPES IN THE ER APPLICATION AREA

Soil code	Description
<b>Well-structured soils generally with a high clay content</b>	
PH	Soils with dark coloured, well-structured topsoil with high base status (melanic soils). In addition, one or more of vertic and red structured soils may be present.
VR	Dark coloured, strongly structured soils dominated by cracking and swelling clays (vertic soils). In addition, one or more of melanic and red structured soils may be present.

Soil code	Description
<b>Soils with limited pedological development</b>	
LP1	Soils with minimal development, usually shallow on hard or weathering rock, with or without intermittent diverse soils. Lime rare or absent in the landscape
<b>Soils with a strong texture contrast</b>	
LV2	Soils with a marked clay accumulation, strongly structured and a non-reddish colour. In addition one or more of vertic, melanic and plinthic soils may be present

### 5.1.5 VEGETATION

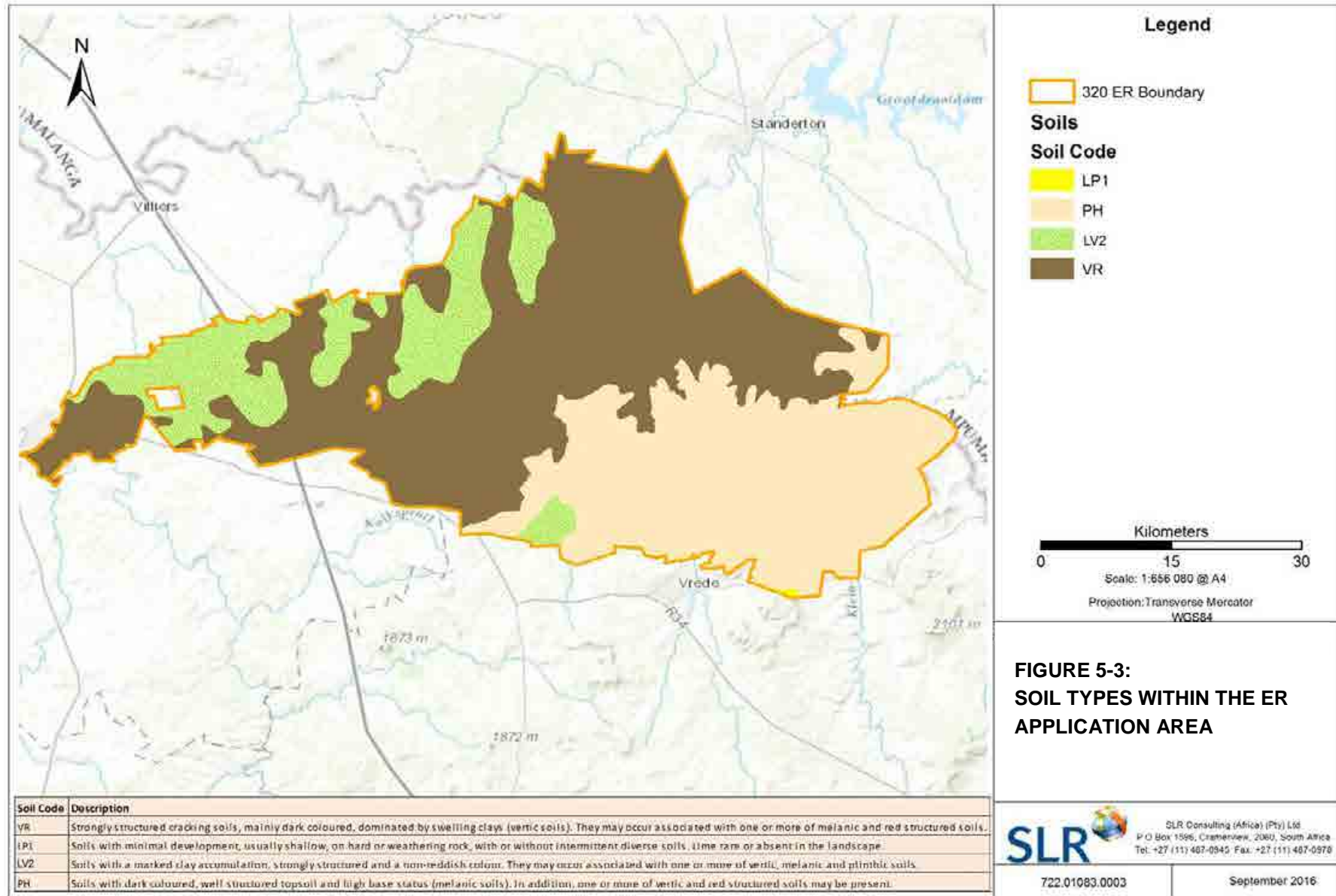
The ER application project area is located within the Grassland Biome, which is the largest of South Africa's biomes, and is considered to have an extremely high biodiversity, second only to the Fynbos Biome. This biome is the most threatened due to its suitability for human habitation, and many of the land-uses upon which food-production and other vital economic activities depend.

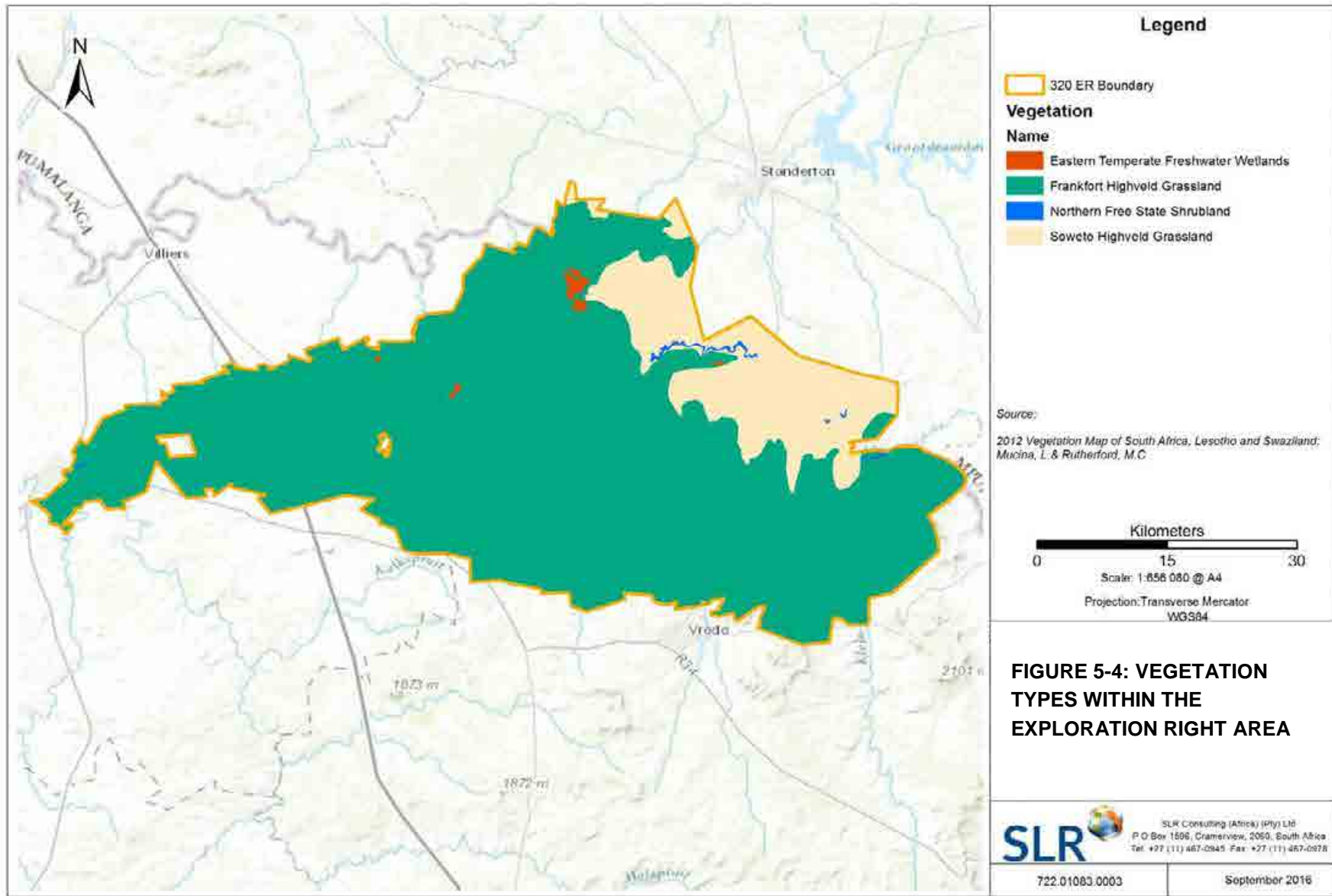
The Grassland Biome includes 72 nationally recognised grassland vegetation types, differentiated from each other by shifts in species composition that result from the interplay of environmental variables such as climate (temperature, frost and precipitation), topography and geology. These environmental patterns influence other processes that shape these ecosystems, such as grazing and fire. The particular combination of abiotic factors determines the species richness and life history traits of the vegetation, and defines the ecological characteristics of the landscape.

Four vegetation types are found within the ER application area (see Figure 5-4), including (Mucina & Rutherford, 2006):

- Frankfort Highveld Grassland (Vulnerable): This vegetation type dominates the ER application area. It forms part of the Mesic Highveld Grassland Bioregion and generally occurs on flat to slightly undulating and undulating terrain, with grassland dominated by *Eragrostis curvula* and *Themeda triandra*, accompanied by *E. capensis*, *E. plana*, *E. racemose*, *Cymbopogon pospischilli*, *Elionurus muticus* and *Aristida junciformis*.
- Soweto Highveld Grassland (Endangered): This is the second most dominant vegetation type in the ER application area. It also forms part of the Mesic Highveld Grassland Bioregion and occurs on gently to moderately undulating landscape on the Highveld plateau supporting short to medium-high, dense, tufted grassland dominated almost entirely by *Themeda triandra* and accompanied by a variety of other grasses such as *Elionurus muticus*, *Eragrostis racemose*, *Heteropogon contortus* and *Tristachya leucothrix*. In places not disturbed, only scattered small wetlands, narrow stream alluvia, pans and occasional ridges or rocky outcrops interrupt this continuous grassland cover.
- Northern Free State Shrubland (Least Threatened): This vegetation type, also part of the Mesic Highveld Grassland Bioregion, is mainly restricted to south-facing slopes of koppies, butts and tafelbergs, as well as steep slopes of deeply incised rivers, where sandstone outcrops occur. Typically a two-layered, closed canopy shrubland dominated by tall shrubs such as *Rhamnus prinoides*, *Leucosidea sericea*, *Buddleja salviifolia*, *Rhus dentate*, *Euclea crispa* subsp. *crispa*, *Diospyros lycoides* and *Kiggelaria africana*.
- Eastern Temperate Freshwater Wetland (Least Threatened): This vegetation type occurs on flat landscape or shallow depressions filled with (temporary) water bodies supporting zoned systems of aquatic and hygrophilous vegetation of temporary flooded grasslands and ephemeral herblands.







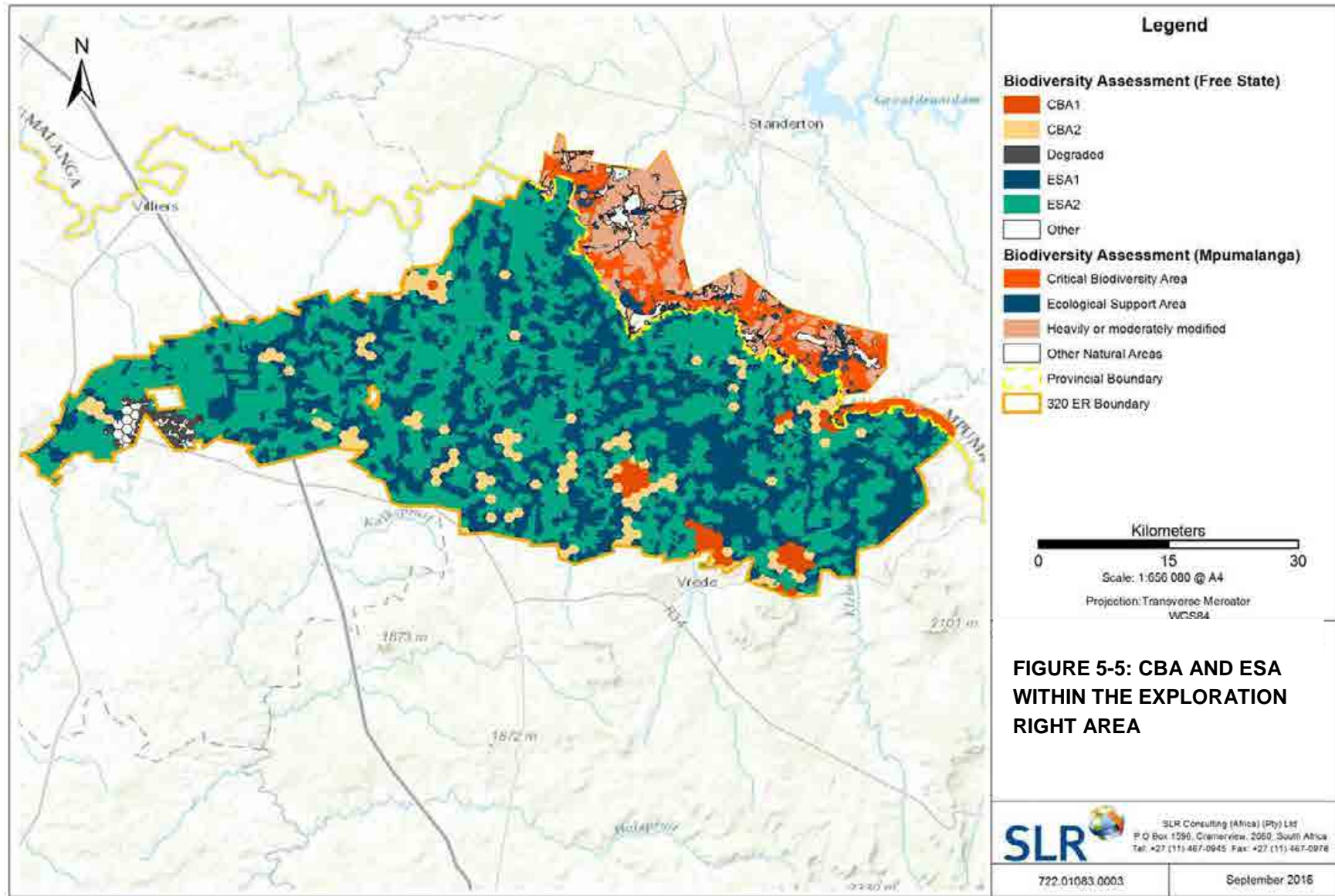


### 5.1.5.1 Bioregional planning

The ER application area falls across two provinces each with biodiversity conservation plans prepared by the provincial departments. These conservation plans, including the Free State Provincial Biodiversity Plan (2015) and the Mpumalanga Biodiversity Sector Plan (SANBI), provide an assessment of the value of areas as determined by their necessity in meeting defined conservation targets. CBAs and Ecological Support Areas (ESA) within the ER application Area are shown in Figure 5-5. The objectives and compatible / incompatible land uses are described in Table 5-2.

**TABLE 5-2: GENERAL DESCRIPTION OF BIODIVERSITY CATEGORIES AND ASSOCIATED LAND MANAGEMENT OBJECTIVES (COLLINS, 2005)**

<b>CBA Map Category</b>	<b>Land Management Objective</b>	<b>Compatible Land-Use</b>	<b>Incompatible Land-Use</b>
<b>CBA 1 (Irreplaceable)</b>	<ul style="list-style-type: none"> <li>Maintain intact and undisturbed state.</li> <li>Where disturbed, maintain or improve their ecological integrity by means of stabilisation, rehabilitation or restoration.</li> </ul>	<ul style="list-style-type: none"> <li>Eco-tourism, game farming, extensive livestock production are most suited.</li> <li>High impact and other development options are not necessarily excluded, but if allowed, must not compromise ecological integrity.</li> </ul>	<ul style="list-style-type: none"> <li>Urban land-uses, including: Residential (including golf estates, rural residential, resorts), Business, Mining &amp; Industrial; Infrastructure (roads, power lines, pipelines).</li> <li>Intensive animal production (all types including dairy farming associated with confinement, imported foodstuffs, and improved/irrigated pastures).</li> <li>Arable agriculture (forestry, dry land &amp; irrigated cropping).</li> <li>Small holdings</li> </ul>
<b>CBA 2 (Optimal)</b>	<ul style="list-style-type: none"> <li>Maintain ecosystems and species largely intact and undisturbed.</li> </ul>	<ul style="list-style-type: none"> <li>Current practices, so long as these are managed in a way to ensure populations of threatened species are maintained and the ecological processes which support them are not impacted on.</li> <li>Any activities compatible with CBA1.</li> </ul>	<ul style="list-style-type: none"> <li>Urban land-uses, including: Residential (including golf estates, rural residential, resorts), Business, Mining &amp; Industrial; Infrastructure (roads, power lines, pipelines).</li> <li>More intensive agricultural production than what are currently undertaken on site.</li> </ul>
<b>Ecological Support Areas 1</b>	<ul style="list-style-type: none"> <li>Maintain ecosystem functionality and connectivity allowing for limited loss of biodiversity pattern.</li> </ul>	<ul style="list-style-type: none"> <li>Conservation and associated activities.</li> <li>Extensive game farming and eco-tourism operations.</li> <li>Extensive Livestock Production.</li> <li>Urban Open Space Systems.</li> <li>Low density rural residential, smallholdings or resorts or other developments where development design and overall development densities allow maintenance of ecological functioning.</li> </ul>	<ul style="list-style-type: none"> <li>Urban land-uses including Residential (including golf estates), Business, Mining &amp; Industrial; Infrastructure (roads, power lines, pipelines).</li> <li>Intensive animal production (all types including dairy farming associated with confinement, imported foodstuffs, and improved/irrigated pastures).</li> <li>Arable agriculture (forestry, dry land &amp; irrigated cropping).</li> <li>Note: Certain elements of these activities could be allowed subject to detailed impact assessment to ensure that developments were designed to maintain overall ecological functioning of ESAs.</li> </ul>
<b>Ecological Support Areas 2</b>	<ul style="list-style-type: none"> <li>Avoid additional / new impacts on ecological processes.</li> </ul>	<ul style="list-style-type: none"> <li>Existing activities (e.g. arable agriculture) should be maintained, but where possible a transition to less intensive land uses or ecological restoration should be favoured.</li> </ul>	<ul style="list-style-type: none"> <li>Any land use or activity that results in additional impacts on ecological functioning mostly associated with the intensification of land use in these areas (e.g. change of floodplain from arable agriculture to an urban land use or from recreational fields and parks to urban).</li> </ul>



### 5.1.6 FAUNA

Numerous faunal species such as birds, amphibians, reptiles, mammals, fish and insects are associated with the various vegetation units located in the ER application area. Species of concern that are likely to occur within the ER application area according to International Union Conservation of Nature (IUCN) in conjunction with the Nature Conservation Bill (2007) and the Mpumalanga Province State of the Environment Report (2003) are included in Table 5-3 to Table 5-8 below.

**TABLE 5-3: MAMMAL SPECIES OF CONCERN LIKELY TO OCCUR WITHIN THE EXPLORATION AREA**

Common name	Species	IUCN Status	Nature Conservation Bill	Mpumalanga 2003 status
Aardvark	<i>Orycteropus afer</i>	LC	Protected	-
Aardwolf	<i>Proteles cristatus</i>	LC	Protected	-
African rock python	<i>Python sebae natalensis</i>	-	Protected	-
African wildcat	<i>Felis libyca</i>	-	Protected	-
All species of house snake	<i>Genus Lamprophis</i>	-	Protected	-
All species of otter	<i>Family Mustelidae</i>	-	Protected	-
All species of terrestrial tortoise	<i>Family Testudinidae</i>	-	Protected	-
All species of girdled lizard	<i>Family Cordylidae</i>	-	Protected	-
All species of chameleon	<i>Family Chamaeleonidae</i>	-	Protected	-
All species of monitor	<i>Family Varanidae</i>	-	Protected	-
Bat-eared fox	<i>Otocyon megalotis</i>	LC	Protected	-
Black-footed cat	<i>Felis nigripes</i>	VU	Protected	-
Brown hyaena	<i>Hyaena brunnea</i>	NT	Protected	-
Civet	<i>Civettictis civetta</i>	LC	Protected	-
Hedgehog	<i>Erinaceus frontalis</i>	LC	Protected	-
Honey badger	<i>Mellivora capensis</i>	LC	Protected	-
Klipspringer	<i>Oreotragus oreotragus</i>	LC	Protected	-
Leopard	<i>Panthera pardus</i>	NT	Protected	-
Oribi	<i>Ourebia ourebi</i>	LC	Protected	-
Roan antelope	<i>Hippotragus equinus</i>	LC	Protected	-
Sable antelope	<i>Hippotragus niger</i>	LC	Protected	-
Scaly anteater	<i>Manis temminckii</i>	VU	Protected	--
Serval	<i>Leptailurus serval</i>	LC	Protected	-
Smith's red rock rabbit	<i>Pronolagus rupestris</i>	LC	Protected	-
Suricate	<i>Suricata suricata</i>	LC	Protected	-
Tsessebe	<i>Damaliscus lunatus</i>	LC	Protected	-
Vaal rhebok	<i>Pelea capreolus</i>	LC	Protected	-
Cape mole rat	<i>Georchus capensis yatesi</i>	NYBA	-	EN
Sclater's golden mole	<i>Chlorotalpa sclateri montana</i>	NYBA	-	CR
Highveld golden mole	<i>Amblysomus septentrionalis</i>	NT	-	VU
Rough-haired golden mole	<i>Chrysospalax villosus rufopallidus</i>	NYBA	-	CR
Rough-haired golden mole	<i>Chrysospalax villosus rufus</i>	NYBA	-	EN
Juliana's golden mole	<i>Neamblysomus julianae</i>	VU	-	EN

Common name	Species	IUCN Status	Nature Conservation Bill	Mpumalanga 2003 status
Robust golden mole	<i>Amblysomus robustus</i>	VU	-	VU
Meester's golden mole	<i>Amblysomus hottentotus meesteri</i>	NYBA	-	VU
Laminate vlei rat	<i>Otomys laminatus</i>	LC	-	VU
Peak-saddle horseshoe bat	<i>Rhinolophus blasii empusa</i>	NYBA	-	EN
Lesser long-fingered bat	<i>Miniopterus fraterculus</i>	LC	-	VU
Welwitsch's hairy bat	<i>Myotis welwitschii</i>	LC	-	EN
Short-eared trident bat	<i>Cloeotis percivali australis</i>	NYBA	-	EN
African striped weasel	<i>Poecilogale albinucha</i>	LC	-	NE
Pangolin	<i>Manis temminckii</i>	LC	-	VU
Aardwolf	<i>Proteles cristatus</i>	LC	-	NE
Natal red rock rabbit	<i>Pronolagus crassicaudatus ruddi</i>	NYBA	-	NE

LC = Least Concern, VU = Vulnerable, NT = Near Threatened, CR = Critical Endangered, EN = Endangered, NYBA=Not yet been assessed

**TABLE 5-4: AVIFAUNA SPECIES OF CONCERN LIKELY TO OCCUR WITHIN THE PROPOSED EXPLORATION AREA**

Common name	Species	IUCN Status	Mpumalanga 2003 status
All bulbuls	Family Pycnonotidae	LC	-
All crows	Family Corvidae	LC	-
All mousebirds	Family Colidae	LC	-
Cape Turtle Dove	<i>Streptopelia capicola</i>	LC	-
Common Quail	<i>Coturnix coturnix</i>	LC	-
Egyptian Goose	<i>Alopochen aegyptiacus</i>	LC	-
Grey-winged Francolin	<i>Scleroptila africanus</i>	LC	-
Helmeted Guinea-fowl	<i>Numida meleagris</i>	LC	-
Laughing Dove	<i>Streptopelia senegalensis</i>	LC	-
Orange River Francolin	<i>Scleroptila levaillantoides</i>	LC	-
Red-knobbed Coot	<i>Fulica cristata</i>	LC	-
Red-billed Teal	<i>Anas erythrorhyncha</i>	LC	-
Red-eyed Dove	<i>Streptopelia semitorquata</i>	LC	-
Red-winged Francolin	<i>Francolinus levaillanti</i>	LC	-
Red-winged Starling	<i>Onychognathus morio</i>	LC	-
Reed Cormorant	<i>Phalacrocorax africanus</i>	LC	-
Rock Pigeon	<i>Columba guinea</i>	LC	-
South African Shelduck	<i>Tadorna cana</i>	LC	-
Spur-winged Goose	<i>Plectropterus gambensis</i>	LC	-
Swainson's Spurfowl	<i>Pternistis swainsonii</i>	LC	--
White-breasted Cormorant	<i>Phalacrocorax lucidus</i>	LC	-
White-faced Duck	<i>Dendrocygna viduata</i>	LC	-
Yellow-billed Duck	<i>Anas undulata</i>	LC	-
Whitewinged Flufftail	<i>Sarothrura ayresi</i>	CR	CR
Rudd's Lark	<i>Heteromirafra ruddi</i>	VU	CR

Common name	Species	IUCN Status	Mpumalanga 2003 status
Yellowbreasted Pipit	<i>Hemimacronyx chloris</i>	NYBA	VU
Bald Ibis	<i>Geronticus calvus</i>	VU	VU
Botha's Lark	<i>Spizocorys fringillaris</i>	EN	EN
Wattled Crane	<i>Bugeranus carunculatus</i>	VU	CR
Blue Crane	<i>Anthropoides paradiseus</i>	VU	VU
Grey Crowned Crane	<i>Balearica reguloru,</i>	NYBA	VU
Blue Swallow	<i>Hirundo atrocaerulea</i>	VU	CR
Pinkthroated Twinspot	<i>Hypargos margaritatus</i>	LC	NT
Chestnutbanded Plover	<i>Charadrius pallidus</i>	NT	NT
Striped Flufftail	<i>Sarothrura affinis</i>	LC	VU
Southern Ground Hornbill	<i>Bucorvus leadbeateri</i>	VU	VU
Blackrumped Buttonquail	<i>Turnix hottentotta nana</i>	NYBA	EN
Blue Korhaan	<i>Eupodotis caerulescens</i>	NT	VU
Stanley's Bustard	<i>Neotis denhami</i>	NT	VU
African Marsh Harrier	<i>Circus ranivorus</i>	LC	VU
Grass Owl	<i>Tyto capensis</i>	LC	VU
Whitebellied Korhaan	<i>Eupodotis cafra</i>	NYBA	VU
Saddlebilled Stork	<i>Ehippiorhynchus senegalensis</i>	LC	CR
Lappetfaced Vulture	<i>Torgos tracheliotos</i>	VU	EN
Whiteheaded Vulture	<i>Trigonoceps occipitalis</i>	VU	EN
Bateleur	<i>Terathopius ecaudatus</i>	NT	VU
Cape Vulture	<i>Gyps coprotheres</i>	VU	VU
Martial Eagle	<i>Polemaetus bellicosus</i>	VU	VU
Peregrine Falcon	<i>Falco peregrinus minor</i>	NYBA	VU
Taita Falcon	<i>Falco fasciinucha</i>	NT	NT

LC = Least Concern, VU = Vulnerable, NT = Near Threatened, CR = Critical Endangered, EN = Endangered, NYBA=Not yet been assessed

**TABLE 5-5: ARACHNID SPECIES OF CONCERN LIKELY TO OCCUR WITHIN THE PROPOSED EXPLORATION AREA**

Common name	Species	IUCN Status	Nature Conservation Bill
<i>Baboon spider</i>	<i>Family Theraphosidae</i>	-	Protected
<i>Trapdoor spider</i>	<i>Family Ctenizidae, Nemesiidae and Cyrtantheniidae</i>	-	Protected

**TABLE 5-6: REPTILES SPECIES OF CONCERN LIKELY TO OCCUR WITHIN THE PROPOSED EXPLORATION AREA**

Common	Species	Mpumalanga 2003 Status	IUCN Status	Nature Conservation Bill
Haacke's flat gecko	<i>Afroedura haackei</i>	EN	NYBA	-
Abel Erasmus Pass flat gecko	<i>Afroedura sp.</i>	EN	NYBA	-
Mariepskop flat gecko	<i>Afroedura sp.</i>	EN	NYBA	-
Rondavels flat gecko	<i>Afroedura sp.</i>	EN	NYBA	-
Forest/Natal purpleglossed snake	<i>Amblyodipsas concolor</i>	VU	LC	-
Lowveld shieldnosed snake	<i>Aspidelaps scutatus intermedius</i>	VU	NYBA	-
Dwarf chameleon	<i>Bradypodion transvaalense complex</i>	VU	NYBA	-
Sungazer / Giant girdled lizard	<i>Cordylus giganteus</i>	VU	VU	-
Barberton girdled lizard	<i>Cordylus warreni barbertonensis</i>	VU	NYBA	-
Lebombo girdled lizard	<i>Cordylus warreni warreni</i>	VU	NYBA	--
Swazi rock snake	<i>Lamprophis swazicus</i>	VU	NT	-
Transvaal flat lizard	<i>Platysaurus orientalis orientalis</i>	NT	NYBA	-
Wilhelm's flat lizard	<i>Platysaurus wilhelmi</i>	VU	NYBA	-
Montane burrowing skink	<i>Scelotes mirus</i>	LC	NYBA	-
Breyer's longtailed seps	<i>Tetradactylus breyeri</i>	VU	VU	-
Karoo flat gecko	Genus <i>Afroedura</i>	-	-	Protected
Mountain flat gecko	<i>Afroedura nivaria</i>	LC	-	Protected
Striped harlequin snake	<i>Homoroselaps dorsalis</i>	NT	-	Protected

LC = Least Concern, VU = Vulnerable, NT = Near Threatened, CR = Critical Endangered, EN = Endangered, NYBA=Not yet been assessed

**TABLE 5-7: INVERTEBRATE SPECIES OF CONCERN LIKELY TO OCCUR WITHIN THE PROPOSED EXPLORATION AREA**

Common name	Species	Mpumalanga 2003 Status	IUCN Status
Barbara's Copper	<i>Aloeides barbara</i>	EN	NYBA
Cloud Copper	<i>Aloeides nubilis</i>	VU	NYBA
Rossouw's Copper	<i>Aloeides rossouwi</i>	EN	VU
Stoffberg Widow	<i>Dingana fraterna</i>	EN	NYBA
Irving's Blue	<i>Lepidochrysops irvingi</i>	VU	NYBA
Swanepoel's Blue	<i>Lepidochrysops swanepoeli</i>	EN	VU
Jeffery's Blue	<i>Lepidochrysops jefferyi</i>	EN	VU
Rossouw's Blue	<i>Lepidochrysops rossouwi</i>	VU	NYBA
Marsh Sylph	<i>Metisella meninx</i>	VU	NYBA

LC = Least Concern, VU = Vulnerable, NT = Near Threatened, CR = Critical Endangered, EN = Endangered, NYBA=Not yet been assessed

**TABLE 5-8: AMPHIBIAN SPECIES OF CONCERN LIKELY TO OCCUR WITHIN THE PROPOSED EXPLORATION AREA**

Common name	Species	Mpumalanga 2003 Status	IUCN Status
Karoo Toad	<i>Bufo garipeensis nubicolus</i>	VU	LC
Natal Ghost Frog	<i>Heleophryne natalensis</i>	VU	LC
Spotted Shovel-Nosed Frog	<i>Hemismus guttatus</i>	VU	VU
Yellow Striped Reed Frog	<i>Hyperolius semidiscus</i>	VU	LC
Plain Stream Frog	<i>Strongylopus wageri</i>	VU	LC
Giant Bullfrog	<i>Pyxicephalus adspersus</i>	VU	LC
Greater Leaf-Folding Frog	<i>Afrixalus fornasinii</i>	VU	NYBA
Whistling Rain Frog	<i>Breviceps sopranus</i>	VU	LC

LC = Least Concern, VU = Vulnerable, NT = Near Threatened, CR = Critical Endangered, EN = Endangered, NYBA=Not yet been assessed

### 5.1.7 HYDROLOGY

The ER application area falls within the Upper Vaal Water Management Area (WMA), which covers a catchment area of 55 565 km<sup>2</sup>. The Upper Vaal is the uppermost WMA in the Vaal River catchment and one of five WMAs in the Orange River Basin, of which the Vaal River catchment forms a major component. It is surrounded by the Crocodile (West) and Marico, Olifants, Inkomati, Usutu to Mhlatuze, Thukela, Upper Orange and Middle Vaal WMAs, and adjoins Lesotho in the southern extreme (Basson & Rossouw, 2003).

Major rivers in the Upper Vaal WMA include the Vaal and its tributary, the Wilge River. Other tributaries of note include the Klip, Liebenbergsvlei, Waterval, Suiderbosrand and Mooi Rivers. The largest proportion (46%) of the surface flow in the WMA is contributed by the Vaal River upstream of Vaal Dam, together with its main tributary the Klip River. The Wilge River and the Liebenbergsvlei River contribute 36%, with the remaining 18% originating from the tributaries downstream of Vaal Dam.

To enable improved representation of the water resources situation in the WMA, and to facilitate the applicability and better use of information for strategic management purposes, the WMA was divided into three sub-areas. These include:

- Wilge sub-area, which corresponds to the catchment of the Wilge River to its confluence with the Vaal River;
- The sub-area “Upstream of Vaal Dam”, which corresponds to the portion of the Vaal River catchment upstream of Vaal Dam – the ER application area is located within this sub-area; and
- The sub-area “Downstream of Vaal Dam”, which comprises the portion of the Vaal River catchment between Vaal Dam and the confluence of the Mooi River with the Vaal River, at the downstream border of the water management area.

The Upper Vaal WMA consists of numerous quaternary catchments. The characteristics of the quaternary catchments located within the ER application area are included in Table 5-9 below. Refer to Figure 5-6 to see the ER application area in relation to the distribution of the quaternary catchments.

There are no natural lakes in the WMA. Important wetlands occur along the Klip River, with several vlei areas elsewhere in the WMA. The WMA includes the very important dams; Vaal Dam, Grootdraai Dam and Sterkfontein Dam. Numerous farm dams have also been built in the catchment of Vaal Dam, which

negatively impact on the inflow to Vaal Dam. The total water requirements in the Upper Vaal WMA is 2 424 million m<sup>3</sup>/annum (National Water Resource Strategy, 2004).

Naturally the quality of surface water in the WMA is good, particularly in those streams in the north-western parts which receive outflow from the dolomitic aquifers in the region. However, the large quantities of urban and industrial effluent, together with urban wash-off and mine pumping, have a major impact on the water quality in some tributary rivers in the north western part of the water management area (e.g. Waterval, Blesbokspruit, Natalspruit, Klip) and particularly on the Vaal River downstream of Vaal Dam (Basson & Rossouw, 2003).

**TABLE 5-9: QUATERNARY CATCHMENTS IN THE UPPER VAAL WATER MANAGEMENT AREA WITHIN THE EXPLORATION RIGHT APPLICATION AREA (MIDDLETON & BAILEY, 2009)**

Quaternary Catchment	Mean Annual Runoff (million m <sup>3</sup> or mcm)	Catchment Area (km <sup>2</sup> )
C11M	41.13	796
C12A	14.23	485
C12B	18.44	479
C12C	16.52	666
C12J	7.47	344
C13B	37.56	616
C13D	59.17	896
C13F	36.61	611
C13G	21.87	435
C13H	20.84	589
C82H	25.19	783
C83J	8.14	222

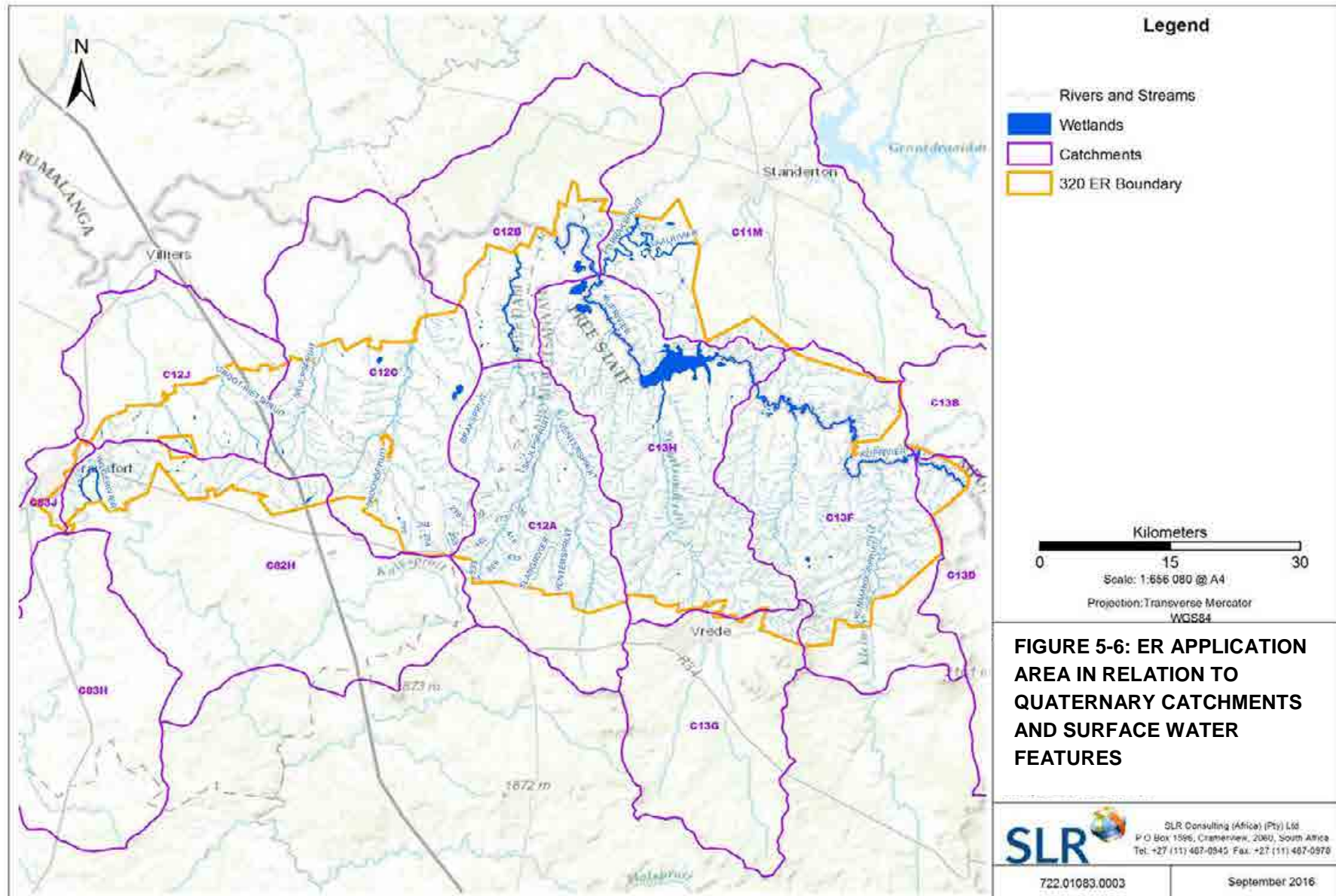
## 5.1.8 GROUNDWATER

### 5.1.8.1 Aquifer Classification

The ER application area is classified as a “minor” aquifer region, which implies a moderately yielding aquifer system of variable water quality in terms of the Aquifer Classification Map of South Africa (DWAf, 2012a). Certain parts of the ER application area are classified as a “poor” aquifer region, which implies a low to negligible yielding aquifer system with moderate to poor water quality. Although borehole yields in the deeper aquifer are generally, considered low, structural features such as faults and fractures can produce higher yielding boreholes.

Aquifer vulnerability indicates the tendency or likelihood for contamination to reach a specified position in the groundwater system after introduction at some location above the uppermost aquifer. In terms of the ER application area, the aquifer vulnerability in accordance to the Aquifer Vulnerability Map of South Africa (DWA, 2013a), varies between ‘least’ and ‘moderate’ vulnerability. The areas of ‘least’ vulnerability are areas that are only vulnerable to conservative pollutants in the long-term when continuously discharged or leached. The areas of ‘moderate’ vulnerability are areas which are vulnerable to some pollutants, but only when continuously discharged or leached.





Aquifer susceptibility indicates the qualitative measure of the relative ease with which a groundwater body can be potentially contaminated by anthropogenic activities and includes both aquifer vulnerability and the relative importance of the aquifer in terms of its classification. In terms of the Aquifer Susceptibility Map of South Africa (DWA, 2013b), the ER application area is associated with a 'low' to 'medium' susceptibility aquifer.

### 5.1.8.2 Groundwater Quality

The Groundwater Quality Map of South Africa (DWA, 2012b) indicates that the groundwater quality that can be expected within the exploration area has electrical conductivity concentrations from low (0 – 70 mS/m) to high (150 – 370 mS/m) where the water will have a noticeable salty taste.

### 5.1.8.3 Groundwater use

There is significant groundwater use at a local scale with many farmers dependent on the abstraction of groundwater for both potable water, as well as for stock watering and in some cases irrigation.

## 5.2 CULTURAL ENVIRONMENT

### 5.2.1 HERITAGE / CULTURAL RESOURCES

The ER application area does not include any world heritage sites or national heritage sites as recognised by SAHRA. Provincial heritage sites as recognised by SAHRA that are located in the vicinity, but outside, of the ER application area are included in Table 5-10 and shown in Figure 5-7.

The presence of any other heritage sites / resources (e.g. artefacts, tools, etc.) will be determined during the onsite investigations undertaken during the next phase of the EIA.

**TABLE 5-10: PROVINCIAL HERITAGE SITES AS RECOGNISED BY THE SAHRA**

Site name	Description	Town	NHRA status	Co-ordinates
Post Office, Van Reenen Street, Frankfort	Type of site: Post office	Frankfort	Provincial Heritage Site	27°16'39"S 28°29'32"E
Police Station, Van Reenen Street, Frankfort	Type of site: Police station	Frankfort	Provincial Heritage Site	27°16'36"S 28°29'32"E
Old Magistrate's Court, Van Reenen Street, Frankfort	Type of site: Courthouse.	Frankfort	Provincial Heritage Site	27°16'36"S 28°29'32"E
All Saints Anglican Church, 70 Church Street, Vrede	Small dolomite building with corrugated iron roof. The building was erected in 1890 by the building contractors Thomas Cowan and Aleck H. Doig. Architectural style: Neo-gothic. Type of site: Church	Vrede	Provincial Heritage Site	29°08'55"S 27°26'12"E

Site name	Description	Town	NHRA status	Co-ordinates
Nederduitse Gereformeerde Church, Church Square, Vrede	It is a single storey sandstone building with a corrugated iron roof. The congregation of Vrede was established in March 1882. The corner-stone was laid on In Oct 1887. Architectural style: Neo-gothic. Type of site: Church Current use: Church.	Vrede	Provincial Heritage Site	27°25'35"S 29°09'51"E
Grave of Gen Piet Joubert, Rustfontein 126, Volksrust District	General Piet Joubert, one-time Commandant-General of the South African Republic, and his wife are buried in this graveyard in an architecturally impressive mausoleum. Type of site: Grave.	Volksrust	Provincial Heritage Site	27°20'53"S 29°36'41"E

### 5.2.2 PALEONTOLOGICAL RESOURCES

According to the SAHRIS database the ER application area is located in an area that is regarded to have a very high to high paleontological sensitivity (see Figure 5-8). It follows that there is a high likelihood of fossil occurrence within the exploration area.

### 5.3 SOCIO-ECONOMIC ENVIRONMENT

The ER application area overlaps with the Free State and Mpumalanga provincial border and falls under the jurisdiction of the following district municipalities (see Figure 1-1):

- Free State
  - > Fezile Dabi District Municipality
  - > Thabo Mofutsanyana District Municipality
- Mpumalanga
  - > Gert Sibande District Municipality

Further detail regarding the demographics of the district and local municipalities is provided below. This information has been sourced from: Fezile Dabi IDP 2016 - 2017; Thabo Mofutsanyana IDP 2012 - 2016; and Gert Sibande District Municipality IDP 2016 - 2017

#### 5.3.1 THABO MOFUTSANYANA DISTRICT MUNICIPALITY

The Thabo Mofutsanyana District Municipality is one of five district municipalities in the Free State. Thabo Mofutsanyana is comprised of the following six local municipalities, including Mantsopa, Phumelela, Maluti a Phofung, Nketoana, Dihlabeng and Setsoto. The ER application area overlaps with the Phumelela Local Municipality (see Figure 5-9).

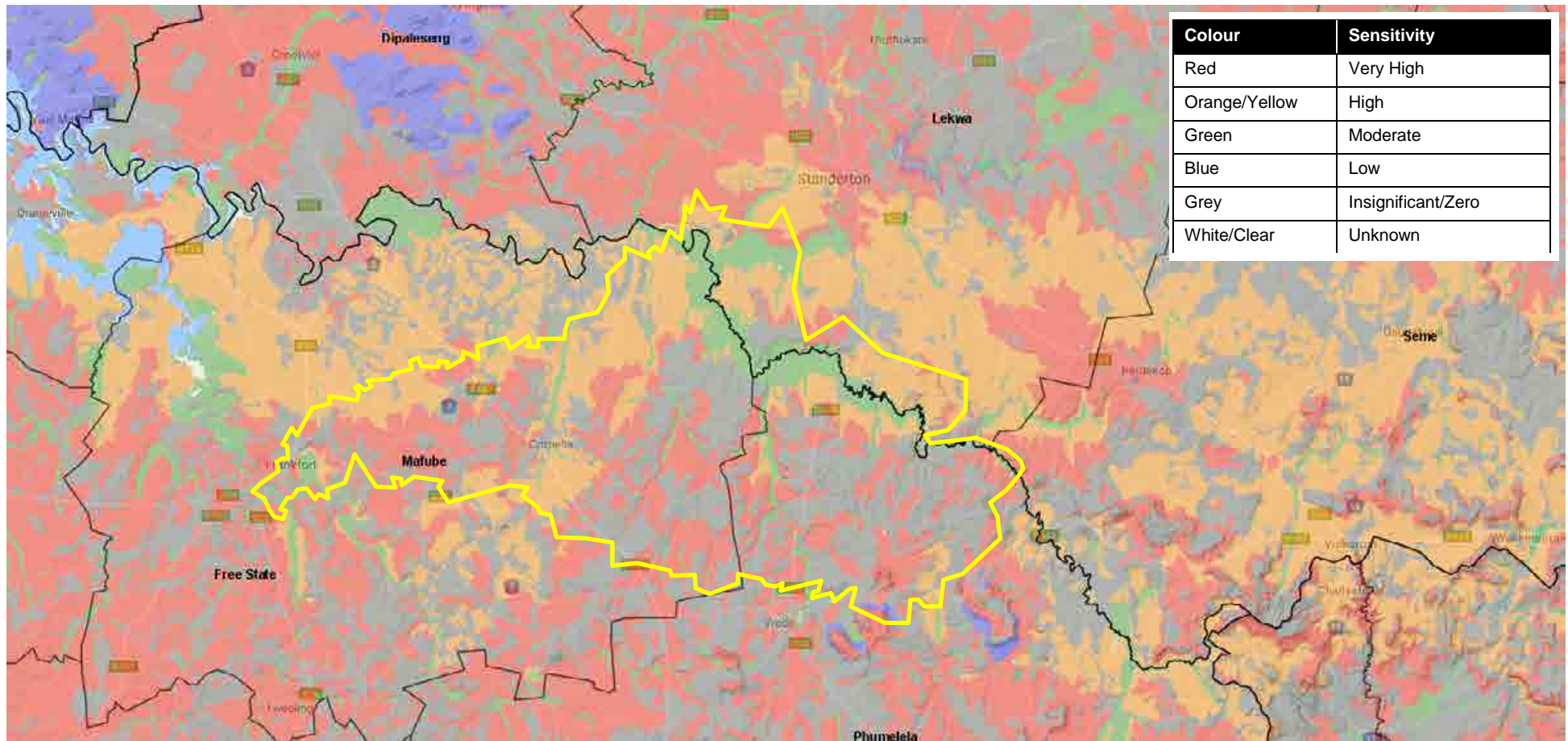
#### **Population**

Since the year 2000, the population of Thabo Mofutsanyana has been on the decline. The population growth rate for Thabo Mofutsanyana has decreased dramatically between 1996 and 2008; from 0.9% to -1.0%. However, since 2009 the rate of decline has decreased.



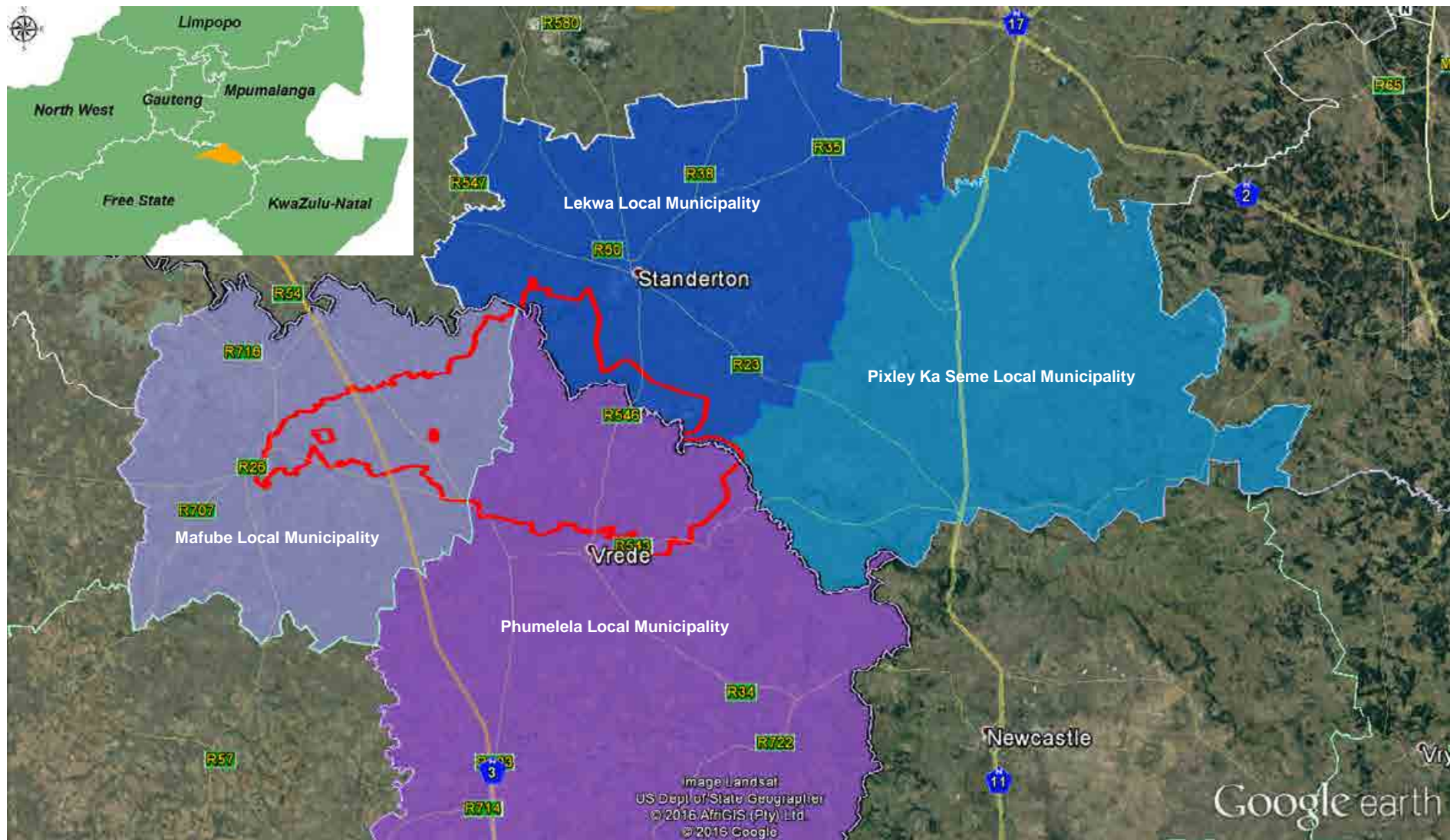


**FIGURE 5-7: PROVINCIAL HERITAGE SITES NEAR THE EXPLORATION RIGHT AREA**  
(AFTER SAHRIS DATABASE)



**FIGURE 5-8: PALEONTOLOGICAL SENSITIVITY MAP. THE APPROXIMATE LOCATION OF THE EXPLORATION RIGHT AREA IS ALSO SHOWN (AFTER SAHRIS DATABASE)**





**FIGURE 5-9: EXPLORATION RIGHT APPLICATION AREA IN RELATION TO LOCAL MUNICIPALITIES**

The population per local municipality (in 2011) within Thabo Mofutsanyana is shown in Table 5-11 below. In 2011, 62.6% of Thabo Mofutsanyana population was between 15 and 64 years and 31.9% was <15 years. The sex ratio of Thabo Mofutsanyana in 2011 was 87.3 males per 100 females.

**TABLE 5-11: POPULATION BREAKDOWN IN THE THABO MOFUTSANYANA DISTRICT MUNICIPALITY**

Local municipality	Population	% of district population
Mantsopa	51 056	6.92%
<b>Phumelela</b>	<b>47 772</b>	<b>6.47%</b>
Maluti a Phofung	335 784	45.48%
Nketoana	60 324	8.17%
Dihlabeng	128 704	17.43%
Setsoto	112 597	15.25%

The Human Development Index (HDI), which is a measure of economic development and economic welfare, of Thabo Mofutsanyana increased from 0.51 in 1996 to 0.60 in 2012, which was lower than the provincial average. Over the same period the Free State improved from 0.55 to 0.63. The local municipality with the highest HDI in Thabo Mofutsanyana was Dihlabeng (0.62), while Phumelela has the lowest development level (0.56).

The level of inequality (Gini-coefficient) in Thabo Mofutsanyana increased from 0.56 in 1996 to 0.59 in 2012. However, the district had the lowest index when compared to the other districts in the Free State.

The percentage of people living in poverty in Thabo Mofutsanyana has been on the decline; from 48.9% in 1996 to 37.8% in 2012. The poverty rate<sup>8</sup> in the district has decreased from 48.9% in 1996 to 37.8% in 2012.

### Education

In 2011, only 24.4% of the population in the district had matric and only 5.5% had higher education. In the district 9.0% had no schooling.

### Employment and Unemployment Levels

In 2012 the region of Mangaung was the biggest employer in the province at 30%, while Thabo Mofutsanyana employed 22% of people in the province (third lowest of the five districts). The biggest employers in Thabo Mofutsanyana were Community Services (26.4%), Agriculture (22.7%), Trade (18.0%) and Private Households (15.6%). Mining was the smallest employer in the region with 0.1%, followed by Electricity (0.4%).

The Free State province had the highest unemployment in the country at 30.5% in 2012. The Thabo Mofutsanyana unemployment rate was above the provincial average at 34.2%.

<sup>8</sup> Poverty rate is described as the percentage of people living in households with an income less than the poverty income (i.e. the minimum monthly income needed to sustain a household).

**GDP Contributions by Industry**

The biggest sectors in Thabo Mofutsanyana in 2012 were:

- Community services (62.2%);
- Finance (17.7%);
- Trade (15.8%);
- Transport (6.4%); and
- Agriculture (12.8%).

The smallest sectors were:

- Mining (0.6%);
- Electricity (1.5%);
- Construction (2.2%); and
- Manufacturing (2.8%).

The fastest growing local municipalities were Mantsopa (1.7%) and Dihlabeng (1.5%), while Phumelela (0.7%) and Nketoana (1.2%) had the slowest growth.

**5.3.2 FEZILE DABI DISTRICT MUNICIPALITY**

The Fezile Dabi District Municipality forms the northern part of the Free State Province and borders Thabo Mofutsanyane, Lejweleputswa and shares provincial borders with three of other Provinces: Gauteng, Mpumalanga and North West. The Vaal River and the Vaal Dam form the northern boundary of Fezile Dabi District Municipality, which also serve as the boundary between Free State and Gauteng. The Fezile Dabi District Municipality is the second smallest District Municipality covering 16.4% of the provincial area.

Fezile Dabi is comprised of the following four local municipalities, including Moqhaka, Ngwathe, Metsimaholo and Mafube. The ER application area overlaps with the Mafube Local Municipality (see Figure 5-9).

**Population**

In 2011 the Fezile Dabi population was 488 036 (i.e. 17% of the total population of the Free State). The majority of the population in the district is situated in Moqhaka (32.89%), with Mafube (11.86%) having the smallest population (see Table 5-12). Although Fezile Dabi had a positive population growth rate of 0.13% in 2011, the Mafube Local Municipality has a negative growth rate of -1.49%.

Fezile Dabi has a youthful population with the majority being between the ages of 15 and 34 years. In 2011, 45% of the Fezile Dabi population was between 22 and 49 years and 36% was below 20 years.

**TABLE 5-12: POPULATION BREAKDOWN IN THE FEZILE DABI DISTRICT MUNICIPALITY**

Local municipality	Population	% of district population
Moqhaka	160 515	32.9%
Metsimaholo	149 095	30.55%
Ngwathe	120 496	24.69%
<b>Mafube</b>	<b>57 881</b>	<b>11.86%</b>



In terms of the HDI, the district had an equal index to South Africa and a slightly better index compared to the province. The Metsimaholo area has the highest HDI of 0.63 and the Mafube area the lowest index of 0.47.

In terms of the Gini-coefficient (inequality), the district had a slightly better equality index if compared to the province, with the Metsimaholo area with the highest levels of inequality in the district.

Poverty levels in the district have decreased since 2000 from 46% of people in poverty to 33.9% in 2010. These figures are better than that for the province at 39.7% in 2010. In 2010 the Mafube area had the highest levels of poverty at 50.5% (2010).

### **Education**

Education and literacy levels have significantly improved in the district from 2000 to 2010. However, in 2010 a total of 23 000 people older than 15 years had no schooling at all. The main problem areas are Ngwathe and Mafube. Literacy rates in the district were relatively low at 74.4% in 2010, compared to the South African average literacy rate of 89.3% at the same time.

The Metsimaholo area has the highest literacy rate in the district at 80.8%, while the Mafube area has a literacy rate of only 59.7%.

### **Employment and Unemployment Levels**

In 2012 the region of Mangaung was the biggest employer in the province at 30%, while Fezile Dabi Mofutsanyana employed 19% of people in the province (fourth lowest of the five districts). In terms of formal jobs sectors in the district, the sectors of Agriculture, Manufacturing, Community Services and Households are the main contributors.

Growth in unemployment has been low at 0.7% in the district over the period from 2000 to 2010. The official unemployment rate in the district in 2010 was 22%, compared to the provincial rate of 28.7%. The Ngwathe area had the highest levels of unemployment at 31.9%.

### **Economic profile of the District**

The biggest sectors in Fezile Dabi in 2011 were:

- Trade (22%);
- Community services (20%);
- Manufacturing (13%).
- Households (13%);
- Agriculture (12%);
- Finance (7%);
- Construction (6%);
- Transport (5%);
- Mining (1%); and
- Electricity (1%).

Metsimaholo is the only local municipality in which the private sector dominates the economy, where the main economic contribution is from the manufacturing sector, dominated by Sasol. Moqhaka had the second highest GDP contribution in the district.

### 5.3.3 GERT SIBANDE DISTRICT MUNICIPALITY

The Gert Sibande District Municipality is one of three district municipalities in Mpumalanga. Gert Sibande is comprised of the following seven local municipalities, including Govan Mbeki, Albert Luthuli, Mkhondo, Msukaligwa, Lekwa, Pixley Ka Seme and Dipaleseng. The ER application area overlaps with the Lekwa and Pixley Ka Seme local municipalities (see Figure 5-9).

#### Population

The population per local municipality (in 2011) within Gert Sibande is shown in Table 5-13 below. Gert Sibande has the lowest growth rate compared to the other two districts, which means development in the district is very slow, which has led to outflow of businesses and skilled people.

**TABLE 5-13: POPULATION BREAKDOWN IN THE GERT SIBANDE DISTRICT MUNICIPALITY**

Local municipality	Population	% of district population	Annual growth rate
Govan Mbeki	294 538	28.23%	2.84%
Albert Luthuli	186 010	17.83%	-0.09%
Mkhondo	171 982	16.49%	1.84%
Msukaligwa	149 377	14.32%	1.80%
<b>Lekwa</b>	<b>115 662</b>	<b>11.09%</b>	<b>1.13%</b>
<b>Pixley Ka Seme</b>	<b>83 235</b>	<b>7.98%</b>	<b>0.30%</b>
Dipaleseng	42 390	4.06%	0.93%

The population in Gert Sibande exhibits many of the national population characteristics. Women and youth are in the majority and there is a relatively high population dependency. In 2010, 61.6% of the Gert Sibande population was between 0 and 29 years, 23.7% were between 30 and 49 years and 14.7% was 50 years and older. The majority of the people in the district constitute youth from the age group 15 to 35.

The sex ratio of Gert Sibande also shows an even elevated excess of females versus males, where there are 97 males for every 100 females. Govan Mbeki and Dipaleseng are the only local municipalities in the district with a larger number of males compared to that of females on average. Migration is one of the factors in population dynamics that affect sex ratios.

The HDI of Gert Sibande increased from 0.51 in 2001 to 0.64 in 2013, compared to the other two districts Nkangala (0.66) and Ehlanzeni (0.62).

The level of inequality (Gini-coefficient) in Gert Sibande decreased from 0.66 in 2001 to 0.62 in 2012. The poverty rate also decreased from 50.4 in 2001 to 37.9% in 2012.

#### Education

In 2011, only 27.9% of the population in the district had matric and only 9.1% had higher education. Population 20+ years old with no schooling improved from 13.4% in 2011 to 10.7% in 2014. Education level is considered to be the main factor, which could lead to even higher unemployment rates in the district.

### **Employment and Unemployment Levels**

In 2011 Gert Sibande had 109 661 unemployed individuals of the 368 787 economically active population, i.e. an unemployment rate of 29.7%. Unemployment in 2014 was estimated to be lower at 27.3%. Unemployment rate for females and males is 38.4% 22.9%, respectively, showing that there is a large gap in terms of equity between man and women in terms of employment.

In 2013 the leading industries in terms of employment were:

- Trade (22.1%);
- Community services (18.3%);
- Manufacturing (10.6%);
- Agriculture (9.9%);
- Finance (9.8%);
- Private households (9.1%);
- Mining (8.4%);
- Construction (6.7%);
- Transport (3.6%); and
- Utilities (1.5%).

Dipaleseng is the local municipality with the highest unemployment in Gert Sibande with a rate of 39.3% in 2014 and Lekwa local municipality is the lowest at 22.3%.

### **Economic profile of the District**

In 2012, Gert Sibande was the second largest contributor (at 31.0%) in the province after Nkangala (at 39.3%). Dipaleseng (0.6%) and Pixley Ka Seme (1.1%) local municipalities made the smallest contributions to the provincial economy.

In 2012, manufacturing (57.4%) was the leading industry in terms of percentage contribution to Gert Sibande's economy, followed by mining (14.1%) and community services (12.3%). Agriculture's contribution was 4.7%. There was a decreasing role/share of mining and increasing role/share of manufacturing between 2001 and 2012.

## **5.3.4 CURRENT LAND COVER AND USES**

### **5.3.4.1 Towns**

The ER application area is located roughly between the towns of Standerton (Mpumalanga) in the north, Frankfort (Free State) in the west and Vrede (Free State) in the east. Cornelia (Free State) is located within the proposed ER boundary. These towns comprise numerous buildings such as schools, sports facilities, hospitals / clinics, shops, local farm co-operations and designated residential areas.

All residential areas (i.e. erfes) of the towns are excluded from the ER application area.

### **5.3.4.2 Local transport network**

That national road (N3) between Villiers and Warden traverses the ER application area. Numerous tarred provincial roads traverse (to varying degrees) the ER application area (see Figure 5-10). These include the following:

- R103 from Villiers, via Cornelia, to Warden;
- R546 between Standerton and Vrede;

- R34 from Frankfort to the R103;
- R26 from Frankfort to Villiers; and
- R543 from Vrede to Volksrust.

Further to this, numerous gravel roads are located within the ER application area predominately associated with access to farms.

#### 5.3.4.3 Land Cover

According to the National Land Cover Data Set (2013/2014), the great majority of the ER area comprises grasslands (see Figure 5-11). A considerable area is characterised by cultivated fields owing to the extensive commercial farming practices in the area.

#### 5.3.4.4 Agricultural activities

The Free State and the Mpumalanga highveld form part of what is known as South Africa's "bread basket". Maize is the dominant field crop in these two provinces, followed by wheat, sunflowers, dry beans, grain sorghum and groundnuts. In Mpumalanga province, intensive crop farming under irrigation is practiced along lower river basins in the Lowveld, notably along the Komati and Crocodile rivers.

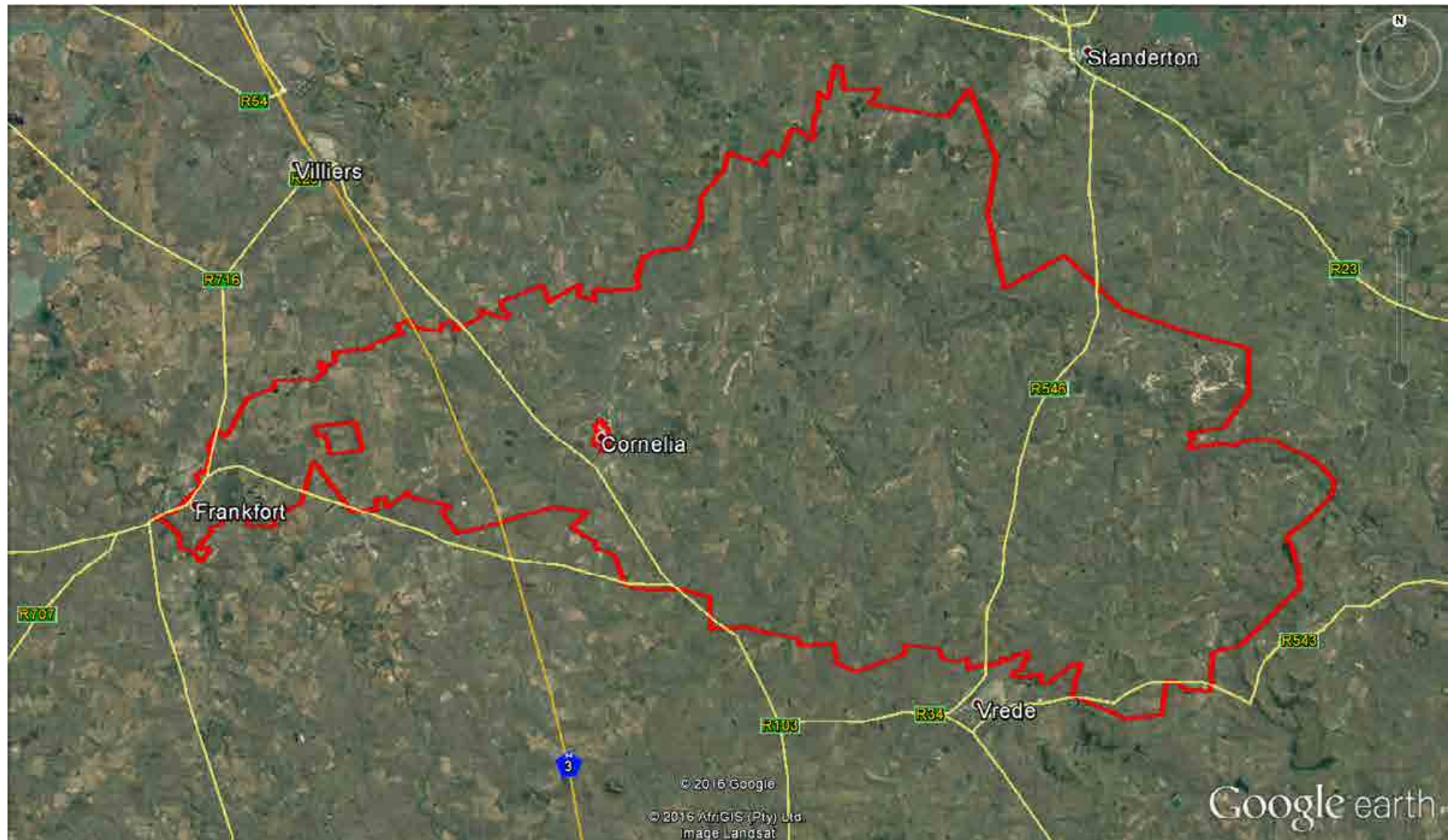
Agricultural activities associated with the ER application area include a combination of crop production, animal production, horticulture, dairy farming, game farming, aquaculture, fruit production and agro-processing. Much is dryland but there are areas of irrigated crops. The large majority of the land is used for extensive livestock grazing (cattle and sheep). Subsistence farming is mostly associated with the towns where residents run livestock on the townlands.

#### 5.3.4.5 Protected areas and Important Bird Areas

All areas with protected status under the NEMPRAA, NEMBA, National Forests Act, 1998 (No. 84 of 1998) and Mountain Catchment Areas Act, 1970 (No. 63 of 1970) are excluded from the extent of the exploration right application area. One protected area, the Lourensa Game Farm, is located in the study area, approximately 13 km to the east of Frankfort (see Figure 5-12). This protected area is 6.81 km<sup>2</sup> in extent and has been excluded from the ER application area.

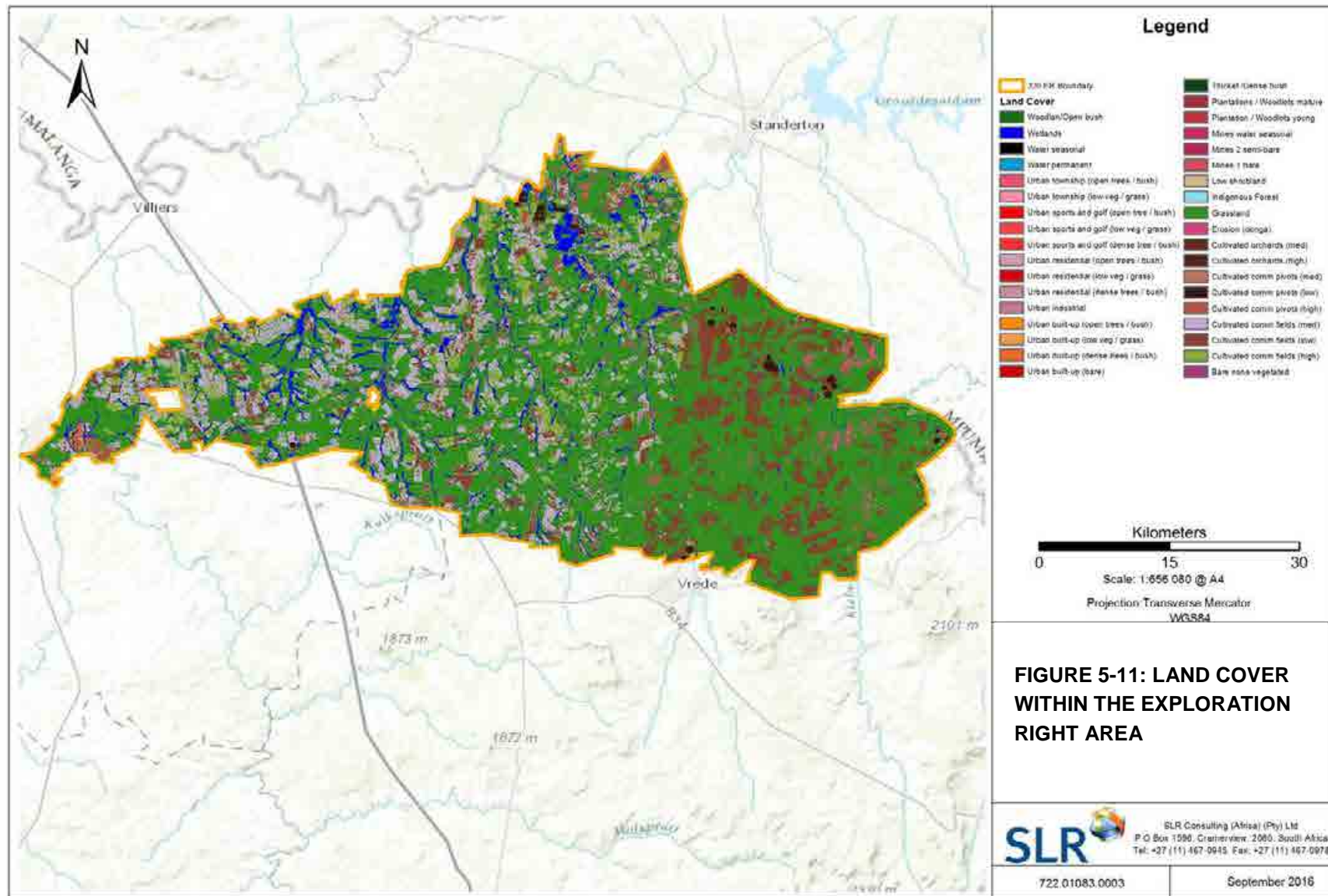
The ER application area overlaps with four National Protected Areas Expansion Strategy (NPAES) focus areas for land-based protected area expansion (see Figure 5-12). The areas are large, intact and unfragmented areas of high importance for biodiversity representation and ecological persistence, suitable for the creation or expansion of large protected areas. It should be noted that these areas should not be seen as future boundaries of protected areas, as in many cases only a portion of a particular focus area would be required to meet the protected area targets set in the NPAES.

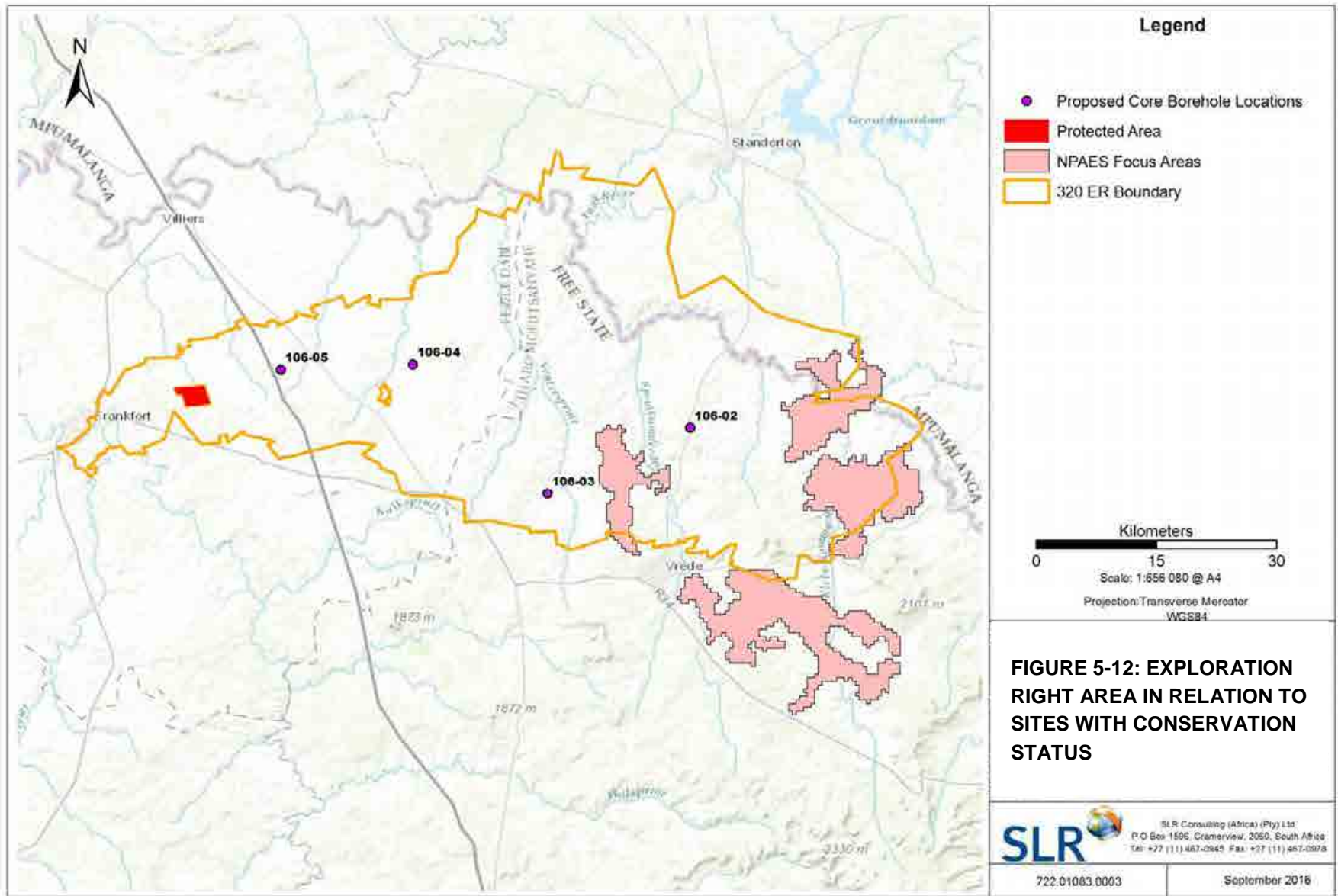
The Mpumalanga Grassland Important Bird Area (IBA), which has been recognised by BirdLife South Africa and BirdLife International as both a national (SA 125) and global (ZA 016) IBA, extends over the eastern portion of the ER application area. Proposed core drilling sites are located outside of this IBA (see Figure 5-13).



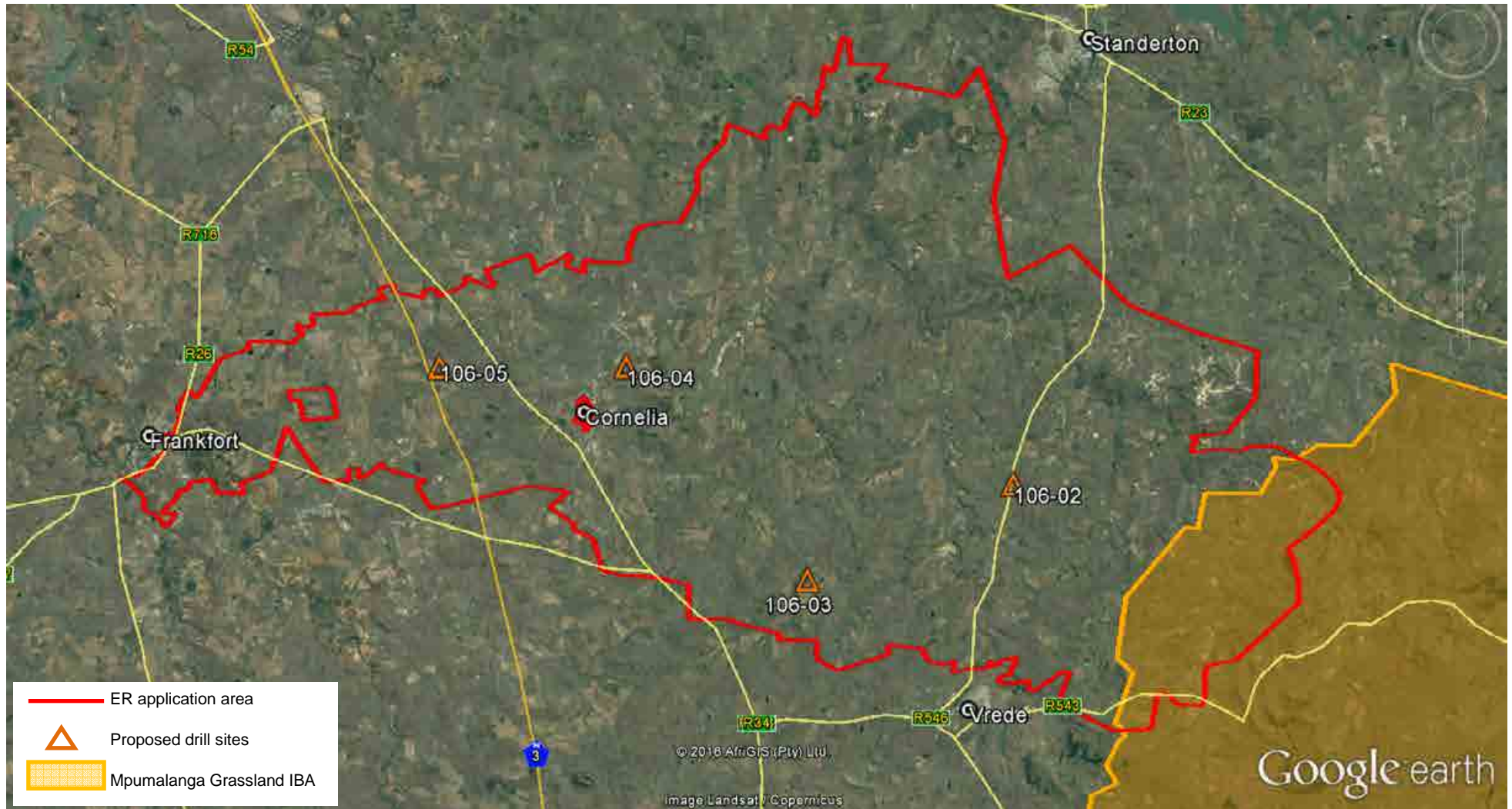
**FIGURE 5-10: MAJOR ROAD NETWORK IN THE VICINITY OF THE ER APPLICATION AREA**











**FIGURE 5-13: ER APPLICATION AREA IN RELATION TO THE MPUMALANGA GRASSLAND IBA**



## 6 KEY PROJECT ISSUES AND IMPACTS

The key issues and impacts described in this chapter have been identified by the EIA project team with inputs made by I&APs. These are presented below, together with responses by the EIA project team, in two sections, namely:

- Section 6.1: Issues related to activities proposed as part of the current work programme; and
- Section 6.2: Issues not related to activities proposed as part of the current work programme.

The sequence in which these issues are listed are in no order of priority or importance. The verbatim issues and concerns raised by I&APs during the scoping phase to date have been compiled into a Comments and Responses Report ([see Appendix 5.10](#)) with the actual submissions also included in Appendix 5.7 [and 5.9](#).

### 6.1 ISSUES RELATED TO ACTIVITIES PROPOSED AS PART OF THE CURRENT PROPOSED WORK PROGRAMME

#### 6.1.1 IMPACT ON ECOLOGY

During exploration impacts to the ecology could include:

- Loss of or disturbance to vegetation, including species of conservation concern, from vehicles traversing areas or on-site activities;
- Disturbances to fauna, particularly species of conservation concern, as a result of on-site activities; and
- Enabling the establishment of alien and invasive species in disturbed areas.

The potential impact on water resources is discussed separately below (see Sections 6.1.2 and 6.1.3).

##### 6.1.1.1 Loss of or disturbance to vegetation and faunal habitats

**Issue:** Vegetation would be cleared and/or disturbed as a result of the proposed core drilling activities, including the establishment of work platforms, possible creation of new access tracks, etc. The clearing of vegetation and exploration activities may also result in the loss or disturbance to habitats of faunal significance.

**Response:** A typical diamond core drill rig and equipment requires an operating area of approximately 1 000 m<sup>2</sup> per borehole. Based on the assumption that four boreholes would be drilled, the cumulative area that would be impacted by the proposed drilling operation itself would be in the order of 0.4 ha. Thus the extent of vegetation exposed to these risks is very limited. The potential impact on the vegetation and faunal habitats has, to a large extent, been avoided or minimised as part of the site selection process. Afro Energy's approach has been to avoid sensitive natural vegetation or habitats, watercourses and steep slopes, as far as possible, based on a desktop analysis, and locate proposed drill sites within areas that had previously been disturbed.

An Ecological Assessment will be commissioned to evaluate the proposed drill sites and assess the potential impact they would have on the vegetation, faunal habitats and ecological / biodiversity processes. The terms of reference for this assessment are presented in Section 8.3.1.

Since the final locations of the exploration boreholes are flexible, they can be adjusted to accommodate local environmental sensitivities identified during the specialist onsite investigation. Other possible mitigation measures that will be considered for inclusion in the EMPr include:

- Restricting vehicles to existing roads and tracks, as far as possible
- Demarcation of drill sites in order to minimise the extent of any vegetation clearance / disturbance;
- Implement buffers (no-go areas) around sensitive areas;
- Minimise vegetation clearing by retaining smaller, low-growing vegetation types, topsoil and root stock on site; and
- Rehabilitate disturbed areas to re-establish the pre-exploration land use (in consultation with landowners).

#### 6.1.1.2 Disturbance to and mortality of fauna

**Issue:** In addition to the indirect impact on fauna as a result of loss or damage to natural vegetation (faunal habitat), animals in the vicinity of the drill sites may be affected by increased human presence / activity, and increased noise and vibration generated by vehicles and core drilling.

**Response:** Several studies indicate that noise / vibration can have a negative impact on wildlife, mostly observed as behavioural changes including startle and alarm response, with animals moving away from a source of noise and activity (particularly mobile species such as birds, large snakes and medium-sized mammals). However, many reptiles and small mammals (rodents and insectivores) may hide underground and may be directly impacted by site clearing. Others may not be able to move out due to a lack of alternate habitat.

Drilling noise could affect sensitive species, forcing individuals to move away from the source. Some may abandon their shelters. However, most animals would return to the area after the noise or disturbance has ceased, which would be within a few weeks for each core hole. Drilling noise and other disturbances would be unlikely to alter feeding and breeding behaviour or displacement of animals from their preferred habitats, as it would not be of sufficient duration to cause species not to return in the short-term.

In addition to disturbance of faunal movement, direct mortality could result from the proposed onsite activities. Although exploration activities may lead to direct mortality of individuals that cannot safely flee the site, it is not expected that any species of conservation concern would be encountered in large numbers, and there would thus not be a permanent impact on any population/species as a whole.

An Ecological Assessment will be undertaken during the next phase of the EIA to assess the potential impact on terrestrial fauna (see Section 8.3.1). As noted in the section above, the significance of this impact would, to a large extent, be minimised by the placement of drill sites within previously disturbed areas. Other possible mitigation measures that will be considered for inclusion in the EMPr include:

- Restricting vehicles to existing roads and tracks, as far as possible;
- Imposing and enforcing speed limits;
- Implement buffers (no-go areas) around sensitive areas; and
- If necessary, scheduling operations during least sensitive periods, avoiding migration, nesting and mating seasons.

#### 6.1.1.3 Enabling the establishment of alien and invasive species in disturbed areas

**Issue:** The establishment of alien and invasive plant species may be enabled by disturbances to the natural vegetation. Thus vegetation clearance and soil excavations during exploration could be the catalyst that enables alien and invasive plant species to colonise in new areas. The introduction of alien invasive vegetation could occur as a result of vehicular traffic and the import of materials.

**Response:** Alien and invasive plant species occur widely in the region and are known to have impacts on natural vegetation, water resources and fauna. As it is estimated that only approximately 0.4 ha would be subject to actual disturbance from exploration activities, the extent of disturbed areas vulnerable to colonisation by alien and invasive plants is very limited.

Indirect impacts on natural vegetation from the inadvertent introduction of alien vegetation (through imported material / seeds or vehicles brought in from other areas) can be adequately managed through implementation of an alien eradication / monitoring programme. The specific requirements for an alien eradication / monitoring programme will be identified in the next phase of the EIA as part of a specialist ecological assessment (see Section 8.3.1). These specific requirements will be included in the EMPr.

### 6.1.2 IMPACT TO GROUNDWATER

Most agricultural activities in the region use groundwater and may be partly or wholly dependent on groundwater. Many rural houses obtain potable water from groundwater. Some of the smaller towns operate municipal wellfields as a water source. Groundwater can, therefore, be viewed as a critical resource. Any changes to the quality or quantity of water in near surface aquifers may affect local, adjacent and even distant users who rely on groundwater for domestic and agricultural use.

#### 6.1.2.1 Altered hydrogeological regime and groundwater availability

**Issue:** Core hole drilling would more than likely involve interaction with groundwater, which could have an impact on groundwater availability.

**Response:** Core boreholes would be drilled to depths of up to 800 m and would intercept groundwater if aquifers are present. The drilling of the core hole creates a direct conduit (approximately 8.5 cm in diameter) that connects the rock strata from higher up to the bottom of the hole. Groundwater in different stratigraphic aquifers could theoretically flow via this conduit from one aquifer to another, potentially affecting the availability and quality of water in these aquifers. If a core hole is abandoned without proper plugging this flow could continue.

The proposed drilling would be no different to the 152 historical coal exploration boreholes already drilled in the area (see Section 4.4 and Figure 4-3). The key mitigation measure to protect and minimise potential risks to near surface aquifers is the casing-off of aquifers. The upper sections of the core holes would be cased and cemented to depths below all potential aquifers (see Figure 4-8), which would close off the near surface aquifers. Core holes would be capped pending further investigation or sealed with cement if not required further. In the case of sealing the borehole a down hole cement plug would be placed below all potential aquifers and the balance of the hole plugged with bentonite fluid. There would, therefore, be very little opportunity for cross connection between aquifers and changes in water availability are not expected.

A specialist Groundwater Assessment will be undertaken during the next phase of the EIA to assess the potential impact on groundwater (see Section 8.3.2). Since the final locations of the exploration boreholes are flexible, they can be adjusted to accommodate identified onsite environmental sensitivities (including groundwater). Thus impacts on the groundwater can generally be avoided with the placement of activities outside of areas that are not considered suitable on the basis of the specific groundwater resources on site. Other mitigation measures that will be considered for inclusion in the EMPr include:

- Casing of core holes through the aquifer layers (see Figure 4-8);
- Adequate sealing and plugging of core holes after drilling; and

- Monitoring of groundwater (level and quality) in active water boreholes in close proximity to exploration boreholes.

### 6.1.2.2 Contamination of groundwater resources

**Issue:** Contamination of groundwater could occur as a result of the use of drilling fluids during core hole drilling, and accidental spillages and leaks.

**Response:** As indicated in Section 6.1.2.1, the drilling of the core hole creates a direct conduit (approximately 8.5 cm in diameter) that connects the rock strata from higher up to the bottom of the hole. Groundwater (including any contaminants and gas) in different stratigraphic aquifers could theoretically flow via this conduit from one aquifer to another, potentially affecting the quality of water in these aquifers.

Drilling of core holes would require the use of some drilling fluids and lubricants in order to maintain cooling and lubrication of the bit and to return the fine drill cuttings to the surface. The drilling fluids could mix with groundwater encountered down the hole until such time as the hole is cased and grouted. The upper aquifers would be exposed to the drilling fluids for the shortest periods as the upper section of the hole is cased and grouted early in the drilling process. Drilling fluids are unlikely to have a significant effect on groundwater quality for the following reasons:

- The drilling additives used are largely not hazardous and / or are bio-degradable (these are not fracking fluids);
- Drilling additives are relatively diluted in the drilling water (<3%);
- Fluids are designed to not move far from the drilling hole unless very poor formations or large cracks are encountered;
- A 'mudcake' of drill cuttings seals most of the drilled formations even during drilling;
- Drilling fluids are only used for a short period while the hole is being drilled;
- The total volume of drilling fluids is very small in comparison with any aquifer volume; and
- Return water and drilling fluid would be managed in above surface sumps.

Contaminants could also potentially enter the core hole from accidental situations, and would be introduced directly into the aquifer with limited opportunity for natural filtration by soils or geologic materials. Leaks and spills from vehicles, machinery and handling of potential pollutants (e.g. fuel and lubricants) during activities in the field could potentially contaminate groundwater resources through infiltration. If a contamination incident occurs it could put other boreholes in the same aquifer at risk, particularly those boreholes on the same property or those that are close to the core hole. Although it is not possible to predict the quantities of potential contaminants that may be accidentally released into the environment, periodic leaks and spills, should they occur, are likely to be very small. The placement of core holes at suitable buffer distances away from existing boreholes would further minimise the risk to those boreholes.

As noted above, a Groundwater Assessment will be undertaken during the next phase of the EIA to assess the potential impact on groundwater (see Section 8.3.2). Mitigation to minimise the contamination of groundwater resources that will be considered for inclusion in the EMPr include:

- Casing of core holes through the aquifer layers;
- Select the least hazardous and / or bio-degradable additives and use the smallest volumes of these;
- Appropriate management and disposal of drilling fluids on surface;
- As a precautionary measure, implement a buffer (no-go area) between core holes and active water production boreholes. An appropriate buffer would need to be determined;
- Adequate maintenance of vehicles and machinery;

- Implementation of an adequate waste management plan;
- Good housekeeping practices (including spill prevention and response); and
- Monitoring of groundwater in active water boreholes in close proximity to exploration boreholes.

### 6.1.2.3 Water consumption

**Issue:** Water would be required for the core hole drilling operation. The use of groundwater may compete with existing users for the 3 to 4 week drilling period at a given location.

**Response:** It is estimated that approximately 5 000 litres of water per day would be required per drilling site, if drilling conditions are reasonably good and the formation is solid. Thus the total water use per hole over a four week period is estimated to be in the order of 140 000 litres. The drilling of up to four boreholes within the ER application area would thus consume in the order of 560 000 litres over a period of four months. This is, however, considered to be an over estimation as the water would be recycled in above-ground sumps.

At a regional scale this water use is considered to be insignificant. However, at a local scale, in terms of existing allocations and in times of drought the water use could be significant. Water required for the operation of the drilling rig would be obtained locally (e.g. dam, river, stream or borehole), by agreement with landowners and in terms of regulatory requirements.

As noted above, a specialist Groundwater Assessment will be undertaken during the next phase of the EIA to assess the potential impact on groundwater (see Section 8.3.2). Mitigation to ensure the lawful use of groundwater resources that will be considered for inclusion in the EMP include:

- Water must be sourced in a lawful manner and without comprising the rights of any existing user;
- Any abstraction from an existing borehole or surface resource must be undertaken with the landowners' consent; and
- Water separation / recycling mud systems must be considered for use in order to minimise water usage.

The need for a General Authorisation or Water Use Licence will also be determined as part of the Groundwater Assessment.

### 6.1.3 IMPACTS ON SURFACE WATER

Surface water is found in springs, seeps, wetlands, pans, dams and watercourses. The region comprises the headwaters of a number of very important river systems, which supply large quantities of water for human consumption, agricultural and industrial use. Baseline water quality in the area is generally good. Any changes to the quality or quantity of water in surface resources may affect adjacent users who rely on water for domestic, agricultural and industrial use.

#### 6.1.3.1 Altered surface water hydrological regime

**Issue:** Potential changes to the surface water hydrological regime (surface flow, drainage patterns, sediment load and availability) could have secondary impacts on water users and terrestrial and aquatic environment.

**Response:** The proposed exploration activities are unlikely to have any real effect on the overall hydrological regime as the small footprint of the proposed activities would not alter natural surface drainage patterns. As project activities would for the most part take place within areas that have been previously disturbed, and

away from watercourses, further surface disturbances that could affect surface drainage patterns (e.g. soil compaction or increased erosion) would be limited.

No activities are proposed that would impede or divert the flow of water in, or alter the bed, banks, course or characteristics of a watercourse.

An Ecological Assessment will be undertaken during the next phase of the EIA to assess the potential impact on surface water resources (see Section 8.3.2). Since the final locations of the exploration boreholes are flexible, they can be adjusted to accommodate identified onsite environmental sensitivities (including watercourses, wetlands, etc.). Thus impacts on the surface water can generally be avoided with the placement of activities outside of areas that are not considered suitable on the basis of the specific surface water resources on site. Disturbed areas would be rehabilitated to re-establish the pre-exploration land use (in consultation with landowners).

The need for a General Authorisation or Water Use Licence will also be determined as part of the Ecological Assessment.

#### 6.1.3.2 Contamination of surface water resources

**Issue:** As for groundwater contamination, leaks and spills from vehicles, machinery and handling of potential pollutants (e.g. fuel, and lubricants) during activities in the field could potentially contaminate surface water resources. In addition, inadequate management of surface sumps could result in the contamination of surface water resources. The release of contaminants into water resources could result in a deterioration of water quality, limiting use by water users, as well as damaging aquatic ecosystems.

**Response:** Exploration requires the use of vehicles and equipment driven by engines using hydrocarbons (normally diesel). Some of the equipment has hydraulic systems with lubricants. Certain hazardous lubricants and chemicals may also be used and stored on site. Thus leaks and accidental spillages could occur from containers or during refuelling, which could in turn contaminate surface water resources through stormwater discharge into wetland, rivers and streams.

The overall volume of the high risk materials on-site during drilling would be relatively small (a maximum of 1 000 litres of diesel would be stored on site for each drilling operation). Although it is not possible to predict the quantities of potential contaminants that may be accidentally released into the environment, periodic leaks and spills, should they occur, are likely to be very small. Adequate maintenance of vehicles and machinery, use of drip trays, good housekeeping practices (including spill prevention and response) and the implementation of an adequate waste management plan would minimise any potential impact.

Returned drill water would be managed in above surface sumps. These surface sumps would thus also contain sediments, drilling fluids and possibly hydrocarbons at concentrations not suitable for release to the environment. Inadequate management of surface sumps could result in the contamination of surface water resources.

The key mitigation is to adjust the final drill site location to accommodate identified onsite environmental sensitivities (including watercourses, wetlands, etc.). This will be considered as part of the Ecological Assessment (see Section 8.3.2). Other mitigation to minimise the contamination of surface water resources that will be considered for inclusion in the EMPr include:

- The location of the surface sumps should avoid surface water resources and should take the topography, natural drainage and site run-off into account;

- As a precautionary measure, implement a buffer (no-go area) between core boreholes / sump ponds and any surface water resources. An appropriate buffer will need to be determined;
- Adequate maintenance of vehicles and machinery;
- Good housekeeping practices (including spill prevention and response); and
- Implementation of an adequate waste management plan.

### 6.1.3.3 Water consumption

Refer to Section 6.1.2.3.

## 6.1.4 SOILS

### 6.1.4.1 Physical impact on soils (increased erosion / compaction)

**Issue:** The exposure of soils through vegetation clearance and / or physical disturbance of exposed soils may increase the risk of erosion (by wind and water), while the repetitive movement of vehicles and machinery over such surfaces could compact soils. These impacts may collectively affect the surface hydrology, damage soil structure, reduce aeration, soil permeability, infiltration rates and water retention capacity and retard the regeneration of vegetation. Reduced infiltration could also result in an increase in surface runoff, potentially causing increased erosion.

**Response:** Impacts to soils caused by the proposed core drilling activities would be limited to the footprint of each drill site area, which would for the most part be confined to previously disturbed areas (e.g. agricultural lands) already exposed to disturbance, compaction and an increased risk of erosion. A typical core drill rig and equipment requires an operating area of approximately 1 000 m<sup>2</sup>. Thus the extent of soil exposed to these risks is very limited.

An Ecological Assessment will be undertaken during the next phase of the EIA to assess the potential impact on soil (see Section 8.3.1). This significance of this impact would to a large extent be minimised by the placement of drill sites within previously disturbed areas. Other possible mitigation measures that will be considered for inclusion in the EMPr include:

- Restricting vehicles to existing roads and tracks, as far as possible
- Demarcation of drill sites in order to minimise the extent of any vegetation clearance / disturbance;
- Implement buffers (no-go areas) around sensitive areas;
- Minimise vegetation clearing by retaining smaller, low-growing vegetation types, topsoil and root stock on site; and
- Rehabilitation of disturbed areas (including ripping compacted areas and erosion control measures).

### 6.1.4.2 Potential contamination of soils

**Issue:** Leaks and spills from vehicles, machinery and handling of potential pollutants (e.g. fuel and lubricants) during on-site activities may potentially contaminate the soil.

**Response:** Exploration requires the use of vehicles and equipment that use fuel. Some of the equipment has hydraulic systems with lubricants. Certain hazardous lubricants and chemicals may also be used and stored on site. Thus leaks and accidental spillages could occur from containers or during refuelling, which could in turn contaminate the soil.



The overall volume of the high risk materials on-site during drilling would be relatively small as indicated above (a maximum of 1 000 litres of diesel would be stored on site). Although it is not possible to predict the quantities of potential contaminants that may be accidentally released into the environment, periodic leaks and spills, should they occur, are likely to be very small. Adequate maintenance of vehicles and machinery, good housekeeping practices (including spill prevention and response) and the implementation of an adequate waste management plan would minimise any potential impact.

Inadequate management of return drill water in surface sumps could also result in the contamination of surface water resources.

This potential impact will be assessed based on the findings of the Ecological Assessment (see Section 8.3.1). Mitigation to minimise the contamination of soil that will be considered for inclusion in the EMPr include:

- Adequate maintenance of vehicles and machinery;
- Good housekeeping practices (including spill prevention and response); and
- Implementation of an adequate waste management plan.

#### 6.1.5 HERITAGE

**Issue:** Core drilling activities and site access could potentially result in the loss of or damage to heritage resources. Many farms and communities in rural areas have graveyards located near to them. There are also many buildings, infrastructure and sites of cultural or heritage importance across the Free State and Mpumalanga.

**Response:** The heritage resources of the ER application area include archaeological and palaeontological material and the built environment comprising historic towns and farm buildings. Heritage resources, including archaeological or palaeontological sites over 100 years and buildings, graves and other structures older than 60 years are protected in terms of the NHRA and may not be disturbed without a permit from the relevant heritage resources authority.

The amount of surface and subsurface disturbance is minimal during core drilling. Cultural resources buried below the surface are unlikely to be affected, while material present on the surface could be disturbed by vehicular traffic, ground clearing and pedestrian activity.

No core drilling would be allowed to take place near to known heritage sites. As the final location of the exploration boreholes is flexible, they can be adjusted to accommodate any local onsite sensitivities identified as part of the Heritage Assessment (See Section 8.3.3). Other possible mitigation measures that will be considered for inclusion in the EMPr include:

- Consultation with the landowner prior to commencement may help to identify other heritage sites; and
- Implementation of buffers (no-go areas) around known heritage sites.

#### 6.1.6 LAND TENURE AND ACCESS TO PRIVATE PROPERTY

**Issue:** The issuance of an ER would result in Afro Energy holding a right for “Petroleum and Natural Gas” exploration, which would necessitate access onto private property in order to undertake the proposed core drilling. Various queries were raised regarding access onto private property.

**Response:** Despite the issuance of an ER, the landowner would retain land ownership and the surface rights. A landowner has specific rights over land for which they hold title and is entitled to deny access to their land as it is private property. There would be no change in land tenure due to the issuance of an ER.

Although the right to access land is conferred to an ER holder in terms of Section 5(3)(a) of the MPRDA, Afro Energy's stated approach is to negotiate with willing participants. Thus private property would only be accessed with prior consent of the landowner and in terms of a written landowner agreement. The agreement would be negotiated between ER holder and the landowner (or lawful occupier as the case may be) and would define all relevant conditions. Thus each landowner would have direct input into where exploration activities could take place on their land and the terms of any such use.

Four sites have thus far been identified for drilling (see Figure 4-7) based on the data collected as part of the TCP and discussion with directly affected landowners. Afro Energy is currently in the process of discussing possible locations on each farm with directly affected landowners. These site locations will be defined and site specific impact assessments undertaken during the course of the EIA process.

The final location, establishment and management of all core drilling sites would be undertaken in consultation with landowners and informed by the findings of the EIA process. Access would largely be through existing routes and gates. New tracks would only be created in agreement with the landowner. Controlled access points would be locked at all times or as required by the landowner.

#### 6.1.7 LAND USE

**Issue:** Core drilling would preclude other land uses (e.g. farming, mining, etc.) within the immediate drilling area for the duration of the drilling period. Potential impacts include:

- Prevention or disruption of land user' activities;
- Impacts to crops, plantations, veld and livestock / game;
- Related loss of income; and
- Loss of productivity on disturbed land.

**Response:** In order to minimise ecological impacts, Afro Energy's approach is to locate drill sites within areas that have been previously disturbed (i.e. within area with past or current land use activities). As the core hole drill sites would be limited to a small area (approximately 1 000 m<sup>2</sup>) for a period of three to four weeks, any loss of land for existing activities would be highly localised and temporary.

Key mitigation in order to avoid or minimise any impacts on existing land use is to ensure the final location of core drilling sites is undertaken in consultation with landowners. This would ensure that conflicting land uses are avoided where possible and disturbance to current land use activities are kept to a minimum. As mentioned above, exploration activities would be undertaken in terms of a written landowner agreement, and measures to ensure that any interference is avoided or minimised would be written into the agreement drawn up with each landowner. All disturbances occurring from exploration would be documented and the affected area returned to an agreed condition by the ER holder. In most cases the effects of any disturbance would more than likely not be visible over a period of a few months (see Figure 4-14).

The impact on existing land uses will be further investigated in the next phase of the EIA and appropriate management actions will be determined. Other mitigation to minimise the impact on landowners and current land uses that would be considered for inclusion in the EMP include:

- Possible exclusion periods to minimise the impact on current or planned land use activities (e.g. sowing, harvesting, etc.);

- Demarcation of drill sites in order to minimise the extent of the drilling footprint and to ensure livestock are kept away from exploration activities;
- Any loss of income would be determined between the landowner and the ER holder and compensation agreed where necessary (see Section 6.1.13 for more detail on compensation);
- Adequate consultation with landowners prior to and during on-site exploration activities; and
- Rehabilitate disturbed areas to re-establish the pre-exploration land use (in consultation with landowners).

### 6.1.8 STRUCTURAL DAMAGE TO INFRASTRUCTURE

**Issue:** Accidental damage during core drilling could occur as vehicles and equipment move on and between sites. Such damage to infrastructure (such as fences, gates, culverts, pipes and roads) would have direct cost of repair / replacement, as well as potential for significant loss of income due to the effects of such damage.

**Response:** As noted previously, any use of land or infrastructure for core drilling activities would be through a written landowner agreement negotiated between the ER holder and the landowner / occupier. Thus the landowner would have input into where exploration takes place and which infrastructure is used.

Exploration would typically be planned to be located away from infrastructure and appropriate buffers would be applied. Any risks with regard to accidental damage can be minimised by maintaining a suitable buffer between the exploration site and the nearest receptor. Ultimately, if access by exploration personnel and equipment caused any degradation or damage, the ER holder would be responsible for effecting satisfactory repairs.

### 6.1.9 NOISE

**Issue:** Primary sources of noise associated with the proposed exploration activities include vehicle traffic and drill rig operations. Increased noise levels may cause disturbances and nuisance to nearby receptors. The region generally has low ambient noise levels and exploration activities could change this, albeit for short durations.

**Response:** Drilling of core holes would increase noise levels in the immediate vicinity for a slightly extended time period (three to four weeks), which could have an impact on nearby receptors. Noise is known to attenuate with distance as well as due to other barriers and absorbing factors. The noise generated by general operations (presence of vehicles and crew) would be similar in nature to farming operations, and would be transient, with activities not fixed in one location.

Of the four proposed drill sites, the nearest residence / building is estimated to be approximately 1.3 km away from the site (see table below).

Borehole number	Distance to nearest residence / building
106-2	2.1 km
106-3	1.8 km
106-4	1.7 km
106-5	1.3 km

Potential noise impacts related to core drilling can be largely avoided by maintaining a suitable buffer between exploration sites and the nearest receptor. This issue will be further investigated in the next phase of the EIA, and an appropriate buffer will be determined.

### 6.1.10 AIR QUALITY

#### 6.1.10.1 Dust and vehicle emissions

**Issue:** Dust generated from the movement of vehicles to and from drill sites on unsurfaced roads and the drilling operation may contribute to elevated particulate matter levels in the air on a local scale. Emissions would also be generated by vehicles and other combustion-driven equipment (e.g. generators) that release nitrogen oxides (NO<sub>x</sub>), carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO) and volatile organic compounds (VOC).

**Response:** Dust is relatively inert, but high particulate levels can be damaging to health and vegetation / crops. In terms of dust generation and emissions, the proposed exploration activities would be similar to any comparable operation involving similar vehicles and equipment and emissions would be very limited in both intensity and duration.

Dust generation can be controlled by imposing and enforcing speed limits on all unsurfaced roads and tracks. The impact on air quality from core drilling activities would be managed through good maintenance of vehicles and machinery to minimise emissions. Note that spraying affected areas with water to control dust may not be possible or allowed due to water scarcity.

Air quality issues will be further investigated in the next phase of the EIA and appropriate management actions will be determined.

#### 6.1.10.2 Escape or release of gas from exploration boreholes

**Issue:** Core holes drilled to the target strata could create the opportunity for any gas present to escape to the surface and atmosphere. The escape or release of gas from exploration core holes is of concern as methane (one of the main constituents of natural gas) is a relatively powerful green-house gas with a high global warming potential (23 times that of CO<sub>2</sub>).

**Response:** If gas is present, the passive flow of gas up the core holes is expected to be limited as the strata remain under pressure and much of the gas is adsorbed to the particle surfaces. As noted in Section 4.2.1, the pressure in the formation may need to be reduced (through dewatering) in order for the gas to be released. However, if gas does leak out the borehole, it could pose a safety risk and contribute to green-house gas emissions.

Core holes would only be open for a period long enough to complete the drilling and downhole geophysics. If free flowing gas were to be detected then the holes would need to be capped or plugged as a priority, which would ensure that no gas would escape. Thus emissions are not anticipated to have a measurable impact on climate change.

Air quality issues will be further investigated in the next phase of the EIA and appropriate management actions will be determined.

### 6.1.11 LANDOWNER SECURITY

**Issue:** There may be concerns that the increased numbers of people in the area as a result of the proposed exploration activities could have an impact on farm safety and security, either through direct theft by contractors and staff or through undeterred access onto private land through gates that are left open.

**Response:** Concerns regarding site access, trespassing and farm security as a result of exploration teams would be alleviated by developing relationships with individual landowners. All access to land for exploration activities would have to be through a written landowner agreement negotiated between the ER holder and the landowner / occupier. Thus any additional landowner requirements with regard to safety and security can be discussed during landowner negotiations prior to the start of exploration and written into the agreements with each landowner, as required.

Mitigation to minimise the risks to landowner security that will be considered for inclusion in the EMP include:

- Avoiding the creation of new access points to farms, as far as possible;
- Ensuring the staff are under constant supervision and do not enter adjacent farms / residential areas under any circumstances except on official business; and
- Ensuring all gates are closed / locked.

### 6.1.12 CONTRIBUTION TO LOCAL ECONOMY

**Issue:** Contribution to the local economy could occur through the creation of some direct employment opportunities and generation of direct revenues as a result of using local businesses for support services and supplies. On the other hand if the exploration detracts from or compromises the main attractions of the region then it could result in a reduction in external inputs to the local economy.

**Response:** Since economic growth and employment opportunities are depressed in many of the small towns within the ER area, any potential stimulation of the local economy would result in a positive impact. However, since core drilling is highly technical and requires specialised equipment and crews, is anticipated that the appointed contractor would provide their own staff requirements (five in total). Thus, local communities are unlikely to benefit from any direct job opportunities.

There may, however, be some stimulation of the local economy through the purchase of supplies and equipment over the four month drilling period (i.e. three to four weeks per site). The applicant should, wherever possible, source the materials and equipment needed to operate the drilling equipment and sustain the personnel locally.

The above potential contribution to the economy would also need to take into consideration any potential negative impacts, e.g. impacts on existing land uses (e.g. agriculture, mining and tourism). Refer to Section 6.1.7 for a more detailed description of the impacts on existing land use.

### 6.1.13 COMPENSATION

**Issue:** Various queries were raised relating to compensation for: the minerals derived from the land; access to land; and the use of or impact to land.

**Response:** The MPRDA provides that all minerals / petroleum products vest with the State. Thus a landowner has no claim to the minerals that may occur on or under their land and is not legally due any compensation for those minerals.

The nature of the proposed exploration programme is not expected to have a significant effect on any landowner or occupier, nor the income derived from such land. This would be ensured by negotiating access with landowners and siting activities at agreed locations that do not conflict with current land uses. Where necessary, compensation would be agreed with landowners for “rental” and access, as well as any economic loss, damage to infrastructure, etc. This would form part of the landowner agreement that is negotiated between the ER holder and the landowner / occupier.

#### 6.1.14 REHABILITATION AND LIABILITY

**Issue:** Landowners were concerned about who would be responsible for rehabilitation of land and property after any exploration activity.

**Response:** Afro Energy would be responsible for the rehabilitation of all disturbances resulting from core drilling. Where areas have been disturbed by exploration, rehabilitation would be undertaken to re-establish the pre-exploration land use (in consultation with landowners). The process of managing the impacts and rehabilitating the exploration sites would be conducted in terms of an EMP approved by the PASA.

As part of the EIA process it is necessary to determine the quantum of a financial provision that is required for rehabilitation, closure and on-going post decommissioning management of negative environmental impacts (Regulations Pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations, GN 1147). This quantum must be made available by Afro Energy to PASA as security for the completion of rehabilitation should Afro Energy fail to do so. PASA, in consultation with other relevant authorities, would determine the use and allocation of this money for rehabilitation.

The quantum of the required financial provision would be determined through the EIA process. The amount and the method of providing the provision would be detailed in the EIR.

## 6.2 ISSUES NOT RELATED TO ACTIVITIES PROPOSED AS PART OF THE CURRENT WORK PROGRAMME

### 6.2.1 RISKS OF POSSIBLE FUTURE EXPLORATION AND PRODUCTION

**Issue:** Various issues and concerns were raised relating to potential future exploration and production activities and associated impacts. Given that Afro Energy’s end-goal is to extract hydrocarbons, some I&APs stated that exploration should only be considered for approval if it can be demonstrated that all future activities arising from exploration and production would not lead to unacceptable risks.

**Response:** The interest in and concerns around possible future exploration and production are recognised and acknowledged. However, at this stage it is not known if there is a viable resource in the ER application area, where it may be located and the nature of the resource. Thus the specifics of what future exploration or production would entail is not known.

As noted in Section 4.2.3, the exploration-to-production process is phased; where the information gained from an earlier phase is used to inform the specifics of future phases. Discovering gas reservoirs and estimating the likelihood of them containing a viable resource, and what would be required to extract gas, is

a technically complex process consisting of a number of different phases requiring the use of a range of exploration techniques. Without information on the scope, extent, duration and location of future activities it is not possible to undertake a reliable assessment of future impacts and any assessment would be mere speculation and of limited value to I&APs and the decision-maker.

Afro Energy is at the beginning of the exploration process and at this stage is only seeking authorisation to undertake early-phase exploration activities (i.e. core borehole drilling and aeromagnetic surveying), which are aimed at determining if there is a likely resource that would warrant further investigation. The proposed exploration activities would not enable the nature and extent (geographically or geologically) of the reservoir to be defined.

Based on Afro Energy's existing exploration operations in the Amersfoort (12/3/56 ER) and Volksrust (12/3/38 ER) areas, future exploration would more than likely entail the drilling of permeability test wells (see Figure 6-1), the location of which would be informed by the current exploration work programme (see Section 4.5). The results of this more detailed exploration phase would determine if there is in fact an economically viable gas resource and would provide further detail on the nature and extent of the resource (including the volume and quality of water in the coal seam that may require dewatering). After the drilling of permeability test wells, a pilot plant may be established, which would ultimately determine the size of the resource and inform the specifics of the production phase (including number and location of wells, dewatering and treatment / disposal, etc.).

As the specifics of what future exploration or production entails is not known at this stage, the scope of this EIA is limited to the current exploration work programme. PASA has accepted that this is a standard approach for any such development of a "petroleum" resource. The assessment of potential impacts associated with any future exploration or production activities would be undertaken as part of a future EIA (or environmental authorisation amendment) process, as required by NEMA. This would include a further public participation process and in-depth assessment (including specialist studies) of all project-related activities / issues. The assessment would be based on the known details of the work as proposed by the applicant.



**FIGURE 6-1: PERMEABILITY TEST WELL DRILLED NEAR AMERSFOORT (PHOTO: AFRO ENERGY)**

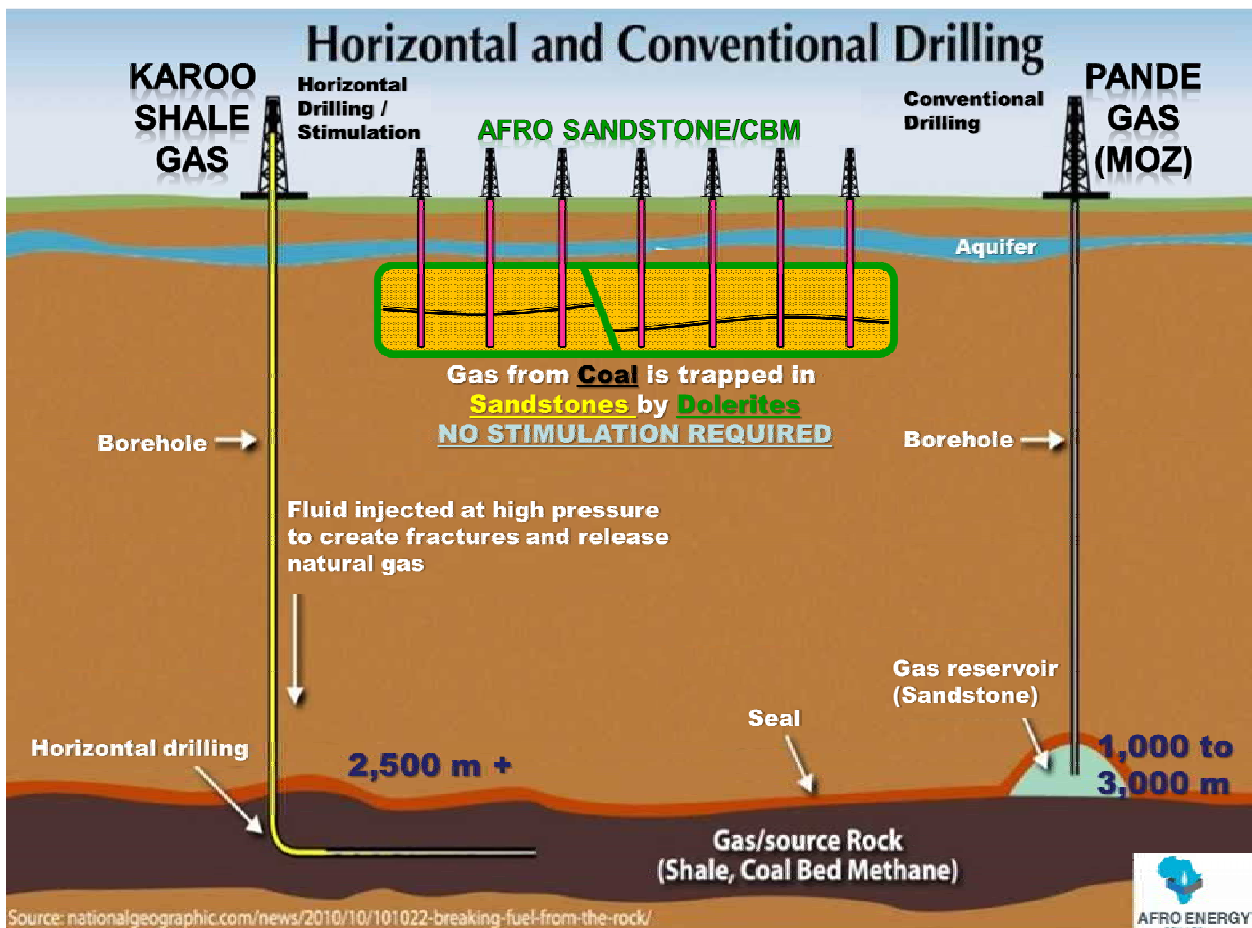


**6.2.2 HYDRAULIC FRACTURING AS A METHOD OF EXPLORATION**

**Issue:** Numerous issues and questions raised by I&APs were related to hydraulic fracturing, which were considered to result in unacceptable risks to surface and groundwater resources and human health.

**Response:** The interest in and concerns around hydraulic fracturing are recognised and acknowledged. However, it should be noted that it is possible for CBM gas to be released / extracted without formation stimulation as required for tight shale gas. If the coal seam and surrounding strata are permeable, dewatering may be sufficient to start gas flowing from the well.

It is important for I&APs to understand the fundamental difference between what Afro Energy is proposing and that related to shale gas exploration (see Figure 6-2). Firstly, Afro Energy is not targeting shale gas, located deeper than approximately 2 500 m below the surface, which may require hydraulic fracturing in order to release the gas. Afro Energy is targeting a much shallower gas resource, located approximately 100 m to 800 m below the surface, associated with the coal seams and adjacent sandstone / mudstone strata (see Figure 4-12). Secondly, exploration undertaken by Afro Energy's in its ER areas near Volksrust (12/3/38 ER) and Amersfoort (12/3/56 ER) has shown the geology to be sufficiently permeable (see Figure 4-11) to extract commercial rates of gas from unstimulated test wells (Figure 6-1). Thus Afro Energy has indicated that **well stimulation would not be required** to release the CBM gas and will not at any time during the project life-cycle (exploration or production) be considered as an activity for this project.



**FIGURE 6-2: DIFFERENCE BETWEEN UNCONVENTIONAL SHALE GAS, DEEP CONVENTIONAL AND AFRO ENERGY'S SHALLOW SANDSTONE/CBM RESOURCE**



## 7 PRELIMINARY ASSESSMENT OF PROJECT ALTERNATIVES

This chapter has been compiled in compliance with Section 2(h)(v) of Appendix 2 of GN R982. The aim of this Section is to compare the environmental impacts and risks of the project alternatives for the purpose of selecting the preferred alternative(s). It does not, however, provide a conclusive assessment of all potential impacts. The assessment of potential impacts will be informed by onsite evaluations and specialist input, and will be presented in detail in the EIR.

Table 7-1 identifies the potential impacts of the project alternatives, in relation to the local environment. The preliminary assessment ratings provided in this table are for the unmitigated scenario only which assumes that limited consideration is given to the prevention or reduction of environmental and social impacts. In most cases the alternative would be the mitigation. Furthermore, a conservative approach has been applied to these ratings in the absence of site specific studies. A discussion of each of the impacts and the advantages and disadvantages identified is provided in Section 6.1. Once all the investigations and studies have been completed the assessment and related ratings may change. Moreover, once the mitigation / management measures have been incorporated into the assessment as part of the EIA a determination of residual impact will be provided. The final ratings will be included in the EIR.

A summary of the preliminary assessment of project alternatives is provided below:

- The majority of the impacts associated with the preferred project alternatives would be of short-term duration and limited to the immediate drill site area, and are considered to range from **VERY LOW** to **LOW** significance. Potentially the most significant impact associated with the preferred project alternatives is the potential impact on groundwater, which is assessed to be of **MEDIUM** significance without mitigation.
- In comparison, many of the impacts associated with the other project alternatives (i.e. those alternatives not proposed) range from **MEDIUM** to **HIGH** significance.

**TABLE 7-1: POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS IDENTIFIED FOR THE PROPOSED ALTERNATIVES**

Impact	Alternative	Consequence			Probability	Significance	Degree to which impact:		
		Intensity	Extent	Duration			Can be reversed	Causes irreplaceable loss	Can be avoided / managed / mitigated
<b>1. Borehole drilling</b>									
<b>1.1 Ecology</b>									
Loss of or disturbance to vegetation and faunal habitats	Drill in previously disturbed sites (as proposed)	L	VL	VL	M	L	Fully reversible	Very unlikely	Yes
	Drill in undisturbed sites (not proposed)	M	VL	M	H	H	Partially reversible	Possible	Yes
<b>1.2 Groundwater</b>									
Altered hydrogeological regime and groundwater availability	All alternatives (sites and drilling method)	M	M	VL	L	M	Partially to fully reversible	Possible	Yes

Impact	Alternative	Consequence			Probability	Significance	Degree to which impact:		
		Intensity	Extent	Duration			Can be reversed	Causes irreplaceable loss	Can be avoided / managed / mitigated
Contamination of groundwater resources	Use of non-hazardous biodegradable drilling fluids (as proposed)	L	VL	VL	M	L	Partially to fully reversible	Unlikely	Yes
	Use of non-aqueous drilling fluids (oil based) (not proposed)	M	M	L	M	M	Partially to fully reversible	Unlikely	Yes
Water consumption	Recycling of water in aboveground skips	L	M	VL	L	L	Fully reversible	Unlikely	Yes
	No recycling of water	M	M	VL	L	M	Fully reversible	Unlikely	Yes
<b>1.3 Surface water</b>									
Altered surface water hydrogeological regime and availability	Drill in previously disturbed sites away from watercourses (as proposed)	VL	VL	VL	VL	VL	Fully reversible	Very unlikely	Yes
	Drill in undisturbed sites near water courses (not proposed)	M	VL	M	M	M	Partially reversible	Possible	Yes
Contamination of surface water resources	Use of non-hazardous biodegradable drilling fluids with aboveground skips (as proposed)	L	VL	VL	M	L	Fully reversible	Unlikely	Yes
	Use of non-aqueous drilling fluids (oil based) with no skips (not proposed)	H	M	M	M	H	Partially reversible	Possible	Yes
Water consumption	Recycling of water in aboveground skips	L	M	VL	L	L	Fully reversible	Unlikely	Yes
	No recycling of water	M	M	VL	L	M	Fully reversible	Unlikely	Yes
<b>1.4 Soils</b>									
Physical impact on soils (increased erosion / compaction)	All alternatives	VL	VL	VL	L	L	Partially to fully reversible	Unlikely	Yes

Impact	Alternative	Consequence			Probability	Significance	Degree to which impact:		
		Intensity	Extent	Duration			Can be reversed	Causes irreplaceable loss	Can be avoided / managed / mitigated
<b>1.5 Heritage</b>									
Loss of or damage to unknown heritage resources	All alternatives	M	VL	VH	VL	L	Irreversible	Possible	Yes
<b>1.6 Land Tenure</b>									
Change in land tenure	All alternatives	No impact							
<b>1.7 Land use</b>									
Preclusion of other land uses	Sites determined in consultation with landowner (as proposed)	M	VL	VL	L	L	Fully reversible	Unlikely	Yes
	Sites determined without consultation (not proposed)	H	VL	VL	M	M	Fully reversible	Unlikely	Yes
<b>1.8 Damage to infrastructure</b>									
Accidental damage during core drilling	All alternatives	VL	VL	VL	L	L	Fully reversible	Unlikely	Yes
<b>1.9 Noise</b>									
Increased noise levels may cause disturbances and nuisance to nearby receptors	Sites determined in consultation with landowner (as proposed)	VL	VL	VL	VL	VL	Fully reversible	Unlikely	Yes
	Sites determined without consultation (not proposed)	M	M	VL	M	M	Fully reversible	Unlikely	Yes
<b>1.10 Air quality</b>									
Dust and vehicle emissions	All alternatives	L	VL	VL	L	L	Fully reversible	Unlikely	Yes
Escape or release of gas from exploration boreholes	Plug bore / cap after drilling (as proposed)	VL	VL	VL	VL	VL	Partially reversible	Unlikely	Yes
	No plugging / capping of borehole (not proposed)	H	H	VH	H	VH	Partially reversible	Unlikely	Yes

Impact	Alternative	Consequence			Probability	Significance	Degree to which impact:		
		Intensity	Extent	Duration			Can be reversed	Causes irreplaceable loss	Can be avoided / managed / mitigated
<b>1.11 Landowner security</b>									
Decrease in farm safety and security	All alternatives	L	VL	M	L	L	Fully reversible	Unlikely	Yes
<b>1.12 Contribution to local economy</b>									
Stimulation of economy through jobs and purchase of supplies	All alternatives	VL+	M	VL	L	VL+	N/A	N/A	Yes
<b>2. Aeromagnetic survey</b>									
<b>2.1 Noise</b>									
Increased noise levels may cause disturbances and nuisance to nearby receptors	Survey could take place anywhere within the ER application area	L	VL	VL	M	VL	Fully reversible	None	Yes
<b>3. No-Go alternative</b>									
No core borehole drilling or aeromagnetic surveying	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	NA

## 8 PLAN OF STUDY FOR EIA

This chapter presents the Plan of Study for EIA as required in terms of Section 2(i) of Appendix 2 of GN R982. It describes the nature and extent of further investigations to be conducted by SLR and the specialists in the EIA, and sets out the proposed approach to the EIA process.

### 8.1 ALTERNATIVES TO BE CONSIDERED

The project scope to be considered and assessed in the EIA is the proposed three-year exploration work programme as described in Section 4.5. A summary of the project alternatives that will be considered during the EIA is provided in Section 4.7.

### 8.2 DESCRIPTION OF THE ASPECTS TO BE ASSESSED

The environmental aspects relevant to the anticipated impacts as described in Section 6 will be considered and investigated in the EIA Phase.

### 8.3 PROPOSED SPECIALIST STUDIES

Three specialist studies will be commissioned to address the key issues that require further investigation and detailed assessment, namely ecological, groundwater and heritage. The specialist Terms of Reference for these studies are presented in Section 8.3.1 to 8.3.3 below.

Due to the extent of the ER application area these specialist studies would involve both a desktop analysis of the area and specific site visits to identified drill sites. The general description of the baseline environment in the ER application area will be based on a review and collation of existing information and data, while specific site descriptions and assessments will be undertaken at each identified drill site.

Each specialist will identify and describe the features in their field of expertise relevant to identifying and assessing environmental impacts that may occur as a result of the proposed project. These impacts will then be assessed according to pre-defined rating scales (see Section 8.4). Specialists will also recommend appropriate mitigation or optimisation measures to minimise potential impacts or enhance potential benefits, respectively.

Specialist reports will be structured in terms of Appendix 6 of the EIA Regulations 2014.

#### 8.3.1 ECOLOGICAL ASSESSMENT

Due to the extent of the ER application area this study will involve both a desktop analysis of the area and specific site visits to identified drill sites in order to understand the extent, nature and status of ecological features. The general description of the baseline environment in the ER application area will be based on a review and collation of existing information and data, while specific site descriptions and assessments will be undertaken at each identified drill site.

The specific terms of reference for the Ecological Assessment are as follows:

- Identify, map and describe the extent, nature and status of ecological features (including geology, soil, vegetation and surface water resources), sensitive habitat types (such as ridges, wetlands and rivers),



threatened ecosystems, protected areas, CBAs and other sensitive biophysical areas in the ER area, based on available literature, existing databases (e.g. SANBI, NFEPA and other provincial databases) and fine scale plans for the region;

- Identify any species of special concern (vegetation and fauna) viz. species with conservation status, endemic to the area or threatened species that exist or may exist in the ER application area;
- Identify and investigate ecological / biodiversity processes that could be affected (positively and/or negatively) by the proposed project;
- Visit each of the identified drill sites to identify, describe and map the ecological features; determine the presence of species of concern and identify relevant ecological/biodiversity processes at each site and within the immediate surrounds;
- Ground truth all biodiversity features of high sensitivity (as indicated in existing data) within a 1.5 km radius of the site and delineate the boundaries of all wetlands within this area;
- Develop an ecological sensitivity plan (low, medium and high significance), which defines the potential ecological constraints and no-go areas, as well as map preferred locations and access routes;
- Identify and assess the significance of potential impacts associated with the proposed drilling activities on the ecology and biodiversity (specifically vegetation, fauna and surface water ecology) at each site;
- Identify practicable mitigation measures to reduce any potential negative impacts and indicate how these could be implemented and managed during exploration; and
- Provide guidance for the requirement of any permits or licences (e.g. General Authorisation or Water Use Licence).

### 8.3.2 GROUNDWATER ASSESSMENT

A desktop analysis of the groundwater resources will be undertaken in order to provide understanding of the key groundwater features in the area, which may be affected by the proposed exploration activities. This information will be augmented by data gathered from site visits to identified drill sites and discussions with respective landowners and local water users. The aim will be to identify the groundwater resources within the ER application area and to understand the extent, nature, status and use of these resources at each identified drill site.

The specific terms of reference for the Groundwater Assessment are as follows:

- Identify, map and describe major surface resources and groundwater resources / aquifers in the ER area, based on available literature, existing databases (e.g. National Groundwater Archive and Water Allocation and Registration Management System) and plans and assessments for the region;
- Describe the regional geology and general hydrogeological conditions of the ER application area including the prevailing groundwater levels and quality, known aquifers and their key parameters and classification, and significant registered water users;
- Identify and investigate hydrogeological processes that could be affected (positively and/or negatively) by the proposed project;
- Undertake a hydrocensus of boreholes within a 5 km radius of the identified drill site to identify, describe and map the local hydrogeological features and water uses. Sample and analyse active water production holes within 1 km of the identified drill site and of significance to local users e (water level and quality (SANS 241));
- Describe the hydrogeological conditions and status of the groundwater resources at each identified drill site;
- Develop a hydrogeological sensitivity plan (low, medium and high significance) for each site to define potential hydrogeological constraints and no-go areas;
- Identify and assess the significance of potential impacts associated with the proposed project on the groundwater systems;

- Identify other practicable mitigation measures to reduce any potential negative impacts and indicate how these could be implemented and managed during exploration; and
- Provide guidance for the requirement of any authorisation, permits or licences (e.g. General Authorisation or Water Use Licence).

### 8.3.3 HERITAGE ASSESSMENT

The heritage study will also will involve both a desktop analysis of the general area and specific site visits to identified drill sites in order to understand the extent, nature and status of heritage resources / features. The goal will be provide an understanding of the heritage resources that are known or which have the potential to occur in the region and on identified drill sites. This study will consider, amongst others: rock art; war sites; Late Iron Age and Historical Period settlements (stone walling and graves); Early, Middle and Late Stone Age sites; Historical buildings, transport routes and tree borders; sites related to oral history and living heritage.

The specific terms of reference for the heritage assessment are as follows:

- Identify, map and describe heritage resources (including archaeology, palaeontology and cultural heritage) in the ER area, based on available literature, existing databases and fine scale plans for the region;
- Visit each of the identified drill sites to identify, describe and map the heritage features at each site and within the immediate surrounds;
- Determine the sensitivity and conservation significance of any sites of archaeological, palaeontology or cultural heritage significance potentially affected by the proposed project;
- Develop a heritage sensitivity plan (low, medium and high significance) for each site to describe any constraints relating to identified heritage features;
- Identify and assess the significance of potential impacts associated with the proposed project on the heritage resources / features;
- Identify other practicable mitigation measures to reduce any potential negative impacts and indicate how these could be implemented and managed during exploration; and
- Provide guidance for the requirement of any heritage permits or licences.

## 8.4 METHOD OF ASSESSING IMPACT SIGNIFICANCE

The identification and assessment of environmental impacts is a multi-faceted process, using a combination of quantitative and qualitative descriptions and evaluations. It involves applying scientific measurements and professional judgement to determine the significance of environmental impacts associated with the proposed project. The process involves consideration of, *inter alia*: the purpose and need for the project; views and concerns of I&APs; social and political norms, and general public interest.

### 8.4.1 IDENTIFICATION AND DESCRIPTION OF IMPACTS

Identified impacts will be described in terms of the nature of the impact, compliance with legislation and accepted standards, receptor sensitivity and the significance of the predicted environmental change (before and after mitigation). Mitigation measures may be existing measures or additional measures that were identified through the impact assessment and associated specialist input. The impact rating system considers the confidence level that can be placed on the successful implementation of mitigation.

### 8.4.2 EVALUATION OF IMPACTS AND MITIGATION MEASURES

The proposed method for the assessment of environmental impacts is set out in Table 8-1 below. This assessment methodology considers the following rating scales when assessing potential impacts (before and after mitigation):

- Consequence, which is a function of:
  - > the intensity of impacts (including the nature of impacts and the degree to which impacts may cause irreplaceable loss of resources);
  - > the extent of the impact;
  - > the duration of the impact;
- Probability of the impact occurring;
- Reversibility of the impact; and
- Degree to which the impact can be mitigated.

**TABLE 8-1: CRITERIA FOR ASSESSING IMPACTS**

Notes: (1) Part A provides the definition for determining impact consequence (combining intensity, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequence and significance are determined from Part B and C. The interpretation of the impact significance is given in Part D.  
(2) VH = very high, H = high, M= medium, L= low and VL= very low and + denotes a positive impact.

PART A: DEFINITION AND CRITERIA	
<b>Definition of SIGNIFICANCE</b>	<b>Significance = consequence x probability</b>
<b>Definition of CONSEQUENCE</b>	<b>Consequence is a function of intensity, spatial extent and duration</b>
<b>Criteria for ranking of the INTENSITY of environmental impacts</b>	<b>VH</b> Severe change, disturbance or degradation. Associated with severe consequences. May result in severe illness, injury or death. Targets, limits and thresholds of concern continually exceeded. Substantial intervention will be required. Vigorous/widespread community mobilisation against project can be expected. May result in legal action if impact occurs.
	<b>H</b> Prominent change, disturbance or degradation. Associated with real and substantial consequences. May result in illness or injury. Targets, limits and thresholds of concern regularly exceeded. Will definitely require intervention. Threats of community action. Regular complaints can be expected when the impact takes place.
	<b>M</b> Moderate change, disturbance or discomfort. Associated with real but not substantial consequences. Targets, limits and thresholds of concern may occasionally be exceeded. Likely to require some intervention. Occasional complaints can be expected.
	<b>L</b> Minor (Slight) change, disturbance or nuisance. Associated with minor consequences or deterioration. Targets, limits and thresholds of concern rarely exceeded. Require only minor interventions or clean-up actions. Sporadic complaints could be expected.
	<b>VL</b> Negligible change, disturbance or nuisance. Associated with very minor consequences or deterioration. Targets, limits and thresholds of concern never exceeded. No interventions or clean-up actions required. No complaints anticipated.
	<b>VL+</b> Negligible change or improvement. Almost no benefits. Change not measurable/will remain in the current range.
	<b>L+</b> Minor change or improvement. Minor benefits. Change not measurable/will remain in the current range. Few people will experience benefits.
	<b>M+</b> Moderate change or improvement. Real but not substantial benefits. Will be within or marginally better than the current conditions. Small number of people will experience benefits.
	<b>H+</b> Prominent change or improvement. Real and substantial benefits. Will be better than current conditions. Many people will experience benefits. General community support.
	<b>VH+</b> Substantial, large-scale change or improvement. Considerable and widespread benefit. Will be much better than the current conditions. Favourable publicity and/or widespread support expected.

<b>Criteria for ranking the DURATION of impacts</b>	<b>VL</b>	Very short, always less than a year.
	<b>L</b>	Short-term, occurs for more than 1 but less than 5 years.
	<b>M</b>	Medium-term, 5 to 10 years.
	<b>H</b>	Long term, between 10 and 20 years. (Likely to cease at the end of the operational life of the activity)
	<b>VH</b>	Very long, permanent, +20 years (Irreversible. Beyond closure)
<b>Criteria for ranking the EXTENT of impacts</b>	<b>VL</b>	A portion of the site.
	<b>L</b>	Whole site.
	<b>M</b>	Beyond the site boundary, affecting immediate neighbours
	<b>H</b>	Local area, extending far beyond site boundary.
	<b>VH</b>	Regional/National

**PART B: DETERMINING CONSEQUENCE**

**INTENSITY = VL**

<b>DURATION</b>	Very long	<b>VH</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>High</b>
	Long term	<b>H</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>
	Medium term	<b>M</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>
	Short term	<b>L</b>	<b>Very Low</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>
	Very short	<b>VL</b>	<b>Very Low</b>	<b>Low</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>

**INTENSITY = L**

<b>DURATION</b>	Very long	<b>VH</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>
	Long term	<b>H</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>High</b>
	Medium term	<b>M</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>
	Short term	<b>L</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>
	Very short	<b>VL</b>	<b>Very Low</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>

**INTENSITY = M**

<b>DURATION</b>	Very long	<b>VH</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>Very High</b>
	Long term	<b>H</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>
	Medium term	<b>M</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>High</b>
	Short term	<b>L</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>
	Very short	<b>VL</b>	<b>Very Low</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>

**INTENSITY = H**

<b>DURATION</b>	Very long	<b>VH</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>Very High</b>	<b>Very High</b>
	Long term	<b>H</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>Very High</b>
	Medium term	<b>M</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>
	Short term	<b>L</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>High</b>
	Very short	<b>VL</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>

**INTENSITY = VH**

<b>DURATION</b>	Very long	<b>VH</b>	<b>High</b>	<b>High</b>	<b>Very High</b>	<b>Very High</b>	<b>Very High</b>
	Long term	<b>H</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>Very High</b>	<b>Very High</b>
	Medium term	<b>M</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>Very High</b>
	Short term	<b>L</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>
	Very short	<b>VL</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>High</b>

	<b>VL</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>VH</b>
	A portion of the site	Whole site	Beyond the site boundary, affecting immediate neighbours	Local area, extending far beyond site boundary	Regional / National
	<b>EXTENT</b>				

PART C: DETERMINING SIGNIFICANCE							
PROBABILITY (of exposure to impacts)	Definite / Continuous	VH	Medium	High	High	Very High	Very High
	Probable	H	Medium	Medium	High	High	Very High
	Possible / Frequent	M	Low	Medium	Medium	High	High
	Conceivable	L	Low	Low	Medium	Medium	High
	Unlikely / Improbable	VL	Very Low	Low	Low	Medium	Medium
			VL	L	M	H	VH
CONSEQUENCE							

PART D: INTERPRETATION OF SIGNIFICANCE	
Significance	Decision guideline
Very High	Potential fatal flaw unless mitigated to lower significance.
High	It must have an influence on the decision. Substantial mitigation will be required.
Medium	It should have an influence on the decision. Mitigation will be required.
Low	Unlikely that it will have a real influence on the decision. Limited mitigation is likely to be required.
Very Low	It will not have an influence on the decision. Does not require any mitigation

## 8.5 CONSULTATION PROCESS DURING EIA PHASE

### 8.5.1 CONSULTATION WITH THE COMPETENT AUTHORITY

Any conditions attached to the acceptance of the Scoping Report will be implemented in the EIA process. If requested, a site visit and meeting shall be held with the PASA (as the competent authority).

The EIR (including EMPr) will be submitted to PASA in both draft and final formats. Opportunities for consultation and participation in the EIA process are shown in Table 8-2.

### 8.5.2 PUBLIC PARTICIPATION PROCESS DURING THE EIA PHASE

A description of the tasks that will be undertaken during the EIA Phase, with specific reference to the opportunities for consultation and participation for I&APs is detailed below and shown in Table 8-2.

#### 8.5.2.1 Notification of I&APs

All I&APs registered on the project database will notified of relevant events in the EIA process via electronic mail, post and bulk SMS. This will include when the EIA/EMP reports are available for public review; invitations to possible public feedback meetings/open days; and notification of the authority decision.

#### 8.5.2.2 Information to be provided to I&APs

The EIR (including specialist studies and EMPr) will be released for a 30-day review and comment period. The following tasks will be undertaken in order to notify I&APs of the release of the EIR:

- A notification letter (with an Executive Summary in English and Afrikaans) will be sent to all registered I&APs to inform them of the release of the EIR and where the full report can be reviewed.

- Copies of the full report will be made available on the SLR website and at the following locations:
  - > Frankfort Public Library;
  - > Standerton Public Library;
  - > Cornelia Public Library; and
  - > Vrede Public Library.

During the EIR review and comment period a series of public feedback meetings/open days may be held to present and discuss the findings of the EIA. The need for and usefulness of these meetings will be determined during the EIA process.

Once PASA has issued a decision on the application, I&APs on the project database will be informed accordingly of the decision, the reasons therefor and the fact that an appeal may be lodged in terms of the National Appeals Regulations 2014.

### **8.5.2.3 Details of the engagement process**

The stakeholder engagement process in the EIA Phase will include the following:

- On-going identification and notification of landowners and stakeholders;
- Registration of parties as I&APs on the project database;
- Collation of issues and concerns into a Comments and Responses Report for inclusion in the EIR;
- Possible public meetings/open days to provide feedback on the findings of the EIA;
- Circulation of the EIR for public review (30 days);
- Executive Summaries will be made available in English and Afrikaans.
- Notification of I&APs on the database of the decision and appeal process.

## **8.6 INTEGRATION AND ASSESSMENT**

The specialist findings, recommendations and other relevant information will be integrated into an EIR. The full specialist studies will be included as appendices to the EIR.

## **8.7 MEASURES TO AVOID, REVERSE, MITIGATE OR MANAGE IDENTIFIED IMPACTS**

A draft EMPr will be compiled and included as an appendix to the EIR. The EMPr will be structured in terms of Appendix 5 to the EIA Regulations 2014. The EMPr will provide recommendations on how to select, establish, operate, maintain and close the exploration activities throughout all relevant phases of the exploration activities. The aim of the EMPr will be to ensure that the project activities are managed to avoid or reduce potential negative environmental impacts and enhance potential positive environmental impacts. The EMPr will detail the impact management objectives, outcomes and actions as required, the responsibility for implementation and the schedule and timeframe. Requirements for monitoring of environmental aspects, as well as compliance monitoring and reporting, will also be detailed. The EMPr will also include the required environmental awareness plan.

If approved by the relevant authorities, the provisions of the EMPr would be legally binding on the project applicant and all its contractors and suppliers.

## 8.8 DESCRIPTION OF TASKS AND INDICATIVE TIMING OF THE EIA PHASE

The EIA Phase has been developed to ensure that it complies with Section 23 of GN R982 and in particular Appendices 4 and 5 to the EIA Regulations 2014. The various tasks / activities (including the indicative timing thereof) that will be undertaken during the EIA Phase are described in Table 8-2.

**TABLE 8-2: KEY TASKS (AND TIMING) OF THE EIA PHASE**

Task No.	EAP activity	Indicative Schedule	Opportunities for consultation and participation
1	<ul style="list-style-type: none"> <li>Ongoing consultation, particularly with directly affected landowners.</li> </ul>	Jan - Jun 2017	✓
2	<ul style="list-style-type: none"> <li>Manage specialist activities and receive inputs for EIR.</li> <li>Internal review specialist studies.</li> </ul>	Jan - Mar 2017	
3	<ul style="list-style-type: none"> <li>Assess environmental impacts and identify management measures.</li> <li>Compile EIR and EMPr.</li> </ul>	Feb - Apr 2017	
4	<ul style="list-style-type: none"> <li>Release EIR to I&amp;APs for 30-day comment period.</li> <li>Possible feedback meetings / open days.</li> </ul>	Apr 2017	✓ Comments on EIR to be sent to SLR.
5	<ul style="list-style-type: none"> <li>Assimilate comments.</li> <li>Finalise EIR and EMPr.</li> </ul>	Apr and May 2017	
6	<ul style="list-style-type: none"> <li>Submit updated EIR to PASA (within 106 days from acceptance of Scoping Report).</li> </ul>	Jun 2017	
7	<ul style="list-style-type: none"> <li>Notify I&amp;APs of authority decision (which must be made within 107 days of submission of EIR) and associated appeal process.</li> </ul>	Sep 2017	✓ Appeals to be sent to the Minister.



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**APPENDIX 1: CO-ORDINATES OF THE EXPLORATION RIGHT APPLICATION AREA**

**ER APPLICATION AREA CO-ORDINATES:**

No.	Latitude	Longitude
0	26° 58' 37.08" S	29° 2' 56.45" E
1	26° 58' 43.10" S	29° 2' 57.65" E
2	26° 58' 42.65" S	29° 3' 1.05" E
3	26° 58' 43.61" S	29° 3' 1.15" E
4	26° 58' 41.49" S	29° 4' 21.69" E
5	26° 58' 41.43" S	29° 4' 45.00" E
6	26° 59' 21.15" S	29° 4' 16.59" E
7	26° 59' 30.37" S	29° 5' 23.29" E
8	26° 59' 30.82" S	29° 5' 26.57" E
9	26° 59' 30.83" S	29° 5' 26.61" E
10	26° 59' 32.55" S	29° 5' 35.70" E
11	26° 59' 37.09" S	29° 6' 6.00" E
12	26° 59' 39.55" S	29° 6' 22.39" E
13	26° 59' 45.31" S	29° 7' 0.82" E
14	26° 59' 45.33" S	29° 7' 0.98" E
15	26° 59' 54.66" S	29° 8' 5.19" E
16	26° 58' 39.25" S	29° 9' 9.84" E
17	26° 59' 2.02" S	29° 9' 19.59" E
18	26° 59' 28.56" S	29° 9' 30.47" E
19	26° 59' 40.37" S	29° 9' 35.65" E
20	27° 0' 2.03" S	29° 9' 45.14" E
21	27° 0' 24.30" S	29° 9' 54.86" E
22	27° 1' 31.34" S	29° 10' 23.81" E
23	27° 1' 33.15" S	29° 10' 24.38" E
24	27° 1' 33.65" S	29° 10' 24.12" E
25	27° 1' 34.03" S	29° 10' 26.83" E
26	27° 1' 35.08" S	29° 10' 30.21" E
27	27° 1' 57.69" S	29° 10' 27.52" E
28	27° 4' 13.08" S	29° 10' 4.29" E
29	27° 7' 29.02" S	29° 10' 55.03" E
30	27° 5' 59.59" S	29° 13' 50.12" E
31	27° 8' 21.87" S	29° 16' 40.95" E
32	27° 8' 51.02" S	29° 18' 8.67" E
33	27° 8' 56.55" S	29° 18' 32.78" E
34	27° 9' 0.39" S	29° 18' 45.43" E
35	27° 9' 5.93" S	29° 19' 1.41" E
36	27° 9' 18.78" S	29° 19' 40.95" E
37	27° 9' 26.54" S	29° 20' 6.95" E
38	27° 9' 34.47" S	29° 20' 39.20" E
39	27° 9' 37.50" S	29° 20' 51.54" E
40	27° 9' 44.08" S	29° 21' 25.46" E
41	27° 9' 44.39" S	29° 21' 27.17" E
42	27° 10' 6.36" S	29° 22' 58.64" E

No.	Latitude	Longitude
43	27° 10' 39.67" S	29° 22' 58.75" E
44	27° 11' 19.04" S	29° 22' 58.40" E
45	27° 11' 21.63" S	29° 22' 58.52" E
46	27° 12' 5.07" S	29° 22' 58.39" E
47	27° 13' 36.43" S	29° 21' 42.93" E
48	27° 13' 51.06" S	29° 19' 56.46" E
49	27° 13' 51.31" S	29° 19' 56.63" E
50	27° 13' 51.82" S	29° 19' 57.07" E
51	27° 13' 52.27" S	29° 19' 57.60" E
52	27° 13' 52.70" S	29° 19' 58.18" E
53	27° 13' 53.10" S	29° 19' 58.92" E
54	27° 13' 53.53" S	29° 19' 59.88" E
55	27° 13' 53.65" S	29° 20' 0.15" E
56	27° 13' 53.90" S	29° 20' 1.06" E
57	27° 13' 53.99" S	29° 20' 1.42" E
58	27° 13' 54.11" S	29° 20' 1.87" E
59	27° 13' 54.18" S	29° 20' 2.09" E
60	27° 13' 54.13" S	29° 20' 2.31" E
61	27° 13' 54.14" S	29° 20' 2.67" E
62	27° 13' 54.27" S	29° 20' 2.98" E
63	27° 13' 54.36" S	29° 20' 3.14" E
64	27° 13' 54.38" S	29° 20' 3.48" E
65	27° 13' 54.50" S	29° 20' 4.25" E
66	27° 13' 54.58" S	29° 20' 4.94" E
67	27° 13' 54.61" S	29° 20' 5.30" E
68	27° 13' 54.73" S	29° 20' 5.88" E
69	27° 13' 54.78" S	29° 20' 6.69" E
70	27° 13' 54.82" S	29° 20' 7.19" E
71	27° 13' 54.84" S	29° 20' 7.55" E
72	27° 13' 54.88" S	29° 20' 8.01" E
73	27° 13' 54.93" S	29° 20' 8.73" E
74	27° 13' 54.90" S	29° 20' 9.16" E
75	27° 13' 54.99" S	29° 20' 9.32" E
76	27° 13' 55.17" S	29° 20' 9.67" E
77	27° 13' 55.28" S	29° 20' 9.90" E
78	27° 13' 55.58" S	29° 20' 10.13" E
79	27° 13' 56.22" S	29° 20' 10.44" E
80	27° 13' 56.62" S	29° 20' 10.47" E
81	27° 13' 56.84" S	29° 20' 10.46" E
82	27° 13' 57.01" S	29° 20' 10.42" E
83	27° 13' 57.07" S	29° 20' 10.33" E
84	27° 13' 57.45" S	29° 20' 10.33" E
85	27° 13' 57.86" S	29° 20' 10.30" E

No.	Latitude	Longitude
86	27° 13' 58.27" S	29° 20' 10.14" E
87	27° 13' 59.04" S	29° 20' 9.87" E
88	27° 13' 59.73" S	29° 20' 9.78" E
89	27° 14' 0.07" S	29° 20' 9.79" E
90	27° 14' 0.78" S	29° 20' 10.00" E
91	27° 14' 1.50" S	29° 20' 10.24" E
92	27° 14' 2.11" S	29° 20' 10.72" E
93	27° 14' 3.11" S	29° 20' 11.69" E
94	27° 14' 3.64" S	29° 20' 12.42" E
95	27° 14' 3.75" S	29° 20' 12.66" E
96	27° 14' 3.71" S	29° 20' 12.72" E
97	27° 14' 3.66" S	29° 20' 12.78" E
98	27° 14' 3.84" S	29° 20' 13.26" E
99	27° 14' 4.08" S	29° 20' 14.03" E
100	27° 14' 4.23" S	29° 20' 14.53" E
101	27° 14' 4.34" S	29° 20' 15.07" E
102	27° 14' 4.38" S	29° 20' 15.48" E
103	27° 14' 4.39" S	29° 20' 15.66" E
104	27° 14' 4.41" S	29° 20' 15.85" E
105	27° 14' 4.48" S	29° 20' 16.12" E
106	27° 14' 4.50" S	29° 20' 16.31" E
107	27° 14' 4.67" S	29° 20' 16.57" E
108	27° 14' 4.94" S	29° 20' 16.94" E
109	27° 14' 5.13" S	29° 20' 17.07" E
110	27° 14' 5.25" S	29° 20' 17.16" E
111	27° 14' 5.42" S	29° 20' 17.25" E
112	27° 14' 5.79" S	29° 20' 17.29" E
113	27° 14' 6.23" S	29° 20' 17.21" E
114	27° 14' 6.87" S	29° 20' 16.87" E
115	27° 14' 7.44" S	29° 20' 16.44" E
116	27° 14' 7.80" S	29° 20' 15.95" E
117	27° 14' 8.08" S	29° 20' 15.38" E
118	27° 14' 8.14" S	29° 20' 15.11" E
119	27° 14' 8.10" S	29° 20' 14.74" E
120	27° 14' 7.83" S	29° 20' 13.72" E
121	27° 14' 7.19" S	29° 20' 12.04" E
122	27° 14' 6.75" S	29° 20' 11.03" E
123	27° 14' 6.70" S	29° 20' 10.69" E
124	27° 14' 6.73" S	29° 20' 10.14" E
125	27° 14' 7.09" S	29° 20' 9.42" E
126	27° 14' 7.81" S	29° 20' 8.61" E
127	27° 14' 8.54" S	29° 20' 7.87" E
128	27° 14' 8.63" S	29° 20' 7.67" E

No.	Latitude	Longitude
129	27° 14' 8.85" S	29° 20' 7.31" E
130	27° 14' 9.95" S	29° 20' 5.50" E
131	27° 14' 10.53" S	29° 20' 4.74" E
132	27° 14' 10.81" S	29° 20' 4.46" E
133	27° 14' 11.20" S	29° 20' 4.26" E
134	27° 14' 11.59" S	29° 20' 4.10" E
135	27° 14' 11.85" S	29° 20' 4.09" E
136	27° 14' 12.17" S	29° 20' 4.06" E
137	27° 14' 12.37" S	29° 20' 4.06" E
138	27° 14' 12.74" S	29° 20' 4.09" E
139	27° 14' 13.06" S	29° 20' 4.13" E
140	27° 14' 13.55" S	29° 20' 4.16" E
141	27° 14' 13.71" S	29° 20' 4.19" E
142	27° 14' 14.44" S	29° 20' 4.36" E
143	27° 14' 15.46" S	29° 20' 4.71" E
144	27° 14' 15.98" S	29° 20' 4.91" E
145	27° 14' 16.23" S	29° 20' 5.02" E
146	27° 14' 17.04" S	29° 20' 5.29" E
147	27° 14' 17.43" S	29° 20' 5.45" E
148	27° 14' 17.75" S	29° 20' 5.56" E
149	27° 14' 18.57" S	29° 20' 5.93" E
150	27° 14' 18.97" S	29° 20' 6.08" E
151	27° 14' 19.46" S	29° 20' 6.25" E
152	27° 14' 19.86" S	29° 20' 6.39" E
153	27° 14' 20.76" S	29° 20' 6.78" E
154	27° 14' 21.04" S	29° 20' 6.85" E
155	27° 14' 21.32" S	29° 20' 6.91" E
156	27° 14' 21.57" S	29° 20' 6.99" E
157	27° 14' 21.97" S	29° 20' 7.10" E
158	27° 14' 22.24" S	29° 20' 7.19" E
159	27° 14' 22.63" S	29° 20' 7.18" E
160	27° 14' 23.20" S	29° 20' 7.07" E
161	27° 14' 23.39" S	29° 20' 7.03" E
162	27° 14' 23.96" S	29° 20' 6.62" E
163	27° 14' 24.77" S	29° 20' 5.85" E
164	27° 14' 25.09" S	29° 20' 5.37" E
165	27° 14' 25.28" S	29° 20' 5.04" E
166	27° 14' 25.53" S	29° 20' 4.54" E
167	27° 14' 25.73" S	29° 20' 4.13" E
168	27° 14' 25.95" S	29° 20' 3.77" E
169	27° 14' 26.20" S	29° 20' 3.41" E
170	27° 14' 26.38" S	29° 20' 3.15" E
171	27° 14' 26.54" S	29° 20' 2.90" E
172	27° 14' 26.74" S	29° 20' 2.78" E
173	27° 14' 26.95" S	29° 20' 2.59" E

No.	Latitude	Longitude
174	27° 14' 27.19" S	29° 20' 2.28" E
175	27° 14' 27.60" S	29° 20' 2.00" E
176	27° 14' 28.09" S	29° 20' 1.60" E
177	27° 14' 28.42" S	29° 20' 1.31" E
178	27° 14' 29.02" S	29° 20' 0.77" E
179	27° 14' 29.72" S	29° 20' 0.02" E
180	27° 14' 29.85" S	29° 20' 0.03" E
181	27° 14' 30.87" S	29° 20' 4.93" E
182	27° 14' 23.91" S	29° 20' 46.66" E
183	27° 14' 18.93" S	29° 21' 43.98" E
184	27° 14' 22.48" S	29° 22' 8.04" E
185	27° 14' 20.86" S	29° 22' 23.38" E
186	27° 14' 17.06" S	29° 22' 30.19" E
187	27° 14' 9.16" S	29° 22' 48.07" E
188	27° 14' 6.05" S	29° 23' 10.27" E
189	27° 14' 6.49" S	29° 24' 0.64" E
190	27° 14' 10.91" S	29° 24' 20.96" E
191	27° 14' 23.43" S	29° 24' 43.02" E
192	27° 14' 36.14" S	29° 25' 19.39" E
193	27° 14' 54.46" S	29° 26' 2.54" E
194	27° 15' 17.06" S	29° 26' 35.44" E
195	27° 15' 39.03" S	29° 26' 59.77" E
196	27° 15' 54.97" S	29° 27' 11.54" E
197	27° 16' 13.43" S	29° 27' 13.29" E
198	27° 16' 39.34" S	29° 27' 0.39" E
199	27° 17' 31.45" S	29° 26' 3.41" E
200	27° 18' 23.94" S	29° 24' 51.40" E
201	27° 18' 46.19" S	29° 25' 6.85" E
202	27° 19' 42.72" S	29° 25' 25.89" E
203	27° 20' 38.56" S	29° 25' 33.03" E
204	27° 20' 38.39" S	29° 25' 32.03" E
205	27° 21' 35.86" S	29° 24' 25.81" E
206	27° 21' 52.10" S	29° 24' 7.52" E
207	27° 22' 17.13" S	29° 23' 39.74" E
208	27° 22' 22.29" S	29° 23' 34.06" E
209	27° 23' 11.37" S	29° 22' 37.76" E
210	27° 23' 14.35" S	29° 22' 25.69" E
211	27° 23' 18.88" S	29° 22' 6.63" E
212	27° 23' 23.76" S	29° 21' 44.79" E
213	27° 23' 31.25" S	29° 21' 13.08" E
214	27° 24' 19.91" S	29° 21' 10.31" E
215	27° 24' 23.15" S	29° 21' 10.19" E
216	27° 24' 26.22" S	29° 21' 9.79" E
217	27° 24' 30.06" S	29° 21' 10.62" E
218	27° 24' 32.64" S	29° 21' 10.98" E

No.	Latitude	Longitude
219	27° 24' 34.50" S	29° 21' 11.12" E
220	27° 24' 36.02" S	29° 21' 10.86" E
221	27° 24' 37.43" S	29° 21' 11.09" E
222	27° 24' 40.54" S	29° 21' 11.18" E
223	27° 24' 43.51" S	29° 21' 12.10" E
224	27° 24' 47.31" S	29° 21' 13.20" E
225	27° 24' 51.07" S	29° 21' 12.04" E
226	27° 24' 54.18" S	29° 21' 10.37" E
227	27° 24' 56.36" S	29° 21' 9.49" E
228	27° 24' 57.66" S	29° 21' 8.72" E
229	27° 25' 1.83" S	29° 21' 8.60" E
230	27° 25' 6.20" S	29° 21' 7.92" E
231	27° 25' 10.26" S	29° 21' 6.04" E
232	27° 25' 12.79" S	29° 21' 4.86" E
233	27° 25' 10.08" S	29° 19' 52.19" E
234	27° 24' 46.92" S	29° 19' 26.77" E
235	27° 24' 45.38" S	29° 18' 56.82" E
236	27° 26' 16.30" S	29° 18' 43.33" E
237	27° 26' 21.11" S	29° 17' 54.85" E
238	27° 26' 24.74" S	29° 17' 8.42" E
239	27° 26' 25.89" S	29° 16' 57.64" E
240	27° 26' 23.02" S	29° 16' 49.34" E
241	27° 25' 29.97" S	29° 14' 32.25" E
242	27° 25' 21.82" S	29° 14' 13.83" E
243	27° 25' 7.75" S	29° 14' 27.65" E
244	27° 24' 58.00" S	29° 14' 20.37" E
245	27° 24' 20.74" S	29° 14' 35.74" E
246	27° 24' 1.39" S	29° 14' 43.76" E
247	27° 24' 3.26" S	29° 14' 17.38" E
248	27° 24' 54.36" S	29° 13' 2.52" E
249	27° 24' 48.76" S	29° 12' 46.88" E
250	27° 24' 27.61" S	29° 12' 45.82" E
251	27° 24' 35.36" S	29° 12' 6.60" E
252	27° 24' 37.14" S	29° 11' 57.82" E
253	27° 24' 35.50" S	29° 11' 21.73" E
254	27° 24' 21.89" S	29° 11' 21.41" E
255	27° 24' 17.70" S	29° 11' 32.51" E
256	27° 24' 15.00" S	29° 11' 52.56" E
257	27° 23' 59.70" S	29° 11' 52.55" E
258	27° 23' 42.94" S	29° 12' 6.09" E
259	27° 23' 36.45" S	29° 12' 5.47" E
260	27° 23' 31.16" S	29° 12' 9.84" E
261	27° 23' 39.72" S	29° 11' 19.74" E
262	27° 23' 49.35" S	29° 11' 20.09" E
263	27° 23' 55.18" S	29° 10' 57.28" E

No.	Latitude	Longitude
264	27° 23' 54.41" S	29° 10' 56.71" E
265	27° 23' 42.66" S	29° 10' 54.71" E
266	27° 23' 43.41" S	29° 10' 49.24" E
267	27° 23' 57.26" S	29° 10' 49.19" E
268	27° 24' 7.53" S	29° 10' 9.11" E
269	27° 24' 1.82" S	29° 10' 7.88" E
270	27° 24' 5.46" S	29° 9' 50.85" E
271	27° 24' 15.08" S	29° 9' 5.92" E
272	27° 23' 44.73" S	29° 9' 10.75" E
273	27° 23' 55.13" S	29° 8' 40.13" E
274	27° 23' 56.17" S	29° 8' 32.57" E
275	27° 23' 46.42" S	29° 7' 52.15" E
276	27° 23' 28.97" S	29° 7' 43.77" E
277	27° 23' 19.93" S	29° 7' 39.51" E
278	27° 23' 12.22" S	29° 5' 57.54" E
279	27° 23' 35.38" S	29° 6' 1.11" E
280	27° 23' 35.94" S	29° 6' 1.19" E
281	27° 23' 54.07" S	29° 5' 5.38" E
282	27° 24' 7.81" S	29° 4' 23.06" E
283	27° 24' 12.78" S	29° 4' 7.74" E
284	27° 24' 22.77" S	29° 3' 36.97" E
285	27° 24' 10.08" S	29° 3' 5.45" E
286	27° 24' 9.82" S	29° 3' 4.76" E
287	27° 24' 0.05" S	29° 2' 38.44" E
288	27° 23' 7.83" S	29° 2' 30.51" E
289	27° 23' 12.52" S	29° 0' 47.68" E
290	27° 22' 55.96" S	29° 0' 46.10" E
291	27° 22' 51.82" S	29° 0' 23.34" E
292	27° 22' 39.57" S	28° 59' 12.12" E
293	27° 22' 24.63" S	28° 58' 10.13" E
294	27° 22' 30.12" S	28° 56' 25.31" E
295	27° 21' 3.54" S	28° 56' 22.28" E
296	27° 20' 59.25" S	28° 56' 1.38" E
297	27° 20' 45.92" S	28° 54' 57.73" E
298	27° 20' 46.73" S	28° 54' 46.96" E
299	27° 20' 46.04" S	28° 54' 7.81" E
300	27° 20' 45.46" S	28° 53' 35.64" E
301	27° 20' 44.34" S	28° 52' 54.97" E
302	27° 20' 32.25" S	28° 52' 10.30" E
303	27° 19' 15.23" S	28° 51' 42.44" E
304	27° 18' 54.74" S	28° 50' 45.65" E
305	27° 18' 38.58" S	28° 50' 43.96" E
306	27° 17' 59.94" S	28° 49' 32.13" E
307	27° 17' 19.98" S	28° 50' 24.68" E
308	27° 17' 13.60" S	28° 49' 30.18" E

No.	Latitude	Longitude
309	27° 17' 7.78" S	28° 48' 33.28" E
310	27° 17' 27.10" S	28° 47' 17.94" E
311	27° 17' 42.20" S	28° 46' 19.02" E
312	27° 17' 44.71" S	28° 46' 7.98" E
313	27° 17' 45.39" S	28° 46' 4.79" E
314	27° 17' 52.54" S	28° 45' 38.33" E
315	27° 18' 3.21" S	28° 44' 56.95" E
316	27° 18' 3.62" S	28° 44' 54.73" E
317	27° 18' 10.87" S	28° 44' 16.39" E
318	27° 18' 15.12" S	28° 43' 54.30" E
319	27° 17' 17.67" S	28° 43' 8.70" E
320	27° 17' 4.32" S	28° 43' 36.41" E
321	27° 16' 37.74" S	28° 41' 32.02" E
322	27° 16' 24.40" S	28° 41' 31.45" E
323	27° 17' 9.77" S	28° 40' 25.91" E
324	27° 16' 40.79" S	28° 40' 22.08" E
325	27° 16' 44.49" S	28° 39' 50.99" E
326	27° 17' 12.22" S	28° 39' 58.46" E
327	27° 17' 17.64" S	28° 38' 41.93" E
328	27° 15' 3.01" S	28° 36' 50.33" E
329	27° 15' 27.95" S	28° 36' 41.84" E
330	27° 16' 55.02" S	28° 36' 12.20" E
331	27° 17' 28.21" S	28° 34' 57.90" E
332	27° 17' 28.23" S	28° 34' 57.84" E
333	27° 17' 27.52" S	28° 34' 55.06" E
334	27° 17' 27.99" S	28° 34' 50.67" E
335	27° 17' 29.58" S	28° 34' 47.88" E
336	27° 17' 35.87" S	28° 34' 48.07" E
337	27° 17' 38.49" S	28° 34' 50.94" E
338	27° 17' 41.53" S	28° 34' 52.64" E
339	27° 17' 44.55" S	28° 34' 52.84" E
340	27° 17' 52.86" S	28° 34' 54.67" E
341	27° 17' 55.69" S	28° 34' 53.53" E
342	27° 17' 58.90" S	28° 34' 50.55" E
343	27° 18' 0.23" S	28° 34' 47.29" E
344	27° 17' 56.87" S	28° 34' 42.90" E
345	27° 17' 55.16" S	28° 34' 38.54" E
346	27° 17' 53.16" S	28° 34' 28.52" E
347	27° 17' 53.66" S	28° 34' 25.90" E
348	27° 17' 55.35" S	28° 34' 21.98" E
349	27° 17' 56.69" S	28° 34' 18.05" E
350	27° 17' 55.25" S	28° 34' 10.54" E
351	27° 17' 54.93" S	28° 34' 7.51" E
352	27° 17' 55.44" S	28° 34' 4.50" E
353	27° 17' 57.87" S	28° 33' 56.91" E

No.	Latitude	Longitude
354	27° 17' 58.51" S	28° 33' 52.97" E
355	27° 17' 58.78" S	28° 33' 49.43" E
356	27° 17' 58.49" S	28° 33' 45.60" E
357	27° 17' 58.48" S	28° 33' 45.35" E
358	27° 17' 57.21" S	28° 33' 43.36" E
359	27° 17' 47.94" S	28° 33' 34.81" E
360	27° 17' 45.84" S	28° 33' 33.47" E
361	27° 17' 43.32" S	28° 33' 32.28" E
362	27° 17' 42.69" S	28° 33' 31.98" E
363	27° 17' 35.11" S	28° 33' 26.87" E
364	27° 17' 31.38" S	28° 33' 24.19" E
365	27° 17' 27.07" S	28° 33' 21.63" E
366	27° 17' 25.05" S	28° 33' 20.78" E
367	27° 17' 25.23" S	28° 33' 19.61" E
368	27° 17' 30.35" S	28° 32' 43.68" E
369	27° 17' 30.42" S	28° 32' 42.33" E
370	27° 17' 30.89" S	28° 32' 42.09" E
371	27° 17' 32.19" S	28° 32' 41.32" E
372	27° 17' 32.68" S	28° 32' 39.75" E
373	27° 17' 31.43" S	28° 32' 36.44" E
374	27° 17' 30.05" S	28° 32' 33.40" E
375	27° 17' 30.44" S	28° 32' 30.51" E
376	27° 17' 31.30" S	28° 32' 26.58" E
377	27° 17' 32.99" S	28° 32' 23.06" E
378	27° 17' 34.43" S	28° 32' 20.45" E
379	27° 17' 36.20" S	28° 32' 19.69" E
380	27° 17' 42.92" S	28° 32' 17.15" E
381	27° 17' 49.66" S	28° 32' 13.17" E
382	27° 17' 55.24" S	28° 32' 7.73" E
383	27° 17' 55.97" S	28° 32' 5.51" E
384	27° 17' 54.64" S	28° 31' 58.65" E
385	27° 17' 58.76" S	28° 31' 47.01" E
386	27° 18' 1.01" S	28° 31' 44.94" E
387	27° 18' 3.02" S	28° 31' 44.31" E
388	27° 18' 5.94" S	28° 31' 45.14" E
389	27° 18' 8.15" S	28° 31' 47.01" E
390	27° 18' 8.58" S	28° 31' 48.14" E
391	27° 18' 52.48" S	28° 31' 2.47" E
392	27° 18' 53.00" S	28° 31' 2.97" E
393	27° 18' 53.92" S	28° 31' 4.09" E
394	27° 18' 55.13" S	28° 31' 5.95" E
395	27° 18' 55.91" S	28° 31' 7.65" E
396	27° 18' 56.04" S	28° 31' 8.00" E
397	27° 18' 56.73" S	28° 31' 17.40" E
398	27° 18' 56.35" S	28° 31' 18.87" E

No.	Latitude	Longitude
399	27° 18' 56.10" S	28° 31' 19.59" E
400	27° 18' 55.83" S	28° 31' 20.30" E
401	27° 18' 55.55" S	28° 31' 21.01" E
402	27° 18' 52.71" S	28° 31' 27.61" E
403	27° 18' 52.30" S	28° 31' 28.69" E
404	27° 18' 51.99" S	28° 31' 29.80" E
405	27° 18' 51.91" S	28° 31' 30.96" E
406	27° 18' 51.92" S	28° 31' 31.72" E
407	27° 18' 52.92" S	28° 31' 39.29" E
408	27° 18' 53.43" S	28° 31' 39.07" E
409	27° 18' 55.90" S	28° 31' 38.71" E
410	27° 18' 58.36" S	28° 31' 38.48" E
411	27° 19' 0.71" S	28° 31' 38.38" E
412	27° 19' 2.84" S	28° 31' 37.23" E
413	27° 19' 25.24" S	28° 31' 19.27" E
414	27° 19' 27.04" S	28° 31' 15.48" E
415	27° 19' 26.87" S	28° 31' 9.69" E
416	27° 19' 25.45" S	28° 31' 6.96" E
417	27° 19' 20.19" S	28° 31' 6.03" E
418	27° 19' 14.69" S	28° 31' 2.50" E
419	27° 19' 11.54" S	28° 30' 58.60" E
420	27° 19' 3.38" S	28° 30' 47.12" E
421	27° 19' 1.35" S	28° 30' 44.26" E
422	27° 18' 57.50" S	28° 30' 36.21" E
423	27° 18' 55.18" S	28° 30' 23.64" E
424	27° 18' 54.23" S	28° 30' 20.32" E
425	27° 18' 52.06" S	28° 30' 16.29" E
426	27° 18' 46.45" S	28° 30' 11.52" E
427	27° 18' 36.47" S	28° 30' 12.08" E
428	27° 18' 31.92" S	28° 30' 11.60" E
429	27° 18' 22.85" S	28° 30' 10.51" E
430	27° 18' 20.27" S	28° 30' 9.79" E
431	27° 18' 15.12" S	28° 30' 7.65" E
432	27° 17' 49.36" S	28° 29' 36.43" E
433	27° 17' 47.79" S	28° 29' 34.20" E
434	27° 17' 38.87" S	28° 29' 16.82" E
435	27° 17' 35.39" S	28° 29' 7.95" E
436	27° 17' 29.36" S	28° 29' 0.51" E
437	27° 17' 20.60" S	28° 29' 47.41" E
438	27° 17' 18.67" S	28° 29' 54.66" E
439	27° 16' 46.21" S	28° 30' 30.70" E
440	27° 16' 35.48" S	28° 30' 38.31" E
441	27° 16' 29.92" S	28° 30' 52.87" E
442	27° 16' 26.97" S	28° 30' 54.22" E
443	27° 16' 24.77" S	28° 30' 56.80" E

No.	Latitude	Longitude
444	27° 16' 21.10" S	28° 31' 2.50" E
445	27° 16' 19.98" S	28° 31' 3.61" E
446	27° 16' 2.80" S	28° 31' 14.12" E
447	27° 15' 50.31" S	28° 31' 5.33" E
448	27° 15' 41.84" S	28° 31' 0.13" E
449	27° 15' 33.02" S	28° 31' 5.51" E
450	27° 15' 33.45" S	28° 31' 13.63" E
451	27° 15' 32.21" S	28° 31' 18.54" E
452	27° 15' 28.96" S	28° 31' 19.58" E
453	27° 15' 30.00" S	28° 31' 27.94" E
454	27° 15' 32.96" S	28° 31' 27.07" E
455	27° 15' 34.41" S	28° 31' 30.91" E
456	27° 15' 33.10" S	28° 31' 30.87" E
457	27° 15' 29.09" S	28° 31' 31.25" E
458	27° 15' 22.96" S	28° 31' 33.22" E
459	27° 15' 7.04" S	28° 31' 38.43" E
460	27° 14' 52.64" S	28° 31' 43.18" E
461	27° 14' 48.33" S	28° 31' 44.28" E
462	27° 14' 46.72" S	28° 31' 45.15" E
463	27° 14' 35.99" S	28° 31' 48.53" E
464	27° 14' 30.96" S	28° 31' 36.18" E
465	27° 14' 13.31" S	28° 31' 45.18" E
466	27° 13' 38.78" S	28° 32' 5.72" E
467	27° 13' 40.82" S	28° 32' 8.02" E
468	27° 13' 57.11" S	28° 32' 26.42" E
469	27° 13' 54.70" S	28° 32' 31.87" E
470	27° 13' 52.11" S	28° 32' 35.50" E
471	27° 13' 49.01" S	28° 32' 38.16" E
472	27° 12' 31.52" S	28° 33' 23.55" E
473	27° 12' 32.10" S	28° 33' 24.61" E
474	27° 12' 18.30" S	28° 33' 33.08" E
475	27° 11' 48.70" S	28° 34' 53.23" E
476	27° 11' 30.27" S	28° 34' 54.53" E
477	27° 11' 29.56" S	28° 35' 19.60" E
478	27° 11' 28.79" S	28° 35' 44.68" E
479	27° 11' 27.69" S	28° 36' 17.47" E
480	27° 11' 29.14" S	28° 36' 45.73" E
481	27° 11' 30.40" S	28° 37' 3.26" E
482	27° 11' 22.07" S	28° 37' 2.14" E
483	27° 11' 19.39" S	28° 37' 1.87" E
484	27° 11' 8.91" S	28° 37' 25.71" E
485	27° 11' 1.50" S	28° 37' 26.55" E
486	27° 10' 59.48" S	28° 37' 9.99" E
487	27° 10' 43.51" S	28° 37' 9.46" E
488	27° 10' 38.56" S	28° 37' 9.13" E

No.	Latitude	Longitude
489	27° 10' 52.49" S	28° 37' 25.88" E
490	27° 10' 40.40" S	28° 37' 57.01" E
491	27° 10' 29.29" S	28° 37' 53.66" E
492	27° 10' 16.71" S	28° 37' 49.66" E
493	27° 10' 9.44" S	28° 39' 6.25" E
494	27° 10' 5.67" S	28° 39' 46.00" E
495	27° 9' 56.58" S	28° 39' 42.41" E
496	27° 9' 45.51" S	28° 40' 14.62" E
497	27° 9' 38.27" S	28° 40' 34.88" E
498	27° 9' 35.24" S	28° 40' 48.23" E
499	27° 9' 27.87" S	28° 40' 54.56" E
500	27° 9' 30.42" S	28° 41' 10.19" E
501	27° 9' 31.94" S	28° 41' 19.19" E
502	27° 9' 23.77" S	28° 41' 12.50" E
503	27° 9' 6.37" S	28° 40' 57.18" E
504	27° 8' 49.10" S	28° 41' 38.44" E
505	27° 8' 57.41" S	28° 41' 43.82" E
506	27° 9' 9.60" S	28° 41' 43.50" E
507	27° 9' 10.92" S	28° 41' 52.56" E
508	27° 9' 11.57" S	28° 41' 56.74" E
509	27° 9' 14.97" S	28° 42' 20.78" E
510	27° 9' 17.97" S	28° 42' 39.96" E
511	27° 9' 22.01" S	28° 43' 7.11" E
512	27° 9' 2.40" S	28° 43' 10.09" E
513	27° 9' 2.09" S	28° 43' 18.30" E
514	27° 8' 56.59" S	28° 43' 28.71" E
515	27° 8' 59.07" S	28° 43' 36.76" E
516	27° 9' 4.27" S	28° 43' 51.19" E
517	27° 9' 19.38" S	28° 43' 48.95" E
518	27° 9' 6.85" S	28° 44' 18.03" E
519	27° 8' 50.64" S	28° 44' 53.72" E
520	27° 8' 42.80" S	28° 45' 5.98" E
521	27° 8' 25.59" S	28° 45' 4.62" E
522	27° 8' 31.65" S	28° 45' 24.27" E
523	27° 8' 34.54" S	28° 45' 34.31" E
524	27° 8' 49.45" S	28° 46' 23.31" E
525	27° 8' 34.05" S	28° 46' 29.68" E
526	27° 8' 28.11" S	28° 46' 14.47" E
527	27° 8' 4.31" S	28° 46' 4.58" E
528	27° 7' 20.02" S	28° 48' 8.93" E
529	27° 8' 4.85" S	28° 48' 28.39" E
530	27° 7' 48.25" S	28° 48' 58.43" E
531	27° 7' 19.28" S	28° 49' 53.09" E
532	27° 7' 16.58" S	28° 49' 59.16" E
533	27° 7' 28.94" S	28° 50' 5.23" E



No.	Latitude	Longitude
534	27° 7' 31.31" S	28° 49' 57.05" E
535	27° 7' 48.34" S	28° 49' 52.10" E
536	27° 7' 53.70" S	28° 50' 12.41" E
537	27° 8' 1.91" S	28° 50' 42.94" E
538	27° 7' 32.55" S	28° 50' 41.31" E
539	27° 7' 29.49" S	28° 51' 1.89" E
540	27° 7' 33.73" S	28° 51' 3.12" E
541	27° 7' 32.41" S	28° 52' 29.00" E
542	27° 7' 26.59" S	28° 52' 44.29" E
543	27° 7' 26.57" S	28° 52' 44.46" E
544	27° 7' 26.34" S	28° 52' 44.55" E
545	27° 7' 26.73" S	28° 52' 45.66" E
546	27° 7' 30.63" S	28° 52' 52.85" E
547	27° 7' 10.31" S	28° 52' 51.47" E
548	27° 7' 8.89" S	28° 52' 51.34" E
549	27° 7' 8.69" S	28° 52' 51.46" E
550	27° 7' 7.86" S	28° 52' 51.75" E
551	27° 7' 7.32" S	28° 52' 51.75" E
552	27° 7' 6.97" S	28° 52' 51.43" E
553	27° 7' 4.46" S	28° 52' 46.95" E
554	27° 7' 4.18" S	28° 52' 46.73" E
555	27° 7' 3.89" S	28° 52' 46.54" E
556	27° 7' 3.16" S	28° 52' 46.43" E
557	27° 7' 2.27" S	28° 52' 46.29" E
558	27° 7' 1.79" S	28° 52' 46.06" E
559	27° 6' 53.28" S	28° 52' 47.40" E
560	27° 6' 52.89" S	28° 52' 48.01" E
561	27° 6' 53.25" S	28° 52' 49.89" E
562	27° 6' 54.41" S	28° 52' 52.62" E
563	27° 6' 54.34" S	28° 52' 53.34" E
564	27° 6' 53.76" S	28° 52' 53.93" E
565	27° 6' 53.52" S	28° 52' 54.10" E
566	27° 6' 52.74" S	28° 52' 54.53" E
567	27° 6' 52.29" S	28° 52' 54.63" E
568	27° 6' 39.90" S	28° 52' 57.89" E
569	27° 6' 39.23" S	28° 52' 57.97" E
570	27° 6' 38.75" S	28° 52' 57.99" E
571	27° 6' 37.96" S	28° 52' 57.91" E
572	27° 6' 37.25" S	28° 52' 57.85" E
573	27° 6' 36.26" S	28° 52' 58.18" E
574	27° 6' 36.02" S	28° 52' 58.28" E
575	27° 6' 34.96" S	28° 52' 58.77" E
576	27° 6' 32.91" S	28° 52' 59.32" E
577	27° 6' 31.37" S	28° 52' 59.27" E
578	27° 6' 30.12" S	28° 52' 59.83" E

No.	Latitude	Longitude
579	27° 6' 29.79" S	28° 53' 1.02" E
580	27° 6' 29.56" S	28° 53' 1.58" E
581	27° 6' 27.59" S	28° 53' 2.27" E
582	27° 6' 26.51" S	28° 53' 1.23" E
583	27° 6' 25.99" S	28° 53' 0.21" E
584	27° 6' 25.69" S	28° 52' 59.65" E
585	27° 6' 24.78" S	28° 52' 58.43" E
586	27° 6' 23.61" S	28° 52' 57.51" E
587	27° 6' 13.11" S	28° 53' 2.82" E
588	27° 6' 13.02" S	28° 53' 2.90" E
589	27° 6' 12.48" S	28° 53' 3.15" E
590	27° 6' 11.50" S	28° 53' 4.58" E
591	27° 6' 11.28" S	28° 53' 5.19" E
592	27° 6' 9.58" S	28° 53' 6.35" E
593	27° 6' 8.05" S	28° 53' 7.04" E
594	27° 6' 7.36" S	28° 53' 7.42" E
595	27° 6' 6.92" S	28° 53' 7.69" E
596	27° 6' 2.49" S	28° 53' 16.87" E
597	27° 6' 4.78" S	28° 53' 18.14" E
598	27° 6' 5.30" S	28° 53' 19.27" E
599	27° 6' 2.90" S	28° 53' 20.79" E
600	27° 6' 1.12" S	28° 53' 20.65" E
601	27° 5' 59.36" S	28° 53' 21.10" E
602	27° 5' 58.95" S	28° 53' 21.51" E
603	27° 5' 57.95" S	28° 53' 27.07" E
604	27° 5' 57.58" S	28° 53' 29.13" E
605	27° 5' 56.73" S	28° 53' 31.34" E
606	27° 5' 56.21" S	28° 53' 32.25" E
607	27° 5' 53.91" S	28° 53' 35.22" E
608	27° 5' 52.73" S	28° 53' 36.49" E
609	27° 5' 47.39" S	28° 54' 24.82" E
610	27° 5' 42.55" S	28° 55' 3.13" E
611	27° 5' 40.88" S	28° 55' 15.92" E
612	27° 4' 58.60" S	28° 55' 38.64" E
613	27° 4' 24.47" S	28° 55' 56.02" E
614	27° 4' 12.19" S	28° 55' 56.33" E
615	27° 3' 29.08" S	28° 55' 55.70" E
616	27° 2' 33.18" S	28° 56' 48.12" E
617	27° 2' 15.35" S	28° 57' 6.54" E
618	27° 1' 29.73" S	28° 57' 17.12" E
619	27° 2' 4.32" S	28° 59' 6.16" E
620	27° 2' 4.56" S	28° 59' 6.85" E
621	27° 2' 3.95" S	28° 59' 7.33" E
622	27° 2' 2.82" S	28° 59' 7.97" E
623	27° 2' 2.29" S	28° 59' 8.19" E

No.	Latitude	Longitude
624	27° 1' 59.38" S	28° 59' 8.67" E
625	27° 1' 57.64" S	28° 59' 8.12" E
626	27° 1' 56.55" S	28° 59' 7.09" E
627	27° 1' 56.23" S	28° 59' 5.09" E
628	27° 1' 55.42" S	28° 59' 3.34" E
629	27° 1' 53.15" S	28° 59' 1.31" E
630	27° 1' 50.66" S	28° 58' 59.16" E
631	27° 1' 25.31" S	28° 59' 21.18" E
632	27° 1' 39.84" S	28° 59' 51.93" E
633	27° 0' 57.60" S	29° 0' 10.86" E
634	27° 0' 45.25" S	29° 0' 16.39" E
635	27° 0' 26.95" S	29° 0' 23.45" E
636	27° 0' 26.97" S	29° 0' 23.49" E
637	27° 0' 30.01" S	29° 0' 29.68" E
638	27° 0' 30.48" S	29° 0' 36.35" E
639	27° 0' 26.97" S	29° 0' 40.83" E
640	27° 0' 28.15" S	29° 0' 42.54" E
641	27° 0' 29.45" S	29° 0' 44.48" E
642	27° 0' 33.38" S	29° 0' 50.05" E
643	27° 0' 34.39" S	29° 0' 52.35" E
644	27° 0' 35.75" S	29° 0' 54.60" E
645	27° 0' 35.94" S	29° 0' 54.92" E
646	27° 0' 37.23" S	29° 0' 57.17" E
647	27° 0' 38.91" S	29° 0' 59.76" E
648	27° 0' 40.70" S	29° 1' 1.80" E
649	27° 0' 42.44" S	29° 1' 3.22" E
650	27° 0' 43.83" S	29° 1' 4.85" E
651	27° 0' 45.07" S	29° 1' 6.54" E
652	27° 0' 47.30" S	29° 1' 9.54" E
653	27° 0' 50.11" S	29° 1' 13.65" E
654	27° 0' 52.49" S	29° 1' 17.97" E
655	27° 0' 55.11" S	29° 1' 21.61" E
656	27° 0' 56.04" S	29° 1' 24.07" E
657	27° 0' 56.53" S	29° 1' 27.20" E
658	27° 0' 56.77" S	29° 1' 28.13" E
659	27° 0' 39.20" S	29° 1' 35.47" E
660	27° 0' 36.95" S	29° 1' 24.29" E
661	27° 0' 17.03" S	29° 1' 32.01" E
662	27° 0' 1.83" S	29° 1' 31.34" E
663	26° 59' 52.54" S	29° 1' 30.74" E
664	26° 59' 48.90" S	29° 1' 40.70" E
665	26° 58' 48.80" S	29° 1' 44.60" E
666	26° 59' 6.48" S	29° 2' 11.05" E
667	26° 58' 28.86" S	29° 2' 20.65" E
668	26° 57' 35.51" S	29° 2' 33.51" E

No.	Latitude	Longitude
669	26° 57' 40.07" S	29° 2' 45.90" E
670	26° 57' 42.81" S	29° 2' 51.72" E
671	26° 58' 36.76" S	29° 3' 0.18" E
672	27° 13' 14.20" S	28° 50' 59.31" E
673	27° 13' 23.56" S	28° 50' 52.88" E
674	27° 13' 25.88" S	28° 50' 54.90" E
675	27° 13' 28.69" S	28° 50' 43.10" E
676	27° 13' 54.71" S	28° 50' 50.81" E
677	27° 13' 54.85" S	28° 50' 50.80" E
678	27° 13' 57.11" S	28° 50' 48.97" E
679	27° 14' 1.21" S	28° 50' 46.08" E
680	27° 14' 2.10" S	28° 50' 47.23" E
681	27° 14' 2.77" S	28° 50' 46.48" E
682	27° 14' 5.43" S	28° 50' 43.38" E
683	27° 14' 6.70" S	28° 50' 43.45" E
684	27° 14' 9.10" S	28° 50' 40.78" E
685	27° 14' 10.44" S	28° 50' 41.13" E
686	27° 14' 12.85" S	28° 50' 38.41" E
687	27° 14' 14.18" S	28° 50' 38.74" E
688	27° 14' 16.57" S	28° 50' 35.99" E
689	27° 14' 24.53" S	28° 50' 45.00" E
690	27° 14' 19.42" S	28° 50' 50.82" E
691	27° 14' 19.45" S	28° 50' 52.14" E
692	27° 14' 22.77" S	28° 50' 55.79" E
693	27° 14' 22.78" S	28° 50' 56.01" E
694	27° 14' 20.56" S	28° 50' 58.56" E
695	27° 14' 20.73" S	28° 51' 2.87" E
696	27° 14' 24.09" S	28° 51' 6.51" E
697	27° 14' 28.35" S	28° 51' 4.38" E
698	27° 14' 30.36" S	28° 51' 6.42" E
699	27° 14' 31.29" S	28° 51' 6.19" E
700	27° 14' 35.15" S	28° 51' 1.34" E
701	27° 14' 38.00" S	28° 51' 4.22" E
702	27° 14' 38.94" S	28° 51' 4.11" E
703	27° 14' 40.40" S	28° 51' 2.27" E
704	27° 14' 43.23" S	28° 51' 5.17" E
705	27° 14' 37.39" S	28° 51' 12.40" E
706	27° 14' 36.99" S	28° 51' 13.15" E
707	27° 14' 32.22" S	28° 51' 19.11" E
708	27° 14' 29.84" S	28° 51' 19.29" E
709	27° 14' 28.99" S	28° 51' 19.10" E
710	27° 14' 25.55" S	28° 51' 19.87" E
711	27° 14' 25.13" S	28° 51' 21.53" E
712	27° 14' 16.57" S	28° 51' 24.09" E
713	27° 14' 16.44" S	28° 51' 22.61" E

No.	Latitude	Longitude
714	27° 14' 17.69" S	28° 51' 19.34" E
715	27° 14' 11.56" S	28° 51' 13.61" E
716	27° 14' 7.55" S	28° 51' 18.17" E
717	27° 14' 5.49" S	28° 51' 17.27" E
718	27° 14' 4.40" S	28° 51' 19.05" E
719	27° 13' 59.15" S	28° 51' 25.02" E
720	27° 13' 54.62" S	28° 51' 20.03" E
721	27° 13' 39.72" S	28° 51' 23.79" E
722	27° 13' 30.29" S	28° 51' 7.18" E
723	27° 13' 26.37" S	28° 51' 9.88" E
724	27° 14' 34.51" S	28° 39' 16.28" E
725	27° 14' 15.76" S	28° 39' 10.64" E
726	27° 13' 52.64" S	28° 39' 3.52" E
727	27° 13' 51.09" S	28° 39' 3.13" E
728	27° 13' 25.40" S	28° 38' 55.17" E
729	27° 13' 21.22" S	28° 38' 53.70" E
730	27° 13' 24.40" S	28° 38' 14.88" E
731	27° 13' 26.60" S	28° 37' 44.42" E
732	27° 13' 30.60" S	28° 36' 52.44" E
733	27° 13' 55.70" S	28° 37' 3.00" E
734	27° 13' 54.08" S	28° 37' 23.15" E
735	27° 14' 12.33" S	28° 37' 30.67" E
736	27° 14' 27.29" S	28° 37' 34.76" E
737	27° 14' 45.21" S	28° 37' 39.55" E
738	27° 14' 44.68" S	28° 37' 45.85" E
739	27° 14' 42.55" S	28° 38' 5.13" E
740	27° 14' 42.26" S	28° 38' 6.49" E

**APPENDIX 2: LIST OF PROPERTIES INCLUDED IN THE EXPLORATION RIGHT APPLICATION AREA**

## LIST OF PROPERTIES INCLUDED IN THE ER APPLICATION AREA

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
1	FRANKFORT RD	AANGENAAM	675	0	F0140000000067500000
2	FRANKFORT RD	AANLEG	76	0	F0140000000007600000
3	FRANKFORT RD	AANLEG	76	1	F0140000000007600001
4	FRANKFORT RD	ADRIANA	1317	0	F01400000000131700000
5	FRANKFORT RD	AFVAL	948	0	F01400000000094800000
6	FRANKFORT RD	ALBERTA	1426	0	F01400000000142600000
7	FRANKFORT RD	ALPHA	1359	0 (RE)	F01400000000135900000
8	FRANKFORT RD	ALPHA	1359	1	F01400000000135900001
9	FRANKFORT RD	ANNASDEEL	1399	1	F01400000000139900001
10	FRANKFORT RD	BARENDINA	1291	0	F01400000000129100000
11	FRANKFORT RD	BERSEBA	1368	0	F01400000000136800000
12	FRANKFORT RD	BETHANY	1230	0	F01400000000123000000
13	FRANKFORT RD	BETHANY	1230	1	F01400000000123000001
14	FRANKFORT RD	BETTA'S RUST	1232	0	F01400000000123200000
15	FRANKFORT RD	BETTY'S DEEL A	533	0	F01400000000053300000
16	FRANKFORT RD	BIESJESPAN	361	0	F01400000000036100000
17	FRANKFORT RD	BIESJESPAN A	303	0	F01400000000030300000
18	FRANKFORT RD	BLOEMTUIN	357	0	F01400000000035700000
19	FRANKFORT RD	BOOMPLAATS	366	0 (RE)	F01400000000036600000
20	FRANKFORT RD	BRAKDAM	304	0	F01400000000030400000
21	FRANKFORT RD	BRAKSPRUIT	109	0	F01400000000010900000
22	FRANKFORT RD	BRAKSPRUIT	109	1	F01400000000010900001
23	FRANKFORT RD	BRISTOL	1370	0 (RE)	F01400000000137000000
24	FRANKFORT RD	BRISTOL	1370	1	F01400000000137000001
25	FRANKFORT RD	BRISTOL	1370	2	F01400000000137000002
26	FRANKFORT RD	BUFFELS VLEIJ	360	1	F01400000000036000001
27	FRANKFORT RD	BURGER'S RUST	107	0	F01400000000010700000
28	FRANKFORT RD	CANOSA	1116	0	F01400000000111600000
29	FRANKFORT RD	CATHARINA'S VLEY	71	0	F01400000000007100000
30	FRANKFORT RD	CHALKFARM	85	0	F01400000000008500000
31	FRANKFORT RD	CHRISTIANA	679	0	F01400000000067900000
32	FRANKFORT RD	CRISTOFFEL'S RUST	253	0	F01400000000025300000
33	FRANKFORT RD	DAMPLAATS	1178	0	F01400000000117800000
34	FRANKFORT RD	DAMPLAATS 'A'	1179	0	F01400000000117900000
35	FRANKFORT RD	DASKLIP	1371	0 (RE)	F01400000000137100000
36	FRANKFORT RD	DASKLIP	1371	2	F01400000000137100002
37	FRANKFORT RD	DE HOEK	389	0	F01400000000038900000
38	FRANKFORT RD	DE RUST	616	0	F01400000000061600000
39	FRANKFORT RD	DE WETS HOOP	62	0	F01400000000006200000
40	FRANKFORT RD	DEUGZAAM	126	0	F01400000000012600000
41	FRANKFORT RD	DONATIO	904	0 (RE)	F01400000000090400000
42	FRANKFORT RD	DORP FRANKFORT	74	0 (RE)	F01400000000007400000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
43	FRANKFORT RD	DRIEHOEK	97	0	F014000000009700000
44	FRANKFORT RD	DRIEHOEK	1058	0	F0140000000105800000
45	FRANKFORT RD	DRIEHOEK	1334	0	F0140000000133400000
46	FRANKFORT RD	DRIEHOEK A	905	0	F0140000000090500000
47	FRANKFORT RD	DUBLIN	879	0	F0140000000087900000
48	FRANKFORT RD	DUBLIN	879	1	F0140000000087900001
49	FRANKFORT RD	DUCKVALLEY	96	0	F0140000000096000000
50	FRANKFORT RD	DUCKVALLEY	96	1	F0140000000096000001
51	FRANKFORT RD	DUCKVALLEY	96	2	F0140000000096000002
52	FRANKFORT RD	DUCKVALLEY	96	3	F0140000000096000003
53	FRANKFORT RD	DUNDEE	1233	0 (RE)	F0140000000123300000
54	FRANKFORT RD	DUNDEE	1233	1	F0140000000123300001
55	FRANKFORT RD	ELEM	391	0 (RE)	F0140000000039100000
56	FRANKFORT RD	ELEM	391	1	F0140000000039100001
57	FRANKFORT RD	ELENORA	877	0	F0140000000087700000
58	FRANKFORT RD	ELENORA	877	1	F0140000000087700001
59	FRANKFORT RD	ERFDEEL	395	0	F0140000000039500000
60	FRANKFORT RD	F.E.	1186	0	F0140000000118600000
61	FRANKFORT RD	FYVIE	579	0	F0140000000057900000
62	FRANKFORT RD	GEDULD	259	0	F0140000000025900000
63	FRANKFORT RD	GELDERLAND	429	0	F0140000000042900000
64	FRANKFORT RD	GELUK	1039	0	F0140000000103900000
65	FRANKFORT RD	GESCHENK	669	0 (RE)	F0140000000066900000
66	FRANKFORT RD	GLASGOW	137	0	F0140000000013700000
67	FRANKFORT RD	GOEDEMOED	1333	0	F0140000000133300000
68	FRANKFORT RD	GOEDGELEGEN	677	0	F0140000000067700000
69	FRANKFORT RD	GOEDGELEGEN	677	1	F0140000000067700001
70	FRANKFORT RD	GOEDGENOEG	603	0 (RE)	F0140000000060300000
71	FRANKFORT RD	GOEDGENOEG	603	1 (RE)	F0140000000060300001
72	FRANKFORT RD	GOEDGENOEG	603	2	F0140000000060300002
73	FRANKFORT RD	GOEDVERWACHT	1095	0	F0140000000109500000
74	FRANKFORT RD	GRAANPUNT A	1098	0	F0140000000109800000
75	FRANKFORT RD	GRAANPUNT B	1099	0	F0140000000109900000
76	FRANKFORT RD	GROENPLAATS	1384	0 (RE)	F0140000000138400000
77	FRANKFORT RD	GROENPLAATS	1384	2	F0140000000138400002
78	FRANKFORT RD	GROENPLAATS	1384	3	F0140000000138400003
79	FRANKFORT RD	GROENPLAATS	1384	4	F0140000000138400004
80	FRANKFORT RD	GROENPLAATS	1384	5	F0140000000138400005
81	FRANKFORT RD	GROOTVLEY	136	0 (RE)	F0140000000013600000
82	FRANKFORT RD	GRUISFONTEIN	514	0	F0140000000051400000
83	FRANKFORT RD	HAMPSTEAD	143	0 (RE)	F0140000000014300000
84	FRANKFORT RD	HELPMEKAAR	763	0	F0140000000076300000
85	FRANKFORT RD	HENNIE'S DEEL	803	0	F0140000000080300000
86	FRANKFORT RD	HERDERDAL	84	0	F014000000008400000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
87	FRANKFORT RD	HIPKIN'S HOPE	1064	0	F0140000000106400000
88	FRANKFORT RD	HIPKINS VALLEY	1083	0	F0140000000108300000
89	FRANKFORT RD	HOLLAND	808	0	F0140000000080800000
90	FRANKFORT RD	HOLPAN	423	0	F0140000000042300000
91	FRANKFORT RD	HOLPAN	423	1	F0140000000042300001
92	FRANKFORT RD	HOOGGELEGEN	89	0	F0140000000008900000
93	FRANKFORT RD	JANNIESDEEL	666	0 (RE)	F0140000000066600000
94	FRANKFORT RD	JANNIESDEEL	666	1 (RE)	F0140000000066600001
95	FRANKFORT RD	JANNIESDEEL	666	2	F0140000000066600002
96	FRANKFORT RD	JOHANNA	1067	0	F0140000000106700000
97	FRANKFORT RD	JOHANNA	1097	0	F0140000000109700000
98	FRANKFORT RD	KATSPRUIT	147	0 (RE)	F0140000000014700000
99	FRANKFORT RD	KATSPRUIT	147	1 (RE)	F0140000000014700001
100	FRANKFORT RD	KATSPRUIT	147	2	F0140000000014700002
101	FRANKFORT RD	KATSPRUIT	147	3	F0140000000014700003
102	FRANKFORT RD	KOELFONTEIN	1084	0	F0140000000108400000
103	FRANKFORT RD	KRONENDAL	581	0	F0140000000058100000
104	FRANKFORT RD	LAASTERUS	130	0	F0140000000013000000
105	FRANKFORT RD	LAASTERUS	130	1	F0140000000013000001
106	FRANKFORT RD	LENIES DEEL	1292	1	F0140000000129200001
107	FRANKFORT RD	LENIES DEEL	1292	2	F0140000000129200002
108	FRANKFORT RD	LIBAU	1114	0 (RE)	F0140000000111400000
109	FRANKFORT RD	LIBAU	1114	1	F0140000000111400001
110	FRANKFORT RD	LONDON	161	0	F0140000000016100000
111	FRANKFORT RD	LONDON	161	1	F0140000000016100001
112	FRANKFORT RD	LONDON	161	2	F0140000000016100002
113	FRANKFORT RD	LONDON	161	3	F0140000000016100003
114	FRANKFORT RD	LOUIS RUST A	927	0	F0140000000092700000
115	FRANKFORT RD	LOUIS RUST B	928	0	F0140000000092800000
116	FRANKFORT RD	LOUIS RUST C	929	0	F0140000000092900000
117	FRANKFORT RD	MAGDALENA	1180	0	F0140000000118000000
118	FRANKFORT RD	MAHEM	269	0	F0140000000026900000
119	FRANKFORT RD	MAHEM	269	1	F0140000000026900001
120	FRANKFORT RD	MANCHESTER	268	0 (RE)	F0140000000026800000
121	FRANKFORT RD	MANCHESTER	268	1	F0140000000026800001
122	FRANKFORT RD	MANCHESTER	268	2	F0140000000026800002
123	FRANKFORT RD	MARGARETHA'S DEEL	1150	0	F0140000000115000000
124	FRANKFORT RD	MARTINUS RUST	764	0	F0140000000076400000
125	FRANKFORT RD	MATHILDE	450	0	F0140000000045000000
126	FRANKFORT RD	MEALIELAND	889	0	F0140000000088900000
127	FRANKFORT RD	MIDDELSPRUIT	665	0 (RE)	F0140000000066500000
128	FRANKFORT RD	MIMMIE	781	0	F0140000000078100000
129	FRANKFORT RD	MIMMIES DEEL	972	0 (RE)	F0140000000097200000
130	FRANKFORT RD	MIMMIES DEEL	972	1	F0140000000097200001

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
131	FRANKFORT RD	MOOIDAM	170	0	F014000000001700000
132	FRANKFORT RD	MOOIWATER	683	0	F014000000006830000
133	FRANKFORT RD	MUTUAL	1104	0	F0140000000011040000
134	FRANKFORT RD	MUTUAL A	1105	0	F0140000000011050000
135	FRANKFORT RD	NAAUWPOORT	179	0	F014000000001790000
136	FRANKFORT RD	NAAUWPOORT	179	1	F014000000001790001
137	FRANKFORT RD	NAAUWPOORT	179	2	F014000000001790002
138	FRANKFORT RD	NAAUWPOORT	179	3	F014000000001790003
139	FRANKFORT RD	NAAUWPOORT	179	4	F014000000001790004
140	FRANKFORT RD	NAPIER	461	0	F014000000004610000
141	FRANKFORT RD	NIEMANDSKRAAL	178	0 (RE)	F014000000001780000
142	FRANKFORT RD	NIEMEYER'S RHU	95	0 (RE)	F014000000000950000
143	FRANKFORT RD	NIEMEYER'S RHU	95	1 (RE)	F014000000000950001
144	FRANKFORT RD	NIEMEYER'S RHU	95	2	F014000000000950002
145	FRANKFORT RD	NIEMEYER'S RHU	95	3	F014000000000950003
146	FRANKFORT RD	NIEMEYER'S RHU	95	4	F014000000000950004
147	FRANKFORT RD	NIEMEYER'S RHU	95	5	F014000000000950005
148	FRANKFORT RD	NIEMEYER'S RHU	95	6	F014000000000950006
149	FRANKFORT RD	NOOITGEDACHT	1111	0	F0140000000011110000
150	FRANKFORT RD	ONGEGUND	973	0 (RE)	F014000000009730000
151	FRANKFORT RD	ONGEGUND	973	1	F014000000009730001
152	FRANKFORT RD	PAARDENFONTEIN	906	0	F014000000009060000
153	FRANKFORT RD	PAARDENFONTEIN	906	1 (RE)	F014000000009060001
154	FRANKFORT RD	PAARDENFONTEIN	906	2	F014000000009060002
155	FRANKFORT RD	PAARDENFONTEIN	906	3	F014000000009060003
156	FRANKFORT RD	PAARDENFONTEIN	906	4	F014000000009060004
157	FRANKFORT RD	PAARDENFONTEIN	906	5	F014000000009060005
158	FRANKFORT RD	PARADYS	1115	0	F0140000000011150000
159	FRANKFORT RD	PERTH	94	0	F014000000000940000
160	FRANKFORT RD	PERTH	94	1	F014000000000940001
161	FRANKFORT RD	PERTH	94	2	F014000000000940002
162	FRANKFORT RD	PERTH	94	3	F014000000000940003
163	FRANKFORT RD	PETRUSHOFF	1110	0	F014000000001110000
164	FRANKFORT RD	PHILIPS PAN	1294	0 (RE)	F0140000000012940000
165	FRANKFORT RD	PHILIPS PAN	1294	1	F0140000000012940001
166	FRANKFORT RD	PHILIPS PAN	1294	2	F0140000000012940002
167	FRANKFORT RD	PUNTJE	123	0	F014000000001230000
168	FRANKFORT RD	PYPSTEEL	281	0 (RE)	F014000000002810000
169	FRANKFORT RD	RAMA	1096	0	F0140000000010960000
170	FRANKFORT RD	RAUTENBACH'S RUST	924	0	F014000000009240000
171	FRANKFORT RD	RUNNYMEDE	197	0	F014000000001970000
172	FRANKFORT RD	RUNNYMEDE	197	1	F014000000001970001
173	FRANKFORT RD	RUNNYMEDE	197	2	F014000000001970002
174	FRANKFORT RD	RUSTIG	1109	0	F0140000000011090000



No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
175	FRANKFORT RD	SAHALI	1436	0	F014000000014360000
176	FRANKFORT RD	SAHALI	1436	1	F014000000014360001
177	FRANKFORT RD	SAHALI	1436	2	F014000000014360002
178	FRANKFORT RD	SCHAPENRUST	534	0	F014000000005340000
179	FRANKFORT RD	SCHRYVERSPOST	98	0	F01400000000980000
180	FRANKFORT RD	SITNA	477	0	F014000000004770000
181	FRANKFORT RD	SMALDEEL	210	0	F014000000002100000
182	FRANKFORT RD	SOPHIE'S DEEL	1295	3	F014000000012950003
183	FRANKFORT RD	SPEBONA	903	0	F014000000009030000
184	FRANKFORT RD	SPITZKOP	289	0	F014000000002890000
185	FRANKFORT RD	STENZIOKO	290	0	F014000000002900000
186	FRANKFORT RD	SUSANNA	483	0	F014000000004830000
187	FRANKFORT RD	SUSANNA	483	1	F014000000004830001
188	FRANKFORT RD	SUSANNA	483	2	F014000000004830002
189	FRANKFORT RD	SWINEMUENDE	780	0	F014000000007800000
190	FRANKFORT RD	TAAIBOSCHSPRUIT	217	1	F014000000002170001
191	FRANKFORT RD	TEKWAAN	925	0 (RE)	F014000000009250000
192	FRANKFORT RD	TEKWAAN	925	1	F014000000009250001
193	FRANKFORT RD	TEMPE	99	0	F01400000000990000
194	FRANKFORT RD	UITKOMS	1149	0	F014000000011490000
195	FRANKFORT RD	UITZOEK	223	0 (RE)	F014000000002230000
196	FRANKFORT RD	VLAAPLAATS	499	0	F014000000004990000
197	FRANKFORT RD	VLAAPLAATS	499	1	F014000000004990001
198	FRANKFORT RD	VOORSPOED	1442	0	F014000000014420000
199	FRANKFORT RD	VOORUITZICHT	804	0	F014000000008040000
200	FRANKFORT RD	WELBEDACHT	1009	0	F014000000010090000
201	FRANKFORT RD	WELGEGUND	241	0 (RE)	F014000000002410000
202	FRANKFORT RD	WELGEGUND	241	1	F014000000002410001
203	FRANKFORT RD	WELGELUK	676	0	F014000000006760000
204	FRANKFORT RD	WELGELUK	676	1	F014000000006760001
205	FRANKFORT RD	WELGELUK	676	2	F014000000006760002
206	FRANKFORT RD	WELGELUK	676	3	F014000000006760003
207	FRANKFORT RD	WELGELUK	1231	0 (RE)	F014000000012310000
208	FRANKFORT RD	WELGELUK	1231	1	F014000000012310001
209	FRANKFORT RD	WELKOM	901	0 (RE)	F014000000009010000
210	FRANKFORT RD	WELKOM	901	1	F014000000009010001
211	FRANKFORT RD	WELKOM	901	10	F014000000009010010
212	FRANKFORT RD	WELKOM	901	2	F014000000009010002
213	FRANKFORT RD	WELKOM	901	3 (RE)	F014000000009010003
214	FRANKFORT RD	WELKOM	901	4	F014000000009010004
215	FRANKFORT RD	WELKOM	901	5 (RE)	F014000000009010005
216	FRANKFORT RD	WELKOM	901	6	F014000000009010006
217	FRANKFORT RD	WELKOM	901	7	F014000000009010007
218	FRANKFORT RD	WELKOM	901	8	F014000000009010008

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
219	FRANKFORT RD	WELKOM	901	9	F0140000000090100009
220	FRANKFORT RD	WILGERIVIERSPRUIT	86	0	F0140000000008600000
221	FRANKFORT RD	WITRAND	504	0	F0140000000050400000
222	FRANKFORT RD	WONDERWAL	1082	0 (RE)	F01400000000108200000
223	FRANKFORT RD	ZAILAND	645	0	F0140000000064500000
224	FRANKFORT RD	ZAAIPLAATS	876	0	F0140000000087600000
225	FRANKFORT RD	ZAAIPLAATS	876	1	F0140000000087600001
226	FRANKFORT RD	ZATELOW	516	0	F0140000000051600000
227	FRANKFORT RD	ZWAAIHOEK	599	0	F0140000000059900000
228	FRANKFORT RD		76	3	F0140000000007600003
229	FRANKFORT RD		665	1	F0140000000066500001
230	FRANKFORT RD		857	10	F0140000000085700010
231	HS	GOEDGEDACHT	38	1	T0HS00000000003800001
232	HS	GOEDGEDACHT	38	11	T0HS00000000003800011
233	HS	GOEDGEDACHT	38	12	T0HS00000000003800012
234	HS	GOEDGEDACHT	38	13	T0HS00000000003800013
235	HS	GOEDGEDACHT	38	14	T0HS00000000003800014
236	HS	GOEDGEDACHT	38	15	T0HS00000000003800015
237	HS	GOEDGEDACHT	38	16	T0HS00000000003800016
238	HS	GOEDGEDACHT	38	2	T0HS00000000003800002
239	HS	GOEDGEDACHT	38	3	T0HS00000000003800003
240	HS	GOEDGEDACHT	38	4	T0HS00000000003800004
241	HS	GOEDGEDACHT	38	5	T0HS00000000003800005
242	HS	GOEDGEDACHT	38	6	T0HS00000000003800006
243	HS	GOEDGEDACHT	38	7	T0HS00000000003800007
244	HS	GOEDGEDACHT	38	8	T0HS00000000003800008
245	HS	GOEDGEDACHT	38	9	T0HS00000000003800009
246	HS	GOEDGEVONDEN	5	0	T0HS00000000000500000
247	HS	GOEDGEVONDEN	5	2	T0HS00000000000500002
248	HS	KAFFERSKRAAL	47	0	T0HS00000000004700000
249	HS	KAFFERSKRAAL	47	2	T0HS00000000004700002
250	HS	KROMDRAAI	39	1	T0HS00000000003900001
251	HS	KROMDRAAI	258	0	T0HS00000000002580000
252	HS	LEEUKUIL	27	1	T0HS00000000002700001
253	HS	LEEUKUIL	27	10	T0HS00000000002700010
254	HS	LEEUKUIL	27	12	T0HS00000000002700012
255	HS	LEEUKUIL	27	14	T0HS00000000002700014
256	HS	LEEUKUIL	27	2	T0HS00000000002700002
257	HS	LEEUKUIL	27	4	T0HS00000000002700004
258	HS	LEEUKUIL	27	5 (RE)	T0HS00000000002700005
259	HS	LEEUKUIL	27	6	T0HS00000000002700006
260	HS	LEEUKUIL	27	7	T0HS00000000002700007
261	HS	LEEUKUIL	27	8	T0HS00000000002700008
262	HS	LEEUKUIL	27	9 (RE)	T0HS00000000002700009

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
263	HS	MISPAH	4	0 (RE)	T0HS0000000000400000
264	HS	MISPAH	4	1	T0HS0000000000400001
265	HS	MISPAH	4	2	T0HS0000000000400002
266	HS	MISPAH	4	3	T0HS0000000000400003
267	HS	MISPAH	4	4	T0HS0000000000400004
268	HS	PIETER FRANCOIS	1	0 (RE)	T0HS0000000000100000
269	HS	PIETER FRANCOIS	1	1	T0HS0000000000100001
270	HS	POORTJE	6	0 (RE)	T0HS0000000000600000
271	HS	POORTJE	6	1	T0HS0000000000600001
272	HS	POORTJE	6	10	T0HS0000000000600010
273	HS	POORTJE	6	2	T0HS0000000000600002
274	HS	POORTJE	6	3	T0HS0000000000600003
275	HS	POORTJE	6	4	T0HS0000000000600004
276	HS	POORTJE	6	5	T0HS0000000000600005
277	HS	POORTJE	6	6	T0HS0000000000600006
278	HS	POORTJE	6	7	T0HS0000000000600007
279	HS	POORTJE	6	9	T0HS0000000000600009
280	HS	POTBERG	30	1	T0HS0000000003000001
281	HS	RIETVLEI	33	1	T0HS0000000003300001
282	HS	RIETVLEI	33	2	T0HS0000000003300002
283	HS	RIETVLEI	33	4	T0HS0000000003300004
284	HS	RUITERSKUIL	25	12	T0HS0000000002500012
285	HS	RUITERSKUIL	25	13	T0HS0000000002500013
286	HS	RUITERSKUIL	25	22	T0HS0000000002500022
287	HS	RUITERSKUIL	25	25 (RE)	T0HS0000000002500025
288	HS	RUITERSKUIL	25	26	T0HS0000000002500026
289	HS	SPAN DE KROON	29	0 (RE)	T0HS0000000002900000
290	HS	SPAN DE KROON	29	1 (RE)	T0HS0000000002900001
291	HS	SPAN DE KROON	29	10	T0HS0000000002900010
292	HS	SPAN DE KROON	29	2 (RE)	T0HS0000000002900002
293	HS	SPAN DE KROON	29	3	T0HS0000000002900003
294	HS	SPAN DE KROON	29	4	T0HS0000000002900004
295	HS	SPAN DE KROON	29	5 (RE)	T0HS0000000002900005
296	HS	SPAN DE KROON	29	6	T0HS0000000002900006
297	HS	SPAN DE KROON	29	7	T0HS0000000002900007
298	HS	SPAN DE KROON	29	8	T0HS0000000002900009
299	HS	STERK FONTEIN	34	0	T0HS0000000003400000
300	HS	STERK FONTEIN	34	1 (RE)	T0HS0000000003400001
301	HS	STERK FONTEIN	34	10	T0HS0000000003400010
302	HS	STERK FONTEIN	34	12	T0HS0000000003400012
303	HS	STERK FONTEIN	34	2	T0HS0000000003400002
304	HS	STERK FONTEIN	34	6	T0HS0000000003400006
305	HS	STERK FONTEIN	34	7	T0HS0000000003400007
306	HS	STERK FONTEIN	34	8	T0HS0000000003400008

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
307	HS	STERKFORTEIN	34	9	T0HS0000000003400009
308	HS	VAALRIVIERSDRIFT	2	0 (RE)	T0HS0000000000200000
309	HS	VAALRIVIERSDRIFT	2	2	T0HS0000000000200002
310	HS	VAALRIVIERSDRIFT	2	3	T0HS0000000000200003
311	HS	VAALRIVIERSDRIFT	2	4	T0HS0000000000200004
312	HS	VAALRIVIERSDRIFT	2	5	T0HS0000000000200005
313	HS	VAALRIVIERSDRIFT	2	6	T0HS0000000000200006
314	HS	VERGENOEG	31	0 (RE)	T0HS0000000003100000
315	HS	VERGENOEG	31	1	T0HS0000000003100001
316	HS	VERGENOEG	31	2	T0HS0000000003100002
317	HS	VERGENOEG	31	3	T0HS0000000003100003
318	HS	VOGELSTRUISPOORT	36	0 (RE)	T0HS0000000003600000
319	HS	VOGELSTRUISPOORT	36	1	T0HS0000000003600001
320	HS	VOGELSTRUISPOORT	36	3 (RE)	T0HS0000000003600003
321	HS	VOGELSTRUISPOORT	36	4 (RE)	T0HS0000000003600004
322	HS	VOGELSTRUISPOORT	36	5	T0HS0000000003600005
323	HS	VOGELSTRUISPOORT	36	6	T0HS0000000003600006
324	HS	VOGELSTRUISPOORT	36	7	T0HS0000000003600007
325	HS	WINKELHAAK	46	1	T0HS0000000004600001
326	HS	WINKELHAAK	46	2	T0HS0000000004600002
327	HS	WINKELHAAK	46	5	T0HS0000000004600005
328	HS	ZWARTKOPJES	3	1	T0HS0000000003000001
329	HS	ZWARTKOPJES	3	2	T0HS0000000003000002
330	HS	ZWARTKOPJES	3	3	T0HS0000000003000003
331	HS	ZWARTKOPJES	3	4 (RE)	T0HS0000000003000004
332	HS	ZWARTKOPJES	3	5	T0HS0000000003000005
333	HS	ZWARTKOPJES	3	6	T0HS0000000003000006
334	HS	ZWARTKOPJES	3	7	T0HS0000000003000007
335	HS		24	18	T0HS0000000002400018
336	HS		25	1	T0HS0000000002500001
337	HS		27	11	T0HS0000000002700011
338	HS		27	3	T0HS0000000002700003
339	HS		29	9	T0HS0000000002900008
340	HS		33	3	T0HS0000000003300003
341	HS		34	4	T0HS0000000003400004
342	HS		36	8	T0HS0000000003600008
343	HS		403	0	T0HS0000000004030000
344	HS		403	10	T0HS0000000004030010
345	HS		403	2	T0HS0000000004030002
346	HS		403	3	T0HS0000000004030003
347	HS		403	8	T0HS0000000004030008
348	VREDE RD	AANDENKING	514	0	F0370000000051400000
349	VREDE RD	AANDENKING	514	1	F0370000000051400001
350	VREDE RD	AANSLUIT	863	0 (RE)	F0370000000086300000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
351	VREDE RD	AANSLUITING	736	0	F0370000000073600000
352	VREDE RD	AANTEEL	798	0 (RE)	F0370000000079800000
353	VREDE RD	AANTEEL	798	1	F0370000000079800001
354	VREDE RD	AANVANG	1268	1	F03700000000126800001
355	VREDE RD	ABERDEEN	1214	0	F03700000000121400000
356	VREDE RD	ACTON HOMES	649	0 (RE)	F03700000000064900000
357	VREDE RD	AFGUNSDAM	1121	0	F03700000000112100000
358	VREDE RD	AFGUNST	19	0 (RE)	F0370000000001900000
359	VREDE RD	AFGUNST	19	1	F0370000000001900001
360	VREDE RD	AGRICOLA	1278	0	F03700000000127800000
361	VREDE RD	ALBANIE	948	0	F03700000000094800000
362	VREDE RD	ALBION	311	0 (RE)	F03700000000031100000
363	VREDE RD	ALETTA	475	1	F03700000000047500001
364	VREDE RD	ALICE	796	0 (RE)	F03700000000079600000
365	VREDE RD	ALICE	796	1	F03700000000079600001
366	VREDE RD	ALLEEN	1129	0	F03700000000112900000
367	VREDE RD	ALPHA	774	0	F03700000000077400000
368	VREDE RD	ALPHA	1099	0	F03700000000109900000
369	VREDE RD	ANNASGIFT	821	0 (RE)	F03700000000082100000
370	VREDE RD	ANNASTROOS	1170	0	F03700000000117000000
371	VREDE RD	ANNIESDALE	865	0	F03700000000086500000
372	VREDE RD	ANNIESDEEL	883	0 (RE)	F03700000000088300000
373	VREDE RD	ANNIESDEEL	883	1	F03700000000088300001
374	VREDE RD	ANTONIE'S RUST	1029	0	F03700000000102900000
375	VREDE RD	ARINDELA	123	0	F03700000000012300000
376	VREDE RD	ASCENT	79	0	F03700000000007900000
377	VREDE RD	ASCENT A	906	0	F03700000000090600000
378	VREDE RD	ASCENT SCHOOL GROUND	817	0	F03700000000081700000
379	VREDE RD	BALLAST PIT	87	0	F03700000000008700000
380	VREDE RD	BALLAST PIT	103	0	F03700000000010300000
381	VREDE RD	BALTIMORE	85	0 (RE)	F03700000000008500000
382	VREDE RD	BALTIMORE	85	1	F03700000000008500001
383	VREDE RD	BALTIMORE	85	2	F03700000000008500002
384	VREDE RD	BALTIMORE	85	3 (RE)	F03700000000008500003
385	VREDE RD	BALTIMORE	85	4	F03700000000008500004
386	VREDE RD	BANKKRAAL	799	0	F03700000000079900000
387	VREDE RD	BARENDINA	568	0 (RE)	F03700000000056800000
388	VREDE RD	BARENDINA	568	1	F03700000000056800001
389	VREDE RD	BEGINSEL	1073	0	F03700000000107300000
390	VREDE RD	BEGINSEL	1115	0	F03700000000111500000
391	VREDE RD	BELLEVUE	1158	0	F03700000000115800000
392	VREDE RD	BERLIN	882	0 (RE)	F03700000000088200000
393	VREDE RD	BEYERS	725	0 (RE)	F03700000000072500000
394	VREDE RD	BEYERS	725	1	F03700000000072500001

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
395	VREDE RD	BLOEMHOF	390	0	F0370000000039000000
396	VREDE RD	BLOEMHOF	390	1	F0370000000039000001
397	VREDE RD	BLOEMHOF	488	0	F0370000000048800000
398	VREDE RD	BLOEMHOF	1130	0	F03700000000113000000
399	VREDE RD	BLOEMHOF	1318	0 (RE)	F03700000000131800000
400	VREDE RD	BLOEMHOF	1318	1	F03700000000131800001
401	VREDE RD	BLOOMFIELD	316	0	F0370000000031600000
402	VREDE RD	BLUEGOMBOSCH	405	0	F0370000000040500000
403	VREDE RD	BLYDE VOORUITZICHT	727	0	F0370000000072700000
404	VREDE RD	BLYDSCHAP	907	0	F0370000000090700000
405	VREDE RD	BLYDSKAP	1035	0	F03700000000103500000
406	VREDE RD	BOOMPIE ALLEEN	1357	0	F03700000000135700000
407	VREDE RD	BOOMPIE ALLEEN	1358	0	F03700000000135800000
408	VREDE RD	BOSCHJES PLAAT	329	0	F0370000000032900000
409	VREDE RD	BOSHOFFSRUST	118	0	F0370000000011800000
410	VREDE RD	BOTHA	125	0 (RE)	F0370000000012500000
411	VREDE RD	BOTHASRUST	547	0 (RE)	F0370000000054700000
412	VREDE RD	BOVENTOP	1055	0	F03700000000105500000
413	VREDE RD	BRAKDAM	1080	0	F0370000000010800000
414	VREDE RD	BRAKFORTEIN	422	0	F0370000000042200000
415	VREDE RD	BRAKFORTEIN	422	1	F0370000000042200001
416	VREDE RD	BRAKHOEK	749	0 (RE)	F0370000000074900000
417	VREDE RD	BRAKVLEI	423	0	F0370000000042300000
418	VREDE RD	BREGGIESVILLE	820	0 (RE)	F0370000000082000000
419	VREDE RD	BREYTENBACH	90	0	F0370000000009000000
420	VREDE RD	BULT FONTEIN	392	0	F0370000000039200000
421	VREDE RD	BULT FONTEIN	392	1	F0370000000039200001
422	VREDE RD	BURHAM	962	0 (RE)	F0370000000096200000
423	VREDE RD	BURHAM	962	1	F0370000000096200001
424	VREDE RD	BURHAM	962	2	F0370000000096200002
425	VREDE RD	BURINGA	791	0	F0370000000079100000
426	VREDE RD	CERES	284	0 (RE)	F0370000000028400000
427	VREDE RD	CHARLIES HOPE	282	0	F0370000000028200000
428	VREDE RD	CHRISTIANA	872	0	F0370000000087200000
429	VREDE RD	CLOCOLAN	1	0 (RE)	F0370000000001000000
430	VREDE RD	CLOVERFIELD	563	0 (RE)	F0370000000056300000
431	VREDE RD	CLOVERFIELD	563	1	F0370000000056300001
432	VREDE RD	CLOVERFIELD	563	2	F0370000000056300002
433	VREDE RD	CLOVERFIELD	563	3	F0370000000056300003
434	VREDE RD	COENRADINA	459	0 (RE)	F0370000000045900000
435	VREDE RD	COENRADINA	459	1	F0370000000045900001
436	VREDE RD	CONCORDIA	908	0	F0370000000090800000
437	VREDE RD	CONSOLATION	337	0 (RE)	F0370000000033700000
438	VREDE RD	CORNELIA	857	0 (RE)	F0370000000085700000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
439	VREDE RD	CORNELIA	857	2	F0370000000085700002
440	VREDE RD	CORNELIA	857	3	F0370000000085700003
441	VREDE RD	CORNELIA	857	4 (RE)	F0370000000085700004
442	VREDE RD	DAERAAD	1342	0	F03700000000134200000
443	VREDE RD	DAM	104	0	F0370000000010400000
444	VREDE RD	DANIELSRUST	993	0	F0370000000099300000
445	VREDE RD	DANKBAAR	1307	0 (RE)	F03700000000130700000
446	VREDE RD	DASPOORT	1280	0	F03700000000128000000
447	VREDE RD	DASSIEKLIP	446	0	F03700000000044600000
448	VREDE RD	DE LA REY	728	0	F03700000000072800000
449	VREDE RD	DE ROTSEN	52	0	F03700000000005200000
450	VREDE RD	DE RUST	317	0	F03700000000031700000
451	VREDE RD	DE WERF	933	0	F03700000000093300000
452	VREDE RD	DE WET	867	0	F03700000000086700000
453	VREDE RD	DEELUIT	346	0 (RE)	F03700000000034600000
454	VREDE RD	DEVONDALE	528	0 (RE)	F03700000000052800000
455	VREDE RD	DIE KOM	1126	0	F03700000000112600000
456	VREDE RD	DIE KRANSE	1174	0	F03700000000117400000
457	VREDE RD	DIEPLAAGTE	1240	0	F03700000000124000000
458	VREDE RD	DINASRUS	1039	0	F03700000000103900000
459	VREDE RD	DONKER POORT	320	1	F03700000000032000001
460	VREDE RD	DONKERHOEK	530	0 (RE)	F03700000000053000000
461	VREDE RD	DONKERHOEK	530	1	F03700000000053000001
462	VREDE RD	DOORNBOOM	1237	0 (RE)	F03700000000123700000
463	VREDE RD	DOORNBOOM	1237	1 (RE)	F03700000000123700001
464	VREDE RD	DOORNBOOM	1237	2	F03700000000123700002
465	VREDE RD	DOORKOP	439	0	F03700000000043900000
466	VREDE RD	DRIEFONTEIN	286	0 (RE)	F03700000000028600000
467	VREDE RD	DRIEHOEK	761	0	F03700000000076100000
468	VREDE RD	DRIEKUIL	332	0 (RE)	F03700000000033200000
469	VREDE RD	DRIEKUIL	332	1	F03700000000033200001
470	VREDE RD	DRILVLEI	368	0 (RE)	F03700000000036800000
471	VREDE RD	DRILVLEI	368	7	F03700000000036800007
472	VREDE RD	DRUKMEKAAR	712	0 (RE)	F03700000000071200000
473	VREDE RD	EBENHAEZER	805	0	F03700000000080500000
474	VREDE RD	EBENHAEZER	909	0	F03700000000090900000
475	VREDE RD	EBENHAEZER	983	0	F03700000000098300000
476	VREDE RD	EBENHAEZER	1193	0	F03700000000119300000
477	VREDE RD	EENDRACHT	419	0	F03700000000041900000
478	VREDE RD	EENSGEVONDEN	134	0	F03700000000013400000
479	VREDE RD	EENSGEVONDEN	647	0	F03700000000064700000
480	VREDE RD	EENSGEVONDEN	1203	0	F03700000000120300000
481	VREDE RD	EENSGEVONDEN	1297	0 (RE)	F03700000000129700000
482	VREDE RD	EIKENHOF	1243	0	F03700000000124300000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
483	VREDE RD	EL-BETHEL	1271	0	F03700000000127100000
484	VREDE RD	EL-BETHEL	1271	1	F03700000000127100001
485	VREDE RD	ELDORADO	740	0	F03700000000074000000
486	VREDE RD	ELDORADO	1117	0	F03700000000111700000
487	VREDE RD	ELIM	926	0	F03700000000092600000
488	VREDE RD	EMBRENSIA	697	0 (RE)	F03700000000069700000
489	VREDE RD	EMMERENTIA	14	0	F0370000000001400000
490	VREDE RD	EMMERENTIA	14	1	F0370000000001400001
491	VREDE RD	EMMERENTIA	531	1	F03700000000053100001
492	VREDE RD	ENERGY	50	0	F03700000000005000000
493	VREDE RD	ERFDEEL	994	0	F03700000000099400000
494	VREDE RD	ERFDEEL	1107	0 (RE)	F03700000000110700000
495	VREDE RD	ERFDEEL	1107	1	F03700000000110700001
496	VREDE RD	ERFDEEL	1113	0	F03700000000111300000
497	VREDE RD	ERFDEEL	1162	0	F03700000000116200000
498	VREDE RD	ERFDEEL	1335	0 (RE)	F03700000000133500000
499	VREDE RD	ERFDEEL	1335	1	F03700000000133500001
500	VREDE RD	ERFDEEL	1335	2	F03700000000133500002
501	VREDE RD	ERFDEEL	1335	3	F03700000000133500003
502	VREDE RD	ERFENIS	938	0	F03700000000093800000
503	VREDE RD	ERGERNIS SPRUIT	433	0	F03700000000043300000
504	VREDE RD	EVENWYD	138	0	F03700000000013800000
505	VREDE RD	FAIRPLAY	279	0	F03700000000027900000
506	VREDE RD	FAIRPLAY	279	1	F03700000000027900001
507	VREDE RD	FRAAI UITZICHT	121	0	F03700000000012100000
508	VREDE RD	FRIKKI'S RUST	810	0	F03700000000081000000
509	VREDE RD	FRIKKI'S RUST	810	1 (RE)	F03700000000081000001
510	VREDE RD	FRIKKI'S RUST	810	2	F03700000000081000002
511	VREDE RD	FRIKKI'S RUST	810	3	F03700000000081000003
512	VREDE RD	GANGERS COTTAGE	88	0	F03700000000008800000
513	VREDE RD	GEDULDSKRAAL	289	0	F03700000000028900000
514	VREDE RD	GEGUND	1313	0	F03700000000131300000
515	VREDE RD	GELUK	325	0	F03700000000032500000
516	VREDE RD	GELUK	325	1 (RE)	F03700000000032500001
517	VREDE RD	GELUK	325	2	F03700000000032500002
518	VREDE RD	GELUK	325	3	F03700000000032500003
519	VREDE RD	GELUK	325	4	F03700000000032500004
520	VREDE RD	GELUKSDEEL	484	0 (RE)	F03700000000048400000
521	VREDE RD	GELUKSDEEL	484	2	F03700000000048400002
522	VREDE RD	GELUKSKOPPIE	1125	0 (RE)	F03700000000112500000
523	VREDE RD	GENOEG	597	0 (RE)	F03700000000059700000
524	VREDE RD	GERT BROERS RUST	860	0	F03700000000086000000
525	VREDE RD	GERTIESGROVE	819	0	F03700000000081900000
526	VREDE RD	GESCHENK	622	0 (RE)	F03700000000062200000



No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
527	VREDE RD	GESCHENK	622	1	F0370000000062200001
528	VREDE RD	GESLAAGD	1005	0	F03700000000100500000
529	VREDE RD	GEWAAG	1184	0 (RE)	F03700000000118400000
530	VREDE RD	GEWAAG	1184	1	F03700000000118400001
531	VREDE RD	GEWAAG	1184	2	F03700000000118400002
532	VREDE RD	GOEDGEDACHT	312	0	F03700000000031200000
533	VREDE RD	GOEDGENOEG	590	0	F03700000000059000000
534	VREDE RD	GOEDGEVONDEN	1071	0	F03700000000107100000
535	VREDE RD	GOEDHEID	306	0 (RE)	F03700000000030600000
536	VREDE RD	GOEDHEID	306	1	F03700000000030600001
537	VREDE RD	GOEDHEID	306	2	F03700000000030600002
538	VREDE RD	GOOD HOPE	603	0	F03700000000060300000
539	VREDE RD	GOOD LUCK	518	0	F03700000000051800000
540	VREDE RD	GOODLAND	701	0	F03700000000070100000
541	VREDE RD	GORDON	1085	0 (RE)	F03700000000108500000
542	VREDE RD	GORDON	1085	1	F03700000000108500001
543	VREDE RD	GORDON	1085	2	F03700000000108500002
544	VREDE RD	GORDON	1085	3	F03700000000108500003
545	VREDE RD	GRAS PLAATS	344	0	F03700000000034400000
546	VREDE RD	GRAS PLAATS	344	1	F03700000000034400001
547	VREDE RD	GRASVLEI	583	0	F03700000000058300000
548	VREDE RD	GREENVILLE	343	0	F03700000000034300000
549	VREDE RD	GROOT GELUK	1244	0	F03700000000124400000
550	VREDE RD	GROOTVLEI	51	0	F03700000000005100000
551	VREDE RD	GROOTVLEI	326	0 (RE)	F03700000000032600000
552	VREDE RD	GROOTVLEI	326	1	F03700000000032600001
553	VREDE RD	GROOTVLEI	326	2	F03700000000032600002
554	VREDE RD	GRUISPLAATS	336	0 (RE)	F03700000000033600000
555	VREDE RD	GUTLAND	578	0	F03700000000057800000
556	VREDE RD	HANNIESDEEL	899	0	F03700000000089900000
557	VREDE RD	HANNOVER	581	0	F03700000000058100000
558	VREDE RD	HAPPY DALE	25	0 (RE)	F03700000000002500000
559	VREDE RD	HARAN	753	0	F03700000000075300000
560	VREDE RD	HARAN	753	1	F03700000000075300001
561	VREDE RD	HARTEBEESTFONTEIN	324	0	F03700000000032400000
562	VREDE RD	HARTINGH	429	0	F03700000000042900000
563	VREDE RD	HEBRON	1199	0	F03700000000119900000
564	VREDE RD	HEELTEVREDEN	485	0 (RE)	F03700000000048500000
565	VREDE RD	HEELTEVREDEN	485	1	F03700000000048500001
566	VREDE RD	HEELTEVREDEN	601	0	F03700000000060100000
567	VREDE RD	HELDERFONTEIN	10	0	F03700000000010000000
568	VREDE RD	HELDERFONTEIN	10	1	F03700000000010000001
569	VREDE RD	HELDERFONTEIN	10	2	F03700000000010000002
570	VREDE RD	HELDERSTROOM	1159	0 (RE)	F03700000000115900000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
571	VREDE RD	HELENA	98	0	F037000000009800000
572	VREDE RD	HELENA	1105	0	F0370000000110500000
573	VREDE RD	HENDRINA	1036	0	F0370000000103600000
574	VREDE RD	HENNIES DEEL	793	0 (RE)	F0370000000079300000
575	VREDE RD	HERINNERING	797	0	F0370000000079700000
576	VREDE RD	HESTER	1089	0	F0370000000108900000
577	VREDE RD	HESTERSDEEL	1006	0 (RE)	F0370000000100600000
578	VREDE RD	HESTERSDEEL	1006	1	F0370000000100600001
579	VREDE RD	HETTIESDALE	792	0	F0370000000079200000
580	VREDE RD	HOEKPAN	599	0	F0370000000059900000
581	VREDE RD	HOOGEBULT	730	0 (RE)	F0370000000073000000
582	VREDE RD	HOOGEBULT	730	1	F0370000000073000001
583	VREDE RD	HOOGEBULT	730	2	F0370000000073000002
584	VREDE RD	HOOGEBULT	1204	0 (RE)	F0370000000120400000
585	VREDE RD	HOOGGELEGEN	964	0	F0370000000096400000
586	VREDE RD	HOUD MOED	768	0	F0370000000076800000
587	VREDE RD	HURTERSBRUST	1134	0	F0370000000113400000
588	VREDE RD	INLOOP	836	0	F0370000000083600000
589	VREDE RD	IZAKSDEEL	823	0 (RE)	F0370000000082300000
590	VREDE RD	IZAKSDEEL	823	1	F0370000000082300001
591	VREDE RD	IZAKSDEEL	823	2	F0370000000082300002
592	VREDE RD	JAAPIE	987	0	F0370000000098700000
593	VREDE RD	JAAPESDAL	480	0 (RE)	F0370000000048000000
594	VREDE RD	JACKALS KOP	502	0	F0370000000050200000
595	VREDE RD	JACOBASDEEL	912	0	F0370000000091200000
596	VREDE RD	JACOBUSDAAL	744	1	F0370000000074400001
597	VREDE RD	JACOBUSDEEL	1081	0	F0370000000108100000
598	VREDE RD	JACOBUSDEEL	1081	1	F0370000000108100001
599	VREDE RD	JAKHALSRAND	985	0	F0370000000098500000
600	VREDE RD	JOESINASBRUST	520	0	F0370000000052000000
601	VREDE RD	JOESINASBRUST	520	1	F0370000000052000001
602	VREDE RD	JOHANNA	763	0	F0370000000076300000
603	VREDE RD	JUDITH'S LAAGTE	816	0	F0370000000081600000
604	VREDE RD	JUKSKY	470	0	F0370000000047000000
605	VREDE RD	JUSTITIE	729	0	F0370000000072900000
606	VREDE RD	KAALFONTEIN	351	0 (RE)	F0370000000035100000
607	VREDE RD	KALABAS FONTEIN	303	0	F0370000000030300000
608	VREDE RD	KAMP	76	0	F0370000000007600000
609	VREDE RD	KATRINASRUS	1176	0	F0370000000117600000
610	VREDE RD	KEDRON	764	0	F0370000000076400000
611	VREDE RD	KEERWEDER	961	0	F0370000000096100000
612	VREDE RD	KENTON	309	0	F0370000000030900000
613	VREDE RD	KIBO	844	0	F0370000000084400000
614	VREDE RD	KILFOILS	1321	0 (RE)	F0370000000132100000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
615	VREDE RD	KILFOILS	1321	1	F03700000000132100001
616	VREDE RD	KILFOILS	1321	2 (RE)	F03700000000132100002
617	VREDE RD	KILFOILS	1321	3	F03700000000132100003
618	VREDE RD	KILFOILS	1321	4	F03700000000132100004
619	VREDE RD	KINDERSDEEL	1084	0	F03700000000108400000
620	VREDE RD	KINGTON	870	0	F03700000000087000000
621	VREDE RD	KISMET	1139	0 (RE)	F03700000000113900000
622	VREDE RD	KISMET	1139	1	F03700000000113900001
623	VREDE RD	KISMET	1139	2	F03700000000113900002
624	VREDE RD	KLAVER VLEY	285	0 (RE)	F03700000000028500000
625	VREDE RD	KLAVER VLEY	285	1	F03700000000028500001
626	VREDE RD	KLAVER VLEY	285	2	F03700000000028500002
627	VREDE RD	KLAVER VLEY	285	3	F03700000000028500003
628	VREDE RD	KLEIN BEGIN	900	0	F03700000000090000000
629	VREDE RD	KLEIN BEGIN	1242	0	F03700000000124200000
630	VREDE RD	KLEIN BRAK	135	0	F03700000000013500000
631	VREDE RD	KLEIN GENOEG	856	0	F03700000000085600000
632	VREDE RD	KLEIN PARADYS	352	0	F03700000000035200000
633	VREDE RD	KLEINDEEL	1038	0	F03700000000103800000
634	VREDE RD	KLEINDRAAI	1202	0	F03700000000120200000
635	VREDE RD	KLEINFONTEIN	431	0 (RE)	F03700000000043100000
636	VREDE RD	KLEINFONTEIN	431	1	F03700000000043100001
637	VREDE RD	KLEINFONTEIN	431	2	F03700000000043100002
638	VREDE RD	KLEINFONTEIN	431	3	F03700000000043100003
639	VREDE RD	KLEINFONTEIN	431	4	F03700000000043100004
640	VREDE RD	KLEINFONTEIN	431	5	F03700000000043100005
641	VREDE RD	KLEINFONTEIN	431	7	F03700000000043100007
642	VREDE RD	KLIP VONTEIN	354	0 (RE)	F03700000000035400000
643	VREDE RD	KLIPFONTEIN	23	0	F03700000000002300000
644	VREDE RD	KLIPFONTEIN	1050	0 (RE)	F03700000000105000000
645	VREDE RD	KLIPKOPJE	1135	0	F03700000000113500000
646	VREDE RD	KLIPRAND	754	0	F03700000000075400000
647	VREDE RD	KOPPIE ALLEEN	347	0	F03700000000034700000
648	VREDE RD	KOPPIE ALLEEN	347	1	F03700000000034700001
649	VREDE RD	KOPPIE ALLEEN	347	2	F03700000000034700002
650	VREDE RD	KOPPIE ALLEEN	347	3	F03700000000034700003
651	VREDE RD	KOPPIE ALLEEN	347	4	F03700000000034700004
652	VREDE RD	KOPPIE EEN	84	0	F03700000000008400000
653	VREDE RD	KOPPIE EEN	84	1	F03700000000008400001
654	VREDE RD	KOPPIE EEN	84	2	F03700000000008400002
655	VREDE RD	KORTFONTEIN	1127	0 (RE)	F03700000000112700000
656	VREDE RD	KORTFONTEIN	1127	1	F03700000000112700001
657	VREDE RD	KROMDRAAI	91	0 (RE)	F03700000000009100000
658	VREDE RD	KROONVLEI	751	0 (RE)	F03700000000075100000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
659	VREDE RD	KWARTEL VLEY	355	0 (RE)	F0370000000035500000
660	VREDE RD	KWARTEL VLEY	355	1	F0370000000035500001
661	VREDE RD	LA ROCHELLE	850	0	F0370000000085000000
662	VREDE RD	LANDSKROON	290	0	F0370000000029000000
663	VREDE RD	LANG EN SMAL	934	0	F0370000000093400000
664	VREDE RD	LANGDRAAI	574	0 (RE)	F0370000000057400000
665	VREDE RD	LANGDRAAI	574	1	F0370000000057400001
666	VREDE RD	LANGDRAAI	574	2	F0370000000057400002
667	VREDE RD	LANGDRAAI	1192	0	F03700000000119200000
668	VREDE RD	LANGKUIL	1093	0	F03700000000109300000
669	VREDE RD	LANGSPRUIT	752	0	F0370000000075200000
670	VREDE RD	LANGSPRUIT	1037	0	F03700000000103700000
671	VREDE RD	LANGVERWACHT	576	0	F0370000000057600000
672	VREDE RD	LANGVERWACHT	1272	1	F03700000000127200001
673	VREDE RD	LEBANON	1053	0 (RE)	F03700000000105300000
674	VREDE RD	LEEUEW KOP	287	0	F0370000000028700000
675	VREDE RD	LEEUEW KOP	287	1	F0370000000028700001
676	VREDE RD	LEEUEW KOP	287	2	F0370000000028700002
677	VREDE RD	LEEUEW KOP	287	3	F0370000000028700003
678	VREDE RD	LEEUEW SPRUIT	328	0	F0370000000032800000
679	VREDE RD	LEEUEW SPRUIT	328	1	F0370000000032800001
680	VREDE RD	LEEUEW SPRUIT	328	2	F0370000000032800002
681	VREDE RD	LEEUEWPOORT	1120	0 (RE)	F03700000000112000000
682	VREDE RD	LEEUEWPOORT	1120	1	F03700000000112000001
683	VREDE RD	LEIDING	602	0	F0370000000060200000
684	VREDE RD	LEIDING	602	1	F0370000000060200001
685	VREDE RD	LEVENSBRON	1076	0	F03700000000107600000
686	VREDE RD	LIEFGEKOZEN	1399	0	F03700000000139900000
687	VREDE RD	LIEFGEKOZEN	1399	2	F03700000000139900002
688	VREDE RD	LOMBARD	1365	0	F03700000000136500000
689	VREDE RD	LORRAINE	963	0	F0370000000096300000
690	VREDE RD	LOSKOP	1020	0	F03700000000102000000
691	VREDE RD	LOSKOP	1020	1	F03700000000102000001
692	VREDE RD	LOSKOP	1020	2	F03700000000102000002
693	VREDE RD	LOURENTIA	395	0 (RE)	F0370000000039500000
694	VREDE RD	LOURENTIA	395	1	F0370000000039500001
695	VREDE RD	LOURENTIA	395	2 (RE)	F0370000000039500002
696	VREDE RD	LOURENTIA	395	3	F0370000000039500003
697	VREDE RD	LOURENTIA	1051	0	F03700000000105100000
698	VREDE RD	LOUWRENS RUST	315	0 (RE)	F0370000000031500000
699	VREDE RD	MAIDSTONE	297	0 (RE)	F0370000000029700000
700	VREDE RD	MALANSKRAAL	1180	0	F03700000000118000000
701	VREDE RD	MALANSKRAAL	1180	1	F03700000000118000001
702	VREDE RD	MALANSKRAAL	1180	2	F03700000000118000002

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
703	VREDE RD	MALFA	129	0	F0370000000012900000
704	VREDE RD	MALTA	1066	1 (RE)	F03700000000106600001
705	VREDE RD	MALTA	1066	3	F03700000000106600003
706	VREDE RD	MAMBAKLOOF	1074	0	F03700000000107400000
707	VREDE RD	MARA	302	0 (RE)	F0370000000030200000
708	VREDE RD	MARIASDAL	914	0	F03700000000091400000
709	VREDE RD	MEADOW BANK	74	0	F0370000000007400000
710	VREDE RD	MEADOW BANK	717	0	F03700000000071700000
711	VREDE RD	MEADOW BANK	738	0	F03700000000073800000
712	VREDE RD	MEDINA	516	0 (RE)	F03700000000051600000
713	VREDE RD	MEDINA	516	1	F03700000000051600001
714	VREDE RD	MEDINA	516	2	F03700000000051600002
715	VREDE RD	MERCURY	851	0	F03700000000085100000
716	VREDE RD	MERINO	1185	0 (RE)	F03700000000118500000
717	VREDE RD	MIDDELDEEL	1077	0	F03700000000107700000
718	VREDE RD	MIDDELDEEL	1238	0	F03700000000123800000
719	VREDE RD	MIDDELPUNT	338	0 (RE)	F03700000000033800000
720	VREDE RD	MIDDELPUNT	773	0	F03700000000077300000
721	VREDE RD	MIDDEL Rust	481	0 (RE)	F03700000000048100000
722	VREDE RD	MIDDENIN	22	0	F03700000000002200000
723	VREDE RD	MIDDENIN	802	0	F03700000000080200000
724	VREDE RD	MIDDENIN	808	0 (RE)	F03700000000080800000
725	VREDE RD	MIDDENIN	808	1	F03700000000080800001
726	VREDE RD	MIDDENIN	808	2	F03700000000080800002
727	VREDE RD	MIDDENIN	808	3	F03700000000080800003
728	VREDE RD	MIDDENIN	808	4	F03700000000080800004
729	VREDE RD	MIELIEBULT	871	0	F03700000000087100000
730	VREDE RD	MIELIEBULT	1269	0	F03700000000126900000
731	VREDE RD	MISGUND	559	0	F03700000000055900000
732	VREDE RD	MISGUND	580	0	F03700000000058000000
733	VREDE RD	MISGUND	580	1	F03700000000058000001
734	VREDE RD	MISGUND	580	2	F03700000000058000002
735	VREDE RD	MOEDERSDEEL	1161	0	F03700000000116100000
736	VREDE RD	MOLL	527	0	F03700000000052700000
737	VREDE RD	MOOI RUST	548	0	F03700000000054800000
738	VREDE RD	MOOIBRAK	391	0 (RE)	F03700000000039100000
739	VREDE RD	MOOIBRAK	391	1	F03700000000039100001
740	VREDE RD	MOOIBULT	126	0	F03700000000012600000
741	VREDE RD	MOOIDAM	1116	0	F03700000000111600000
742	VREDE RD	MOOIDRAAI	476	0 (RE)	F03700000000047600000
743	VREDE RD	MOOIDRAAI	476	1	F03700000000047600001
744	VREDE RD	MOOIFONTEIN	579	0	F03700000000057900000
745	VREDE RD	MOOIGENOEG	277	0 (RE)	F03700000000027700000
746	VREDE RD	MOOIHOEK	1197	0 (RE)	F03700000000119700000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
747	VREDE RD	MOOIHOEK	1197	1	F03700000000119700001
748	VREDE RD	MOOIHOEK	1332	0 (RE)	F03700000000133200000
749	VREDE RD	MOOIHOEK	1332	1	F03700000000133200001
750	VREDE RD	MOOIVLEI	984	0	F03700000000098400000
751	VREDE RD	MORRESON	1078	0	F03700000000107800000
752	VREDE RD	MOUNT MARIA	858	0	F03700000000085800000
753	VREDE RD	NAAUWPOORT	291	0	F03700000000029100000
754	VREDE RD	NAAUWPOORT	291	1	F03700000000029100001
755	VREDE RD	NAAUWPOORT	291	10	F03700000000029100010
756	VREDE RD	NAAUWPOORT	291	2	F03700000000029100002
757	VREDE RD	NAAUWPOORT	291	4	F03700000000029100004
758	VREDE RD	NAAUWPOORT	291	5	F03700000000029100005
759	VREDE RD	NAAUWPOORT	291	6	F03700000000029100006
760	VREDE RD	NAAUWPOORT	291	7	F03700000000029100007
761	VREDE RD	NAAUWPOORT	291	8	F03700000000029100008
762	VREDE RD	NAAUWPOORT	291	9	F03700000000029100009
763	VREDE RD	NAZARETH	750	0	F03700000000075000000
764	VREDE RD	NAZARETH	750	1	F03700000000075000001
765	VREDE RD	NEMO	843	0 (RE)	F03700000000084300000
766	VREDE RD	NEMO	843	1	F03700000000084300001
767	VREDE RD	NEVADA	943	0	F03700000000094300000
768	VREDE RD	NEVADA	943	1	F03700000000094300001
769	VREDE RD	NEVADA A	940	0	F03700000000094000000
770	VREDE RD	NIEUWE WONING	1145	0	F03700000000114500000
771	VREDE RD	NONNIESBULT	859	0	F03700000000085900000
772	VREDE RD	NOOITGEDACHT	958	0 (RE)	F03700000000095800000
773	VREDE RD	NOOITGEDACHT	1092	0	F03700000000109200000
774	VREDE RD	NOOITVERWACHT	372	0	F03700000000037200000
775	VREDE RD	OMEGA	113	0	F03700000000011300000
776	VREDE RD	ONRUST	1007	0	F03700000000100700000
777	VREDE RD	ONS RUS	1019	0	F03700000000101900000
778	VREDE RD	ONS RUS	1019	1	F03700000000101900001
779	VREDE RD	ONS RUS	1019	2	F03700000000101900002
780	VREDE RD	ONS RUS	1019	3	F03700000000101900003
781	VREDE RD	ONVERWACHT	790	0	F03700000000079000000
782	VREDE RD	ONVERWAG	739	0	F03700000000073900000
783	VREDE RD	ORANJEFONTEIN	353	0	F03700000000035300000
784	VREDE RD	OREBEE LEEGTE	308	0	F03700000000030800000
785	VREDE RD	ORIBIE FONTEIN	270	0	F03700000000027000000
786	VREDE RD	ORIBIE FONTEIN	270	1	F03700000000027000001
787	VREDE RD	ORIBIE FONTEIN	270	2	F03700000000027000002
788	VREDE RD	ORIBIEKRAAL	897	0	F03700000000089700000
789	VREDE RD	PAARDEN VLEY	345	0	F03700000000034500000
790	VREDE RD	PAARDENKOP	1349	0	F03700000000134900000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
791	VREDE RD	PADLANGS	441	0 (RE)	F0370000000044100000
792	VREDE RD	PADLANGS	441	1	F0370000000044100001
793	VREDE RD	PAMPOENKRAAL	314	0 (RE)	F0370000000031400000
794	VREDE RD	PANDAM	716	0 (RE)	F0370000000071600000
795	VREDE RD	PARK	775	0	F0370000000077500000
796	VREDE RD	PATRYSHOEK	986	0	F0370000000098600000
797	VREDE RD	PAUL'S DEEL	771	0 (RE)	F0370000000077100000
798	VREDE RD	PAUL'S DEEL	771	1	F0370000000077100001
799	VREDE RD	PAUL'S DEEL	771	2	F0370000000077100002
800	VREDE RD	PELGRIMSRUS	437	0 (RE)	F0370000000043700000
801	VREDE RD	PELGRIMSRUS	437	1	F0370000000043700001
802	VREDE RD	PELGRIMSRUS	437	2	F0370000000043700002
803	VREDE RD	PELGRIMSRUS	437	3	F0370000000043700003
804	VREDE RD	PELGRIMSRUS	437	4	F0370000000043700004
805	VREDE RD	PELGRIMSRUS	437	5	F0370000000043700005
806	VREDE RD	PETRUSRUST	479	0	F0370000000047900000
807	VREDE RD	PETRUSRUST	479	1	F0370000000047900001
808	VREDE RD	PETRUSRUST	479	2	F0370000000047900002
809	VREDE RD	PHILLIESDEEL	348	0	F0370000000034800000
810	VREDE RD	PHILLIESDEEL	348	1	F0370000000034800001
811	VREDE RD	PHILLIESDEEL	348	2	F0370000000034800002
812	VREDE RD	PIENAARS VLEI	461	0 (RE)	F0370000000046100000
813	VREDE RD	PIETERSDEEL	884	0	F0370000000088400000
814	VREDE RD	PLAT VLEY	276	0	F0370000000027600000
815	VREDE RD	PLATRANDE	130	0	F0370000000013000000
816	VREDE RD	PLATRANDE	743	1	F0370000000074300001
817	VREDE RD	PRIMROSE	99	0	F0370000000009900000
818	VREDE RD	PRINSHOF	384	0	F0370000000038400000
819	VREDE RD	PROSPECT	299	0 (RE)	F0370000000029900000
820	VREDE RD	PRUIMPJE	767	0	F0370000000076700000
821	VREDE RD	QUAGGA NEK	483	0 (RE)	F0370000000048300000
822	VREDE RD	QUAGGA NEK	483	1	F0370000000048300001
823	VREDE RD	QUO VADIS	1138	0 (RE)	F0370000000113800000
824	VREDE RD	QUO VADIS	1138	2 (RE)	F0370000000113800002
825	VREDE RD	QUO VADIS	1138	4	F0370000000113800004
826	VREDE RD	QUO VADIS	1138	5	F0370000000113800005
827	VREDE RD	RADNOR	417	1	F0370000000041700001
828	VREDE RD	RADNORDEEL	1397	0	F0370000000139700000
829	VREDE RD	RAND FONTEIN	529	0	F0370000000052900000
830	VREDE RD	REMEMBER	1082	0	F0370000000108200000
831	VREDE RD	REMEMBER	1082	1	F0370000000108200001
832	VREDE RD	RIETFONTEIN	288	1	F0370000000028800001
833	VREDE RD	RIETFONTEIN	288	2	F0370000000028800002
834	VREDE RD	RIETFONTEIN	720	0	F0370000000072000000

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
835	VREDE RD	RISHTON	383	0 (RE)	F0370000000038300000
836	VREDE RD	ROBBERTZ' DRIFT	322	0 (RE)	F0370000000032200000
837	VREDE RD	ROELOF'S DEEL	97	0 (RE)	F0370000000009700000
838	VREDE RD	RONDEBULT	956	0	F0370000000095600000
839	VREDE RD	RONDEBULT	956	1	F0370000000095600001
840	VREDE RD	RONDEKOP	593	0	F0370000000059300000
841	VREDE RD	ROODE KRANS	310	0 (RE)	F0370000000031000000
842	VREDE RD	ROODE KRANS	310	1	F0370000000031000001
843	VREDE RD	ROODEPOORT	350	0 (RE)	F0370000000035000000
844	VREDE RD	ROODEPOORT	350	1	F0370000000035000001
845	VREDE RD	ROSENDAL	949	0	F0370000000094900000
846	VREDE RD	ROTTERDAM	746	0 (RE)	F0370000000074600000
847	VREDE RD	ROZENDAL	1100	0 (RE)	F0370000000011000000
848	VREDE RD	ROZENDAL	1100	1	F0370000000011000001
849	VREDE RD	RUSTHOF	1270	0	F0370000000012700000
850	VREDE RD	S.J.	1315	0	F03700000000131500000
851	VREDE RD	SAAIPLAAS	54	0 (RE)	F0370000000005400000
852	VREDE RD	SAULSRUST	642	0	F0370000000064200000
853	VREDE RD	SAXONY	26	0 (RE)	F0370000000002600000
854	VREDE RD	SCHAAPBULT	726	0	F0370000000072600000
855	VREDE RD	SCHAAPBULT	726	1	F0370000000072600001
856	VREDE RD	SCHOONDRAAI	724	0 (RE)	F0370000000072400000
857	VREDE RD	SCHOONHEID	62	0	F0370000000006200000
858	VREDE RD	SCHULPSPRUIT	24	0	F0370000000002400000
859	VREDE RD	SEVEN OAKS	1222	0 (RE)	F03700000000122200000
860	VREDE RD	SEVEN OAKS	1222	1	F03700000000122200001
861	VREDE RD	SLANGFONTEIN	318	0 (RE)	F0370000000031800000
862	VREDE RD	SLANGRIVIER	296	0	F0370000000029600000
863	VREDE RD	SMALDEEL	136	0	F0370000000013600000
864	VREDE RD	SMALDEEL	719	0	F0370000000071900000
865	VREDE RD	SMALDEEL	1306	0	F03700000000130600000
866	VREDE RD	SMALPUNT	989	0	F0370000000098900000
867	VREDE RD	SMALPUNT	1337	0	F03700000000133700000
868	VREDE RD	SOPHIA'S GUNST	687	0	F0370000000068700000
869	VREDE RD	SOPHIA'S GUNST	687	1	F0370000000068700001
870	VREDE RD	SOPHIA'S GUNST	687	2	F0370000000068700002
871	VREDE RD	SOPHIA'S GUNST	687	3	F0370000000068700003
872	VREDE RD	SOPHIA'S GUNST	687	4	F0370000000068700004
873	VREDE RD	SOPHIA'S GUNST	687	5	F0370000000068700005
874	VREDE RD	SOPHIA'S GUNST	687	6	F0370000000068700006
875	VREDE RD	SOPHIA'S GUNST	687	7	F0370000000068700007
876	VREDE RD	SORGVLIET A	1311	0	F03700000000131100000
877	VREDE RD	SPES BONA	415	0 (RE)	F0370000000041500000
878	VREDE RD	SPITSHOEK	913	0	F0370000000091300000



No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
879	VREDE RD	SPRINGBOKLAAGTE	387	0 (RE)	F0370000000038700000
880	VREDE RD	SPRINGBOKLAAGTE	387	1	F0370000000038700001
881	VREDE RD	SPRINGBOKLAAGTE	387	2	F0370000000038700002
882	VREDE RD	STERKFORTEIN	396	0	F0370000000039600000
883	VREDE RD	STERKFORTEIN	396	1	F0370000000039600001
884	VREDE RD	STERKFORTEIN	396	2	F0370000000039600002
885	VREDE RD	STERKFORTEIN	396	4	F0370000000039600004
886	VREDE RD	STERKFORTEIN	1114	0	F03700000000111400000
887	VREDE RD	STEYNSRUST	191	0	F0370000000019100000
888	VREDE RD	STRIJDFONTEIN	477	0	F0370000000047700000
889	VREDE RD	STUURMANDRIFT	1239	0	F03700000000123900000
890	VREDE RD	SUKSES	1198	0	F03700000000119800000
891	VREDE RD	SUSANNAS DEEL	742	0	F0370000000074200000
892	VREDE RD	SUSSIESDEEL	991	0	F0370000000099100000
893	VREDE RD	SWARTWAL	1118	0	F03700000000111800000
894	VREDE RD	SYFERFORTEIN A	1014	0	F03700000000101400000
895	VREDE RD	SYFERFORTEIN B	1015	0	F03700000000101500000
896	VREDE RD	SYFERPOORT	203	1	F0370000000020300001
897	VREDE RD	SYFERPOORT	203	2	F0370000000020300002
898	VREDE RD	SYFERPOORT	203	3	F0370000000020300003
899	VREDE RD	SYFERPOORT	203	4	F0370000000020300004
900	VREDE RD	SYFERPOORT	203	5	F0370000000020300005
901	VREDE RD	TERRA	385	0 (RE)	F0370000000038500000
902	VREDE RD	TEVREDE	456	0	F0370000000045600000
903	VREDE RD	TEVREDEN	1072	0	F03700000000107200000
904	VREDE RD	THE WILLOWS	1221	0	F03700000000122100000
905	VREDE RD	THEODORA'S HOOP	765	0 (RE)	F0370000000076500000
906	VREDE RD	THEODORA'S HOOP	765	1	F0370000000076500001
907	VREDE RD	THOMAS VLEI	132	0 (RE)	F0370000000013200000
908	VREDE RD	THOMAS VLEI	132	1	F0370000000013200001
909	VREDE RD	THYSRUST	1090	0	F03700000000109000000
910	VREDE RD	TOGWAT	1128	0	F03700000000112800000
911	VREDE RD	TRADOUW	1241	0	F03700000000124100000
912	VREDE RD	TWEEFORTEIN	137	0	F0370000000013700000
913	VREDE RD	TWEEFORTEIN	335	0 (RE)	F0370000000033500000
914	VREDE RD	TWEEFORTEIN	335	1	F0370000000033500001
915	VREDE RD	TWEESPRUIT	1173	0	F03700000000117300000
916	VREDE RD	TWISHOEK	1079	0	F03700000000107900000
917	VREDE RD	UIJSRUST	992	1	F0370000000099200001
918	VREDE RD	UIJSRUST	992	2	F0370000000099200002
919	VREDE RD	UITKOMST	955	0	F0370000000095500000
920	VREDE RD	UITKYK	20	0	F0370000000020000000
921	VREDE RD	UITKYK	414	0	F0370000000041400000
922	VREDE RD	UITKYK	414	1	F0370000000041400001

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
923	VREDE RD	UITKYK	414	2	F0370000000041400002
924	VREDE RD	UITKYK	414	4	F0370000000041400004
925	VREDE RD	UITKYK	830	0	F0370000000083000000
926	VREDE RD	UITSPRUIT	594	0	F0370000000059400000
927	VREDE RD	UITZICHT	313	0	F0370000000031300000
928	VREDE RD	UITZICHT	313	1	F0370000000031300001
929	VREDE RD	UITZICHT	313	2	F0370000000031300002
930	VREDE RD	UITZIEN	401	1	F0370000000040100001
931	VREDE RD	UITZIEN	401	2	F0370000000040100002
932	VREDE RD	UITZIEN	401	3	F0370000000040100003
933	VREDE RD	UITZIEN	401	4 (RE)	F0370000000040100004
934	VREDE RD	UITZIEN	401	6	F0370000000040100006
935	VREDE RD	UITZIEN	401	7	F0370000000040100007
936	VREDE RD	UITZIEN	401	8	F0370000000040100008
937	VREDE RD	UITZOEK	133	0 (RE)	F0370000000013300000
938	VREDE RD	VAALBANK	482	0 (RE)	F0370000000048200000
939	VREDE RD	VAALBANK	482	1	F0370000000048200001
940	VREDE RD	VAALKOP	747	0 (RE)	F0370000000074700000
941	VREDE RD	VAALKOP	747	1	F0370000000074700001
942	VREDE RD	VAALSPRUIT	598	0	F0370000000059800000
943	VREDE RD	VADER'S GIFT	1091	0	F03700000000109100000
944	VREDE RD	VAN AARDTS DRAAI	323	0	F0370000000032300000
945	VREDE RD	VAN WIJKS PAN	748	0 (RE)	F0370000000074800000
946	VREDE RD	VARKENS VLEI SIDING	86	0	F0370000000008600000
947	VREDE RD	VARKENSVLEI	327	0 (RE)	F0370000000032700000
948	VREDE RD	VASTRAP	608	0	F0370000000060800000
949	VREDE RD	VENTERSHOEK	519	0	F0370000000051900000
950	VREDE RD	VENTERSHOEK	519	1	F0370000000051900001
951	VREDE RD	VENTERSKROON	772	0 (RE)	F0370000000077200000
952	VREDE RD	VERGENOEG	910	0 (RE)	F0370000000091000000
953	VREDE RD	VERGENOEG	910	6	F0370000000091000006
954	VREDE RD	VERHOOG	911	0	F0370000000091100000
955	VREDE RD	VIERFONTEIN	486	0	F0370000000048600000
956	VREDE RD	VLAK NEK	339	0	F0370000000033900000
957	VREDE RD	VLAK NEK	339	1	F0370000000033900001
958	VREDE RD	VLAK NEK	339	2	F0370000000033900002
959	VREDE RD	VREDEBOND	1175	0	F03700000000117500000
960	VREDE RD	WAG N BIETJIE	1200	0	F0370000000012000000
961	VREDE RD	WAPENRUST	718	0	F0370000000071800000
962	VREDE RD	WATERLOOP	596	0	F0370000000059600000
963	VREDE RD	WATERSTROOM	631	0	F0370000000063100000
964	VREDE RD	WELGEDAAN	569	0 (RE)	F0370000000056900000
965	VREDE RD	WELGEGUND	1022	0	F03700000000102200000
966	VREDE RD	WELGEGUND	1022	1	F03700000000102200001

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
967	VREDE RD	WELGELEGEN	53	0 (RE)	F0370000000005300000
968	VREDE RD	WELGELEGEN	53	1	F0370000000005300001
969	VREDE RD	WELGERUS	1296	0	F0370000000012960000
970	VREDE RD	WELKOM	1119	0	F0370000000011190000
971	VREDE RD	WELSTAND	404	0 (RE)	F0370000000040400000
972	VREDE RD	WELSTAND	404	1	F0370000000040400001
973	VREDE RD	WELSTAND	404	2	F0370000000040400002
974	VREDE RD	WELSTAND	404	3	F0370000000040400003
975	VREDE RD	WELSTAND	404	4	F0370000000040400004
976	VREDE RD	WELSTAND	404	5	F0370000000040400005
977	VREDE RD	WELSTAND	404	7	F0370000000040400007
978	VREDE RD	WELTEVREDE	1160	0	F0370000000011600000
979	VREDE RD	WELTEVREDEN	89	0 (RE)	F0370000000008900000
980	VREDE RD	WELTEVREDEN	89	1	F0370000000008900001
981	VREDE RD	WELTEVREDEN	89	2	F0370000000008900002
982	VREDE RD	WELTEVREDEN	89	3	F0370000000008900003
983	VREDE RD	WELTEVREDEN	89	4	F0370000000008900004
984	VREDE RD	WELTEVREDEN	89	5	F0370000000008900005
985	VREDE RD	WELTEVREDEN	89	6	F0370000000008900006
986	VREDE RD	WELTEVREDEN	89	7	F0370000000008900007
987	VREDE RD	WELTEVREDEN	549	0 (RE)	F0370000000054900000
988	VREDE RD	WELTEVREDEN	549	1	F0370000000054900001
989	VREDE RD	WELTEVREDEN	901	0	F0370000000090100000
990	VREDE RD	WELTEVREDEN	988	0	F0370000000098800000
991	VREDE RD	WELVERDIEND	371	0	F0370000000037100000
992	VREDE RD	WELVERDIEND	1169	0	F0370000000011690000
993	VREDE RD	WESSELS RUST	349	0 (RE)	F0370000000034900000
994	VREDE RD	WILGEVLEI	824	0 (RE)	F0370000000082400000
995	VREDE RD	WILHELMINA	9	0	F0370000000009000000
996	VREDE RD	WILHELMINA	424	0 (RE)	F0370000000042400000
997	VREDE RD	WILHELMINA	424	1	F0370000000042400001
998	VREDE RD	WITBANK	560	0	F0370000000056000000
999	VREDE RD	WITBANK	560	2	F0370000000056000002
1000	VREDE RD	WITBANK	560	3	F0370000000056000003
1001	VREDE RD	WITBANK	560	4	F0370000000056000004
1002	VREDE RD	WITBANK	560	5	F0370000000056000005
1003	VREDE RD	WITBANK	560	6	F0370000000056000006
1004	VREDE RD	WITBANK	560	7 (RE)	F0370000000056000007
1005	VREDE RD	WONDERFONTEIN	875	0	F0370000000087500000
1006	VREDE RD	ZAAIHOEK	889	0	F0370000000088900000
1007	VREDE RD	ZAAIKAMP	595	0	F0370000000059500000
1008	VREDE RD	ZAMENKOMST	386	0 (RE)	F0370000000038600000
1009	VREDE RD	ZAMENKOMST	400	0	F0370000000040000000
1010	VREDE RD	ZAMENKOMST	400	1	F0370000000040000001

No.	Registration Division	Farm Name	Farm No.	Portion No.	SG 21-Digit Code
1011	VREDE RD	ZOETBRON	151	0	F0370000000015100000
1012	VREDE RD	ZONDERWATER	575	0	F03700000000057500000
1013	VREDE RD	ZUIKERVLEY	278	0	F03700000000027800000
1014	VREDE RD	ZUURING BANK	562	0 (RE)	F03700000000056200000
1015	VREDE RD	ZUURING BANK	562	1	F03700000000056200001
1016	VREDE RD	ZUURINGBANK A	1083	0	F03700000000108300000
1017	VREDE RD	ZWAAIHOEK	657	0	F03700000000065700000
1018	VREDE RD	ZWARTBANK	281	0	F03700000000028100000
1019	VREDE RD	ZWARTFONTEIN	150	0	F03700000000015000000
1020	VREDE RD	ZWARTKRANS	745	0 (RE)	F03700000000074500000
1021	VREDE RD	ZWARTLAAGTE	600	0 (RE)	F03700000000060000000
1022	VREDE RD		77	0	F03700000000007700000
1023	VREDE RD		119	0	F03700000000011900000
1024	VREDE RD		301	0	F03700000000030100000
1025	VREDE RD		404	8	F03700000000040400008
1026	VREDE RD		406		F03700000000040600000
1027	VREDE RD		431	8	F03700000000043100008
1028	VREDE RD		488	1	F03700000000048800001
1029	VREDE RD		569	1	F03700000000056900001
1030	VREDE RD		744	0	F03700000000074400000
1031	VREDE RD		752	1	F03700000000075200001
1032	VREDE RD		822	0	F03700000000082200000
1033	VREDE RD		850	1	F03700000000085000001
1034	VREDE RD		857	11	F03700000000085700011
1035	VREDE RD		857	12	F03700000000085700012
1036	VREDE RD		857	14	F03700000000085700014
1037	VREDE RD		884	1	F03700000000088400001
1038	VREDE RD		1077	1	F03700000000107700001
1039	VREDE RD		1234	0	F03700000000123400000
1040	VREDE RD		1288	0	F03700000000128800000
1041	VREDE RD		1391	0	F03700000000139100000
1042	VREDE RD		1392	0	F03700000000139200000
1043	VREDE RD		1399	1	F03700000000139900001
1044	VREDE RD		1399	3	F03700000000139900003
1045	VREDE RD		1399	4	F03700000000139900004
1046	VREDE RD		1399	5	F03700000000139900005
1047	VREDE RD		1400	0	F03700000000140000000

**APPENDIX 3: EAP UNDERTAKING**

## LETTER OF UNDERTAKING

UNDERTAKING in terms of Appendix 2 (Sections 2j & 2k) of the Environmental Impact Assessment Regulations (EIA) 2014:

We, Jeremy Blood and Jonathan Crowther, the Environmental Assessment Practitioners responsible for compiling this report, undertake that:

- the information provided herein is correct;
- the comments and inputs from stakeholders and I&APs has been correctly recorded;
- information and responses provided to stakeholders and I&APs by the EAP is correct; and
- SLR agrees to implement the Plan of Study for EIA as presented in the Scoping Report. Any comments from stakeholders and I&APs on the Plan of Study for EIA have been / will be taken into consideration.

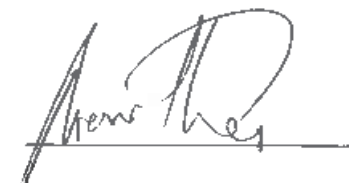
Signed on the 12 day of DECEMBER 2016.

For and on behalf of SLR Consulting (South Africa) (Pty) Ltd



Name: Jeremy Blood

Designation: Senior Environmental Consultant



Name: Jonathan Crowther

Designation: Technical Director

SLR Consulting (South Africa) [Proprietary] Limited

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Cape Town Office: Unit 39, Roeland Square, 30 Drury Lane, Cape Town / Postal address: P O Box 10145, Caledon Square, 7905 / T: +27 21 461 1118 / F: +27 21 461 1120  
Somerset West Office: Unit 03, Building 5, Fairways Office Park, Niblick Way, Somerset West / T: +27 21 851 3348

Directors: B Stobart / F Fredericks, K Pieterse

**APPENDIX 4: CURRICULA VITAE (INCLUDING REGISTRATIONS) OF THE PROJECT TEAM**

**Jonathan Crowther**  
Technical Director – African  
Oil & Gas Sector Lead



## Curriculum Vitae

### Qualifications

CEAPSA	2003	Certified as an Environmental Assessment Practitioner with the Interim Certification Board for Environmental Assessment Practitioners of South Africa
ICB	1999	Member of ICB Certification Committee
IWM	1998	Member of Institute of Waste Management
IAIAsa	1997	Member of International Association for Impact Assessment (South Africa). Past President of IAIAsa.
Pr.Sci.Nat.	1993	Registered Professional Natural Scientist – Environmental Scientist
MSc	1988	Environmental Science (University of Cape Town)
BSc (Hons)	1983	Geology (Rhodes University)
BSc	1982	Geology and Geography (Rhodes University)

### Key Areas of Expertise

Key areas of Jonathan's expertise are summarised below.

Environmental Assessments	Project Management Basic Assessments (BA) Environmental Impact Assessments (EIA) Environmental management programmes and plans (EMPs) Environmental authorisations, permits and licenses
Stakeholder Management	Stakeholder engagement Facilitation of public participation processes Liaison with government and non-government organisations
Environmental auditing and monitoring	EMPs Environmental Control Officer (ECO) Compliance Auditing Closure Reporting

### Summary of Experience and Capability

Jonathan is the SLR Sector Lead for Oil and Gas in Africa. He has expertise in a wide range of environmental disciplines, including Environmental Impact Assessments (EIA), Environmental Management Plans / Programmes, Environmental Planning & Review, Environmental Auditing & Monitoring, Environmental Control Officer, Public Consultation & Facilitation.

He has project managed a large number of offshore oil and gas EIAs for various exploration and production activities in South Africa and Namibia. He also has extensive experience in infrastructure projects, property developments and waste management.

### Recent Project Experience

Key aspects of Jonathan's recent project experience are summarised below.

Project	Date	Jonathan's Role
<b>Oil and Gas Exploration and Production</b>		
Spectrum Geo Limited. EMP for a Reconnaissance permit application to acquire 2D multi-client seismic data off the Southern Coast of South Africa	2016-ongoing	Project Management and quality control of the EMP
Petroleum Geo-Services (Pty) Ltd. EMP Addendum for the expansion of a speculative seismic survey off the South Coast of South Africa	2016-ongoing	Project management and quality control of the EMP
Rhino Oil & Gas Exploration South Africa (Pty) Ltd. Scoping and EIA for an Oil and Gas Exploration Programme in Blocks 3617 & 3717 off the South-West Coast of South Africa	2015-ongoing	Project management and quality control of the EIA
Rhino Oil & Gas Exploration South Africa (Pty) Ltd. Scoping and EIA for an Oil and Gas Exploration Programme in various inshore Blocks off the South-West Coast of South Africa	2015-ongoing	Project management and quality control of the EIA
Thombo Petroleum (Pty) Ltd. Scoping, EIA and EMP Addendum for exploration well drilling in Block 2B off the West Coast of South Africa	2014-2015	Project management and quality control of the Scoping, EIA and EMP Addendum
Sunbird Energy Ltd. EIA and EMP for the proposed Ibhubesi Gas Project, West Coast, South Africa	2013-ongoing	Project management and quality control of the EIA
Shell South African Upstream B.V. EIA and EMP for an amendment to the existing Exploration Right to undertake Exploration Well Drilling in the Orange Basin Deep Water Block, West Coast, South Africa	2013-2015	Project management and quality control of the EIA
Cairn South Africa (Pty) Ltd. EIA and EMP for an amendment to the existing Exploration Right to undertake Exploration Well Drilling in Block 1, West Coast, South Africa	2013-2015	Project management and quality control of the EIA
Total E and P South Africa (Pty) Ltd. ECO, Compliance requirements and audit for deepwater well drilling in Block 11B/12B, South Africa	2013-2014	Project management and quality control
Spectrum ASA. EIA for a proposed 2D speculative seismic survey in the Orange Basin, Namibia	2013	Project management and quality control of the EIA
Tullow Kudu Limited. Environmental and Social Impact Assessment for a proposed 3D and 2D seismic survey in Licence Blocks 2012B, 2112A and 2113B, Walvis Basin, Namibia	2013	Project management and quality control of the ESIA
Sasol Petroleum International (Pty) Ltd. EMP for a proposed 2D seismic survey programme in the Durban and Zululand Basins off the East Coast of South Africa	2012-2013	Project management of the EMP
Total E and P South Africa (Pty) Ltd. EMP for a proposed 2D seismic survey, sonar bathymetry and drop core sampling in the Outeniqua South Area, South Coast, South Africa	2012-2013	Project management of the EMP
PetroSA (Pty) Ltd. EMP Amendment for the proposed seismic survey campaign in Block 1, West Coast, South Africa	2012	Project management of the EMP
Bayfield Energy Ltd. EMP Amendment for the proposed seismic survey in the Pletmos Inshore Area, South Coast, South Africa	2012	Project management of the EMP
CGG Veritas Services (UK) Ltd. EMP for a proposed speculative seismic survey, East Coast, South Africa	2012	Project management of the EMP



Project	Date	Jonathan's Role
Signet Petroleum Ltd. EIA for proposed 2D and 3D seismic surveys in Block 2914B off the coast of Namibia	2011	Project management and quality control of the EIA
HRT Netherlands B.V. EIA for a 3D seismic survey in two offshore areas, Namibia	2010-2011	Project management and quality control of the EIA
CNR International Limited. EMP and BA for exploration well drilling in Block 11B/12B, South Coast, South Africa	2010-2011	Project management of the EMP and Basic Assessment
Atacama Consulting for Dominion Oil. Project review of a proposed onshore and offshore seismic survey in the Queen Elizabeth National Park, Uganda	2010	Project reviewer
PetroSA (Pty) Ltd. EIA and EMP for PetroSA's proposed production wells in the FO field (eight wells) and in the Oribi/Oryx mining lease area (one well)	2008-2011	Project management of the EIA and EMP
Enigma Oil. EIA for 2D seismic surveys to be undertaken of the coast of Namibia	2008-2009	Project management of the EIA
Petroleum Agency SA. Environmental Report for an offshore seismic survey undertaken as part of the South African Shelf claim project	2007	Project management for undertaking an Environmental Report
PetroSA (Pty) Ltd. EMP for the construction phase of the South Coast Gas project, South Coast, South Africa	2007	Chair and Secretariat of the EMP
BHP Billiton Petroleum (Americas) Inc. EIA for a proposed 2D seismic survey in the Northern Block, Namibia	2007	Project management of the EIA
Forest Exploration International (SA). EIA and EMP for the proposed Ihubesi Gas project and related infrastructure, West Coast, South Africa	2006-2008	Project management of the EIA
BHP Billiton Petroleum (Americas) Inc. Expanded Environmental Notification for drilling a Deep Water exploration well in Petroleum Licence Block 3B/4B off the West Coast of South Africa	2004-2007	Compilation of an Expanded Environmental Notification
PetroSA (Pty) Ltd. EIA and EMP for the proposed South Coast Gas Development project in Petroleum Block 9, South Africa	2004-2007	Project management for the EIA and EMP
Pioneer Natural Resources (Pty) Ltd. Environmental Notification and Close-out Reports for the drilling of three prospect wells in Block 9, South Africa	2003	Project management
PetroSA EMPR for the development of the Sable Oil Field, South Africa	2001	Compilation of EMPPr
Petroleum Agency South Africa. Generic EMPPr for oil and gas prospecting for the whole of the South African Offshore	1999-2002	Compilation of a Generic EMPPr
Brown and Root on behalf of Shell Exploration and Production Namibia. Route selection for the proposed Kudu Gas pipeline between Oranjemund, Namibia and Cape Town, South Africa	1998-1999	Environmental input into the route selection
Soekor E&P (Pty) Ltd. EIA and EMPPr for the proposed extension of the ORIBI oil production facility and hydrocarbon exploration in Block 9 off the Southern Cape Coast (joint venture with CSIR)	1997	Project management of the EIA and compilation of EMPPrs
<b>Road and related infrastructure<sup>1</sup></b>		
Hatch GOBA (Pty) Ltd. MMP for proposed flood damage repairs to structures in the Eden and Winelands Municipal areas between Ladismith and Montagu, Western Cape	2015-ongoing	Project management and quality control of the MMP
ERO Engineers (Pty) Ltd. MMP for the proposed repair and reseal of Main Road 233, Langebaan, Western Cape	2015-2016	Project management and quality control of the MMP

<sup>1</sup> All subsequent projects are undertaken in South Africa unless otherwise indicated.

Project	Date	Jonathan's Role
Bergstan SA Consulting and Development Engineers (Pty) Ltd for WCG: Department of Transport and Public Works. BA for the storm damage repair of slopes and roadway on MR101 between Simonstown and Smitswinkel Bay, Western Cape	2014-2015	Project management and quality control of the BA
AECOM SA (Pty) Ltd. for South African National Roads Agency SOC Limited. BA and EIA for the proposed upgrading of National Route 7 between Leliefontein and Hopefield intersections, Western Cape	2013-2015	Project management and quality control of the two Basic Assessments and an EIA
Kantey & Templer Consulting Engineers (Pty) Ltd. for WCG (Dept. of Transport & Public Works). BA for the proposed improvement to the R44, Somerset West to Stellenbosch	2012-ongoing	Project management and quality control of a Basic Assessment
BKS (Pty) Ltd for WCG (Dept. of Transport & Public Works). EIA process for the proposed road network improvements required to support the development of the Saldanha Industrial Zone and port expansion, Western Cape	2012-2015	Project management and quality control of the EIA
Aurecon (Pty) Ltd for WCG (Dept. of Transport & Public Works). BA for the repair of flood damaged structures in the Eden District Municipality, Southern Cape	2012-2013	Project management and quality control of a number of Basic Assessments
ERO Engineers (Pty) Ltd for South African National Roads Agency Limited. EIA for the improvement of N7 Section 1 between Melkbos Intersection and Atlantis Intersection, Western Cape	2010-2011	Project management of the Scoping Study and EIA
BKS (Pty) Ltd for South African National Roads Agency Limited. BA, EMP and ECO input for the improvement of structures (including the widening of five bridges) on the R27, Section 10 & 11 between Kenhardt and Keimoes, Northern Cape	2009-2011	Project management for the BA, EMP and ECO
Bergstan South Africa (Pty) Ltd for WCPA (Dept. of Transport and Public Works). BA for the reconstruction of three flood damaged bridges in the Hex River Valley, Western Cape	2009-2010	Project management of the Basic Assessment
UWP (Pty) Ltd for South African National Roads Agency Limited. BA for the proposed rehabilitation of National Route 9 Section 7 from Wolwefontein (km63.63) to Colesberg (km94.84) including a new N1/N9 access interchange at Colesberg, Western Cape	2008-2011	Project management of the Basic Assessment
BKS (Pty) Ltd for WCPA (Dept. of Transport & Public Works). BA and ECO for the upgrading of Trunk Road 2 Section 1 (M5) between the M5 Viaduct and the Black River Parkway Interchange	2007-2011	Project management of the Basic Assessment and ECO
City of Cape Town. EIA for the proposed Bloubos and Gustrow Roads for the Gordon's Bay and Sir Lowry's Pass Development Areas, Cape Town	2007-2011	Project management of the Scoping and EIA
Kwezi V3 (Pty) Ltd for WCPA (Dept. of Transport and Public Works). EMPPr for the development of 40 borrowpits for the regraveling of trunk-, main- and divisional roads in the Central Karoo District, Western Cape	2007	Project management of the EMPPr
Jeffares & Green (Pty) Ltd for WCPA (Dept. of Transport & Public Works). BA for the proposed upgrading of Main Road 531, regravelling of Main Road 534 and development of 10 borrowpits in the Redelinghuys area, Western Cape	2006-2009	Project management of the Basic Assessment
South African National Roads Agency Limited. EIA for the proposed N2 Wild Coast Toll Road, Eastern Cape to Kwa-Zulu Natal	2005-2011	Co-project manager for the revised EIA
HHO Africa for PGWC (Department of Transport). EIA, EMP and ECO for the upgrading of the road between Gansbaai and Bredasdorp	2005-2010	Project management of the EIA, EMP and ECO

Project	Date	Jonathan's Role
BKS (Pty) Ltd for PGWC (Department of Transport). Scoping Study for the proposed rehabilitation of the N2 between Modderdam Road and Airport Interchange, Cape Town	2005-2007	Undertook the Scoping Study
Protea Parkways Consortium and South African National Roads Agency Limited. EIA for the proposed Winelands N1N2 Toll Highway, Western Cape	2002-2009	Project management of the EIA
PAWC – Roads. CEMP and ECO for the construction of Phase 2 and 3 of the TR31 between Worcester and Robertson	1999-2004	Compilation of CEMP and project management of the ECO
<b>Landfill Sites and Waste Water Treatment Works</b>		
City of Cape Town. Supplementary EIA for a proposed regional landfill site for the City of Cape Town	2010-2013	Project management and compilation of the EIA
Arcus Gibb (Pty) Ltd for Theewaterskloof Municipality. Scoping Study and EIA for the proposed upgrading of the Grabouw Wastewater Treatment Works, Western Cape	2008-2011	Project management and quality control of the Scoping Study and EIA
City of Cape Town. EIA for the proposed new regional landfill site for the City of Cape Town	2001-2007	Project management, quality control, public participation and report drafting of the EIA
City of Cape Town. EIA for the proposed licensing of the Bellville South Waste Disposal Site, Cape Town	1999-2001	Project management of the EIA
Cape Agulhas Municipality, Struisbaai Office. EIA for the proposed regional solid waste disposal site for Struisbaai, L'Agulhas and Suiderstrand	1999-2001	Co-managed the EIA
Mossop Western Leathers. EIA for the proposed closure of the Hermon Road Waste Disposal Site, Wellington	1998	Project managed and compiled the EIA
Greater Hermanus Municipality. Regional waste study for the Hermanus Kleinmond and Bot River region, Hermanus	1997	Process facilitation of a regional waste study
Kleinmond Municipality. Scoping Study for the selection of a new waste disposal site to serve the area between Rooi-Els and Kleinmond, Kleinmond	1996	Facilitation of the Scoping Study
Southern Natal Joint Services Board. EIA procedure (from initial assessment to comments report) for the siting of two regional landfill sites in southern Natal	1994	Project managed and compiled the EIA
<b>Water and Sewage Pipelines</b>		
BVi Consulting Engineers Western Cape (Pty) Ltd. BA for the proposed upgrading of the Bayside Canal and development of a stormwater pipeline for the Big Bay outfall system in the Central and Western catchment of the Blaauwberg development area, Western Cape	2015-ongoing	Project management and quality control of the BA
Jeffares & Green (Pty) Ltd for Stellenbosch Municipality. BA for the proposed Jamestown bulk water supply pipeline and reservoir	2012-2013	Project management of the Basic Assessment
City of Cape Town. BA for the proposed bulk water system for the Gordon's Bay Development Area	2007-2009	Project management of the Basic Assessment
City of Cape Town. BA for the proposed extension of the Trappies Sewer line, Gordon's Bay	2007	Project management of the Basic Assessment
Velddrift Salt Company (Pty) Ltd. Scoping Study, EMP and ECO for a seawater pump station and pipeline to augment water supply to the Velddrift Salt Company's operation north of Laaiplek	2003	Project management of the Scoping Study, EMP and ECO
Entech Consulting Engineers for the Boland District Municipality. EIA for the proposed Eerste River Bulk Sewage Scheme	1999-2001	Project management of the EIA

Project	Date	Jonathan's Role
<b>Rivers and Wetlands</b>		
City of Cape Town. Scoping Study and EIA for the proposed Sir Lowry's Pass River flood alleviation and upgrade in the Gordon's Bay and Sir Lowry's Pass Development Area	2007-2011	Project management of the Scoping Study and EIA
Stewart Scott International for City of Cape Town: Helderberg Administration. EIA, CEMP and ECO for the proposed Lourens River Flood Alleviation Measures, Western Cape	2000-2001	Project management of the EIA, CEMP and ECO
Southern Waters for South Peninsula Municipality. Public consultation for the development of a Management Plan for Zeekoevlei/Rondevlei	2000	Facilitated the public consultation process
Helderberg Municipality/Cape Metropolitan Council. EIA for the proposed upgrade of the Moddergat River, Macassar	1999	Project management of the EIA
<b>General Industries</b>		
International Mining & Dredging Holdings Ltd. EIA for a Mining Right Application for an offshore diamond concession in Block 2C off the West Coast of South Africa	2015-ongoing	Project management and quality control of the EIA
International Mining & Dredging Holdings Ltd. BA for marine sediment sampling activities in Diamond Mining Concession Areas off the West Coast, South Africa	2014-2015	Project management of the and quality control of the BA
Saldanha Bay IDZ Licencing Company. EIA for the proposed establishment of an Oil and Gas Offshore Supply Base at the Saldanha Bay IDZ	2013-2016	Project management of the EIA
ZAA Engineering Projects and Naval Architecture (Pty) Ltd for Transnet National Ports Authority. Environmental input into the pre-feasibility study for the proposed offshore LPG handling and storage facility, Port of Saldanha, Western Cape	2011	Environmental input into the pre-feasibility study
Yachtport SA (Pty) Ltd. BA and ECO for the proposed Marine Lift Facility in the Small Craft Harbour, Port of Saldanha	2009-2011	Project management of the Basic Assessment and ECO
FerroMarine Cape. ECO for the construction of an Oil and Gas Service Hub in the Port of Cape Town	2010-2011	Project management of the ECO
Richmond Business Park Joint Venture Consortium. EIA for the proposed Richmond Park Development for the project facilitation joint venture on behalf of the successful land claimants, Cape Town	2010-2012	Project management of the EIA
SAB Maltings (Pty) Ltd. EIA Waste Management Licence Application for the construction of a Steep Water Purification Plant (Two-phased Membrane Bioreactor and Reverse Osmosis system) at the South African Breweries' Maltng Plant, Caledon, Western Cape	2008-2011	Project management of the EIA and Waste Management Licence Application
Savannah Environmental (Pty) Ltd. Environmental Review of the EIA and EMP for the proposed Eskom Wind Energy Facility and associated infrastructure at a site in the Western Cape Province	2007-2008	Environmental review of the EIA and EMP
Finavera Renewables Ltd. Environmental input for a site pre-selection exercise for a proposed Wave Energy Project off the southwest coast of South Africa	2007-2008	Project management of the Environmental input
Irvin & Johnson Limited. BA for a proposed offshore cage aquaculture project, Mossel Bay	2007-2008	Project management of the Basic Assessment
PetroSA (Pty) Ltd. EIA for the upgrading of the PetroSA refinery near Mossel Bay for the conversion to 100% unleaded fuel production	2003-2005	Project management of the EIA

Project	Date	Jonathan's Role
Namakwa Sands Ltd. Initial environmental investigation for the proposed extension of Namakwa Sands' mining, mineral separation and smelting operations	2003	Project management of the initial environmental investigation
Caltex SA (Pty) Ltd. EIA for the processing and disposal of Sulphur produced at the Milnerton Oil refinery	2001-2002	Project management of the EIA
PetroSA (Pty) Ltd. Compilation and implementation of construction-phase Environmental Management Plan for the Low Aromatic Distillate Project, Voorbaai Tank Farm Mossel Bay	2001	Compilation and implementation of construction-phase EMP
Caltex SA (Pty) Ltd. EIA for increase in flow-rate of the Saldanha-Milnerton crude oil pipeline	2000	Project management of the Scoping Study and EIA permit compliance
LAMA International Contractors. EMP for the extension of the Sappi Saiccor marine outfall pipeline, Umkomaas	1996	Compilation and management of the EMP
<b>Environmental Control</b>		
AECOM SA (Pty) Ltd for SANRAL (SOC) Ltd. ECO services for the improvement of the National Road 7 between Abbotsdale and the Voortrekker Interchange, Western Cape	2015-ongoing	Project management and quality control
Bergstan SA Consulting and Development Engineers (Pty) Ltd for WCG: Department of Transport and Public Works. ECO services for the storm damage repair of slopes and roadway on MR101 between Simonstown and Smitswinkel Bay, Western Cape	2015-ongoing	Project management and quality control
Bergstan SA Consulting and Development Engineers (Pty) Ltd for WCG: Department of Transport and Public Works. ECO services for the repair and resurfacing of Victoria Road (MR103) km 2.1 to km 4.75 between Oudekraal and Llandudno, Western Cape	2014-2015	Project management and quality control
HHO Africa (Pty) Ltd for WCPA (Dept. of Transport and Public Works). ECO for the upgrading of the Koeberg Interchange	2008-2011	Project management of the ECO
BKS (Pty) Ltd for City of Cape Town. ECO and EMC facilitation for the upgrading of the N2 Hospital Bend, Cape Town	2008-2010	Project management of the ECO and EMC facilitation
TCTA. ECO for the construction of the Berg River Project, Franschhoek, Western Cape	2005-2008	Project management of the ECO
Table Mountain Aerial Cableway Company. Environmental Management Committee for the construction of the Table Mountain Aerial Cableway, Cape Town	1996-1997	Member of the EMC
<b>Tourism / Resort</b>		
City of Cape Town. Feasibility study for the proposed Monwabisi Coastal Node, Western Cape	2011	Project management
Olympian Developing Company. EIA for the development of a multi-purpose estate on Rem. Farm 681, Firgrove/Macassar, Western Cape (Sitari Fields Golf Estate)	2003-2005	Project management of the EIA
Lourensford Winery. Construction and Operation EMP for a wine cellar on Lourensford Estate in Somerset West, Western Cape	2002-2003	Project management of the Construction and Operation EMPs
Johnnic Property Development (Pty) Ltd. EIA for the proposed development of the Melkbosstrand Golf Village (Atlantic Beach), Melkbosstrand	1997	Project management of the EIA
Table Mountain Aerial Cableway Company. IEM process and EIA for the proposed upgrading of the Table Mountain Aerial Cableway, Cape Town	1996	Project management of the IEM process and EIA

Project	Date	Jonathan's Role
<b>Housing Development Projects</b>		
Peter Koekemoer. Section 24G process for House Koekemoer ERF 3446, Oranjezicht, Western Cape	2015-ongoing	Project management and quality control of the Section 24G EIA
Martin Kelly. BA for the proposed subdivision and rezoning of a portion of Erf 1, Simon's Town (Glencairn)	2006-2011	Project management and compilation of the Basic Assessment
Cape Town Community Housing Company. BA for the proposed rezoning and subdivision of Erf 23300, Maitland (Royal Maitland Phase 3)	2006-2007	Project management of the Basic Assessment
Rocklands Eco Estate (Pty) Ltd. BA for the proposed rezoning and subdivision of parts of Portions 1 and 2 of Farm 1020, Simon's Town (Rocklands Farm), Western Cape	2005-2011	Project management and compilation of the Basic Assessment
Mr Gavin Wurz. Scoping Study for the proposed rezoning and subdivision of Farm Rouen on Erven 5100 & 5101, Strand	2004	Project management of the Scoping Study
<b>Other</b>		
Llandudno Surf Lifesaving Club. BA for the proposed extension of the Llandudno Surf Lifesaving Club Boathouse, Llandudno	2007-2010	Project management of the Basic Assessment
Tow Surf South Africa. Environmental input on the affects of tow surfing in terms of noise and emissions	2006	Environmental input
Water Research Commission. Groundwater Licensing Guide to guide groundwater development and use applications	2004-2007	Development of a Groundwater Licensing Guide
P & I Associates (Pty) Ltd. Environmental Assessment for the proposed wreck reduction of the vessel BBC China, Wild Coast	2004	Environmental Assessor
Plattner Racing Stables. Scoping Study, Construction EMP and Operation EMP for the rezoning and development of Farm Rondeberg Flats, No. 116, West Coast	1999-2000	Project management
CSIR. Public consultation for the proposed CSIR gas monitoring laboratory at Cape Point	1994	Public consultation
Thesen & Co. Public consultation for the proposed development options of Thesen Island, Knysna	1994-1996	Public consultation
<b>Publications</b>		
R Parsons, L Eichstadt, J Crowther, J Blood. (2008) "Application Procedure for the Development and Use of Groundwater". WRC Report No. 1510/1/08.		
Shippee K., Campbell H.M. and Crowther J. (1997). "Constructing successful environmental management plans for building sites". IAIA '97 Conference, Integrated Environmental Management in Southern Africa: The State of the Art and Lessons Learnt. Pilansberg, South Africa.		
Crowther J. and Dorren D. (1994) "Public consultation in the search for regional landfill sites, South Coast Natal". Wastecon '94 All-Africa Congress, Somerset West, South Africa.		
Hendry R W, Crowther J and Homes R (1990) "Stabilisation of Rock Cuttings on the Florence to Worcester Section of the National Route N1, South Africa". International Society for Rock Mechanics, International symposium on Static and Dynamic Considerations in Rock Engineering, Swaziland.		
Crowther J., Parsons R. and Palm J. (1986). "Experience of Public Participation in developing new waste disposal sites". Wastecon '96 International Congress. Convened by the Institute of Waste Management, Durban, South Africa.		



herewith certifies that

**Jonathan Crowther**

Registration number: 400145/93

is registered as a

**Professional Natural Scientist**

in terms of section 20(3) of the Natural Scientific Professions Act, 2003  
(Act 27 of 2003)

in the following field(s) of practice (Schedule I of the Act)

Environmental Science

22 November 1993



22 November 1993

Pretoria

President

Executive Director



The Interim Certification Board  
For  
Environmental Assessment Practitioners  
of  
South Africa

Jonathan Crowther

was certified as an

**ENVIRONMENTAL ASSESSMENT  
PRACTITIONER**

on this 27th day of November 2003

Chairperson

Secretary



Institute of  
Waste Management  
of Southern Africa

# Institute of Waste Management of Southern Africa

Established to promote the science and practice of waste management  
A professional association for the waste management sector

## CERTIFICATE OF MEMBERSHIP PRESENTED TO

Jonathan Crowther

as a

Member

Membership Number: 30195052

  
President



Valid until 30 June 2017

For validity of membership please consult [www.wmsa.co.za](http://www.wmsa.co.za)



**Jeremy Blood**  
Senior Environmental Consultant



**Curriculum Vitae**

**Qualifications**

Pr.Sci.Nat.	2006	Registered as a Professional Natural Scientist - Environmental Scientist (Reg. no. 400164/06)
MSc	2006	Masters in Conservation Ecology (Stellenbosch University). Cum Laude. Thesis: Monitoring rehabilitation success on Namaqua Sands heavy minerals mining operation, Namaqualand, South Africa.
CEAPSA	2003	Certified as an Environmental Practitioner with the Interim Certification Board for Environmental Assessment Practitioners of South Africa
BSc (Hons)	1995	Honours in Botany (Rhodes University). Academic colours.
BSc	1994	Majors in Botany and Zoology (Rhodes University)

**Key Areas of Expertise**

Key areas of Jeremy's expertise are summarised below.

Environmental Assessments	Basic Assessments (BA) Environmental Impact Assessments (EIA) Environmental management programmes and plans (EMPs) Environmental authorisations, permits and licenses
Stakeholder Management	Stakeholder engagement Facilitation of public participation processes Liaison with government and non-government organisations
Environmental auditing and monitoring	EMPs Environmental Control Officer (ECO)

**Summary of Experience and Capability**

Jeremy has been working as an Environmental Assessment Practitioner since 1999 and has project managed a number of large-scale projects covering a range of environmental disciplines, including EIAs, EMPs, Environmental Auditing and Monitoring, and ECO related work in South Africa, Namibia, Mozambique and Kenya.

He has expertise in a wide range of projects relating to oil / gas and mining (heavy mineral mining and borrowpits), housing/industrial developments and infrastructure projects (e.g. roads, railway line, power lines and pipelines).

**Recent Project Experience**

Key aspects of Jeremy's recent project experience are summarised below.

Project	Date	Jeremy's Role
<b>Oil and gas</b>		
Rhino Oil & Gas Exploration South Africa (Pty) Ltd. EIA for proposed exploration activities in offshore Licence Blocks 3617 and 3717 off the South-West Coast of South Africa	2015-ongoing	Project Consultant, Management and Report Writing
Rhino Oil & Gas Exploration South Africa (Pty) Ltd. EIA for proposed exploration activities in various inshore licence blocks off the South-West Coast of South Africa	2015-ongoing	Project Management and Report Review
PGS Exploration (UK) Ltd. EMP Addendum for a proposed speculative 2D seismic survey off the South Coast of South Africa	2015-ongoing	Project Consultant, Management and Report Writing
Thombo Petroleum. EIA and EMP Addendum for proposed exploration well drilling in Block 2B off the West Coast of South Africa	2014-ongoing	Project Consultant, Management and Report Writing
Murphy Oil Corporation. Environmental Impact Assessment for proposed exploration well drilling in Licence Blocks 2613A and 2613B off the coast of Namibia	2014-ongoing	Project Consultant, Management and Report Writing
Cairn South Africa. EIA and EMP Addendum for exploration well drilling in Licence Block 1 off the West Coast of South Africa.	2013-ongoing	Project Consultant, Management and Report Writing
Sunbird Energy Ltd. EIA and EMP Addendum for the proposed Ibhubesi Gas Project, Western and Northern Cape	2013-ongoing	Management and Report Writing
PGS Exploration (UK) Ltd. EMP Compliance and audit services for a speculative 2D seismic survey off the South Coast of South Africa	2015-2016	Project Consultant and Management
ExxonMobil Exploration and Production South Africa Ltd. Drilling Regulatory Roadmap and Permitting Plan for exploration well drilling off the coast of South Africa	2015	Project Consultant, Management, Legal Review and Report Writing
Anadarko South Africa (Pty) Ltd. Environmental Compliance Report for Exploration Right renewal of Licence Blocks 5, 6 & 7 (ER 12/3/224) off the South-West coast of South Africa	2015	Project Consultant, Management and Report Writing
Anadarko South Africa (Pty) Ltd. Consolidated Environmental Risk Report and Closure Plan for relinquishment of a portion of Licence Blocks 5, 6 & 7 (ER 12/3/224) off the South-West coast of South Africa	2015	Project Consultant, Management and Report Writing
Nabirm Energy Services. EIA and EMP Compliance and audit services for a 2D seismic survey in the offshore portion of Block 2113A in the Walvis Basin off the coast of Namibia	2014-2015	Project Consultant, Management and Report Writing
ExxonMobil Exploration and Production South Africa Limited. Consolidated Environmental Risk Report and Closure Plan for the relinquishment of a portion of the Tugela South Block off the East Coast of South Africa	2014	Project Consultant, Management and Report Writing
CGG Services SA. EMP Compliance and audit services for a speculative 2D seismic survey off the East Coast of South Africa	2014	Project Consultant, Management and Report Writing
Murphy Oil Corporation and TGS-Nopec Geophysical Company ASA. EIA for a proposed 3D seismic survey in Licence Blocks 2613A and 2613B, Lüderitz Basin, off the coast of Namibia	2013-2014	Project Consultant, Management and Report Writing

Project	Date	Jeremy's Role
Tullow Kudu Ltd. EIA for a proposed 3D seismic survey in Licence Blocks 2012B and 2112A, Walvis Basin, off the Coast of Namibia	2013-2014	Project Consultant, Management and Report Writing
Shell South Africa Upstream B.V. EIA and EMP Addendum for proposed Exploration Drilling in the Orange Basin Deepwater Licence Area off the Coast of South Africa	2013-2015	Project Consultant, Management and Report Writing
CGGVeritas Services (UK) Ltd. EMP Compliance and audit services for a speculative 2D seismic survey off the East Coast of South Africa	2013	Project Consultant, Management and Report Writing
Petroleum Geo-Services ASA. EMP for the proposed speculative seismic survey off the South Coast of South Africa	2013	Project Consultant, Management and Report Writing
Anadarko South Africa (Pty) Ltd. EMP Addendum for a proposed seafloor geochemical sampling programme in Petroleum Licence Blocks 5/6 & 7 off the South-West Coast of South Africa	2013	Project Consultant, Management and Report Writing
Anadarko South Africa (Pty) Ltd. EMP for a proposed exploration programme in Block 2C off the West Coast, South Africa	2012-2013	Project Consultant, Management and Report Writing
Impact Africa Limited. EMP for a proposed exploration programme in the Tugela North area off the East Coast of South Africa	2012-2013	Project Consultant, Management and Report Writing
Anadarko South Africa (Pty) Ltd. EMP compliance for a seismic survey in Blocks 5/6 & 7, South-West Coast, South Africa	2012	Project Consultant, Management and Report Writing
Sasol Petroleum International (Pty) Ltd. EMP for a proposed 2D seismic survey programme in the Durban and Zululand Basins off the East Coast of South Africa	2012	Project Consultant, Management and Report Writing
Petroleum Geo-Services ASA. EMP for the proposed speculative seismic survey off the South and East Coast of South Africa	2012	Project Consultant, Management and Report Writing
PetroSA (Pty) Ltd. EMP Amendment for the proposed seismic survey campaign in Block 1, West Coast, South Africa	2012	Project Consultant, Management and Report Writing
Spectrum Geo Ltd. EIA for a 2D seismic survey in various Blocks in the Lüderitz and Walvis Basin Offshore areas, Namibia	2012	Project Consultant, Management and Report Writing
Bayfield Energy Ltd. EMP Amendment for the proposed seismic survey in the Pletmos Inshore Area, South Coast, South Africa	2012	Project Consultant, Management and Report Writing
CGG Veritas Services (UK) Ltd. EMP for proposed speculative seismic survey off the East Coast, South Africa	2012	Project Consultant, Management and Report Writing
Spectrum Geo Ltd. EMP for a proposed speculative seismic survey off the West Coast of South Africa	2012	Project Consultant, Management and Report Writing
Signet Petroleum Ltd. EIA for a proposed 2D and 3D seismic survey in Block 2914B off the coast of Namibia	2011	Project Consultant, Management and Report Writing
PetroSA (Pty) Ltd. EMP for a proposed seismic survey campaign in Blocks 5 & 6, South-West Coast, South Africa	2011	Project Consultant, Management and Report Writing
UNX Energy Corp. EIA (including EMP for a proposed 3D seismic survey programme in the southern Orange Basin (Licence Blocks 2713A/2713B and 2815) off the coast of Namibia	2010-2011	Project Consultant, Management and Report Writing
HRT Oil Gas Ltd. EIA for a proposed 3D seismic survey programme in the central Walvis Basin (Licence Blocks 2112B/2212A) and southern Orange Basin (Licence Blocks 2813A/2814B) off the coast of Namibia	2010-2011	Project Consultant, Management and Report Writing

Project	Date	Jeremy's Role
PetroSA (Pty) Ltd. Basic Assessment and EMP for PetroSA's proposed well drilling programme in Block 1 (ER83)	2010-2011	Project Consultant, Management and Report Writing
Bayfield Energy Limited. EMP for a proposed 2D seismic survey in the Pletmos Inshore area off the South Coast of South Africa	2010	Project Consultant, Management and Report Writing
Silver Wave Energy (Pte) Ltd. EMP for a proposed 2D seismic survey in Blocks 2931C, 2931D, 2932A and 2932C, East Coast, South Africa	2010	Project Consultant, Management and Report Writing
BHP Billiton Petroleum. Update EMP for conducting seismic surveys and exploration well drilling in Petroleum Licence Block 3A/4A, West Coast, South Africa	2009-2010	Report Writing
PetroSA (Pty) Ltd. Compilation of offshore performance assessments for Block 9, Block 11a, F-A Gas Field, E_M Gas Field, South Coast Gas Gas Field, Sable Oil Field and Orixi (E-BT)/Oryx (E-AR) Oil Fields	2009	Project Consultant and Report Writing
PetroSA (Pty) Ltd. EIA and EMP for the proposed development of the F-O Gas Field in Petroleum Licence Block 9, South Coast, South Africa	2008-2012	Project Consultant, Management and Report Writing
PetroSA (Pty) Ltd. EMP for PetroSA's proposed 3D seismic survey in Block 1 (ER83)	2008	Project Consultant, Management and Report Writing
Forest Exploration International (SA) (Pty) Ltd. EIA and EMP for the proposed development of the Ibhubezi Gas Field and associated infrastructure in Licence Block 2A off the west coast of South Africa	2006-2007	Project Consultant, Management and Report Writing
PetroSA (Pty) Ltd. Close-out report for a workover on well E-M03P in the E-M mining lease off the south coast of South Africa	2005	Report Writing
PetroSA (Pty) Ltd. EIA and EMP for PetroSA's South Coast Gas project in Petroleum Licence Block 9 off the south coast of South Africa	2004-2006	Project Consultant and Report Writing

#### Mining

Velddrift Salt Company (Pty) Ltd. EMP for the salt mine on Portion 69 of Farm 110, Velddrift, Western Cape	2012	Project Consultant, Management and Report Writing
Green Flash Trading 251 & 257 (Pty) Ltd. Update EMP for the proposed prospecting for minerals off the West and South-West Coast of South Africa	2012	Project Consultant, Management and Report Writing
Umhlaba Environmental Consulting CC. EMP for the rehabilitation of Afrisam's Sand Mine in Macassar, Western Cape	2011	Project Consultant, Management and Report Writing
White Water Resources Limited. EMPs for ten prospecting applications in an area north of the Olifants River	2009	Project Consultant, Management and Report Writing
Coega Brick. EMP for Coega Brick	2003	Project Consultant, Management and Report Writing
Corridor Sand Limitada. EIA and EMP for the Southern Mining Corporation's Corridor Sands Heavy Mineral Mining Project, Gaza Province, Mozambique	1999-2002	Project Consultant and Report Writing
Kenmare Resources. EMP for the Kenmare Moma Titanium Minerals Project in Nampula Province, Mozambique	2002	Report Writing
Southern Mining Corporation Ltd. Vegetation and floristics specialist report: Corridor Sands Environmental Impact Assessment, Gaza Province, Mozambique	2000	Baseline Assessment and Report Writing

Project	Date	Jeremy's Role
Jones & Wagener for Douglas Colliery. Biological survey of Middeldrift, Vandyksdrift and Rietfontein of Douglas Colliery	1999	Project Consultant and Report Writing
Jones & Wagener for Optimum Colliery. Biological survey of Kromdraai and a portion of Zevenfontein of Optimum Colliery	1999	Project Consultant and Report Writing
BESC consulting. Biological survey of a proposed quarry near Willowvale, Transkei	1999	Baseline Assessment and Report Writing

**Roads and related infrastructure**

HHO Africa for Provincial Government of the Western Cape: Transport and Public Works. ECO for the third phase of construction (km 7.8 to km 36.0) of the road between Gansbaai and Bredasdorp, Western Cape	2013-2015	Project Consultant, Management and ECO
HHO Africa (Pty) Ltd for WCG: Department of Transport & Public Works. BA for a proposed new causeway near Elim and a new box culvert near Baardskeedersbos / Pearly Beach Intersection, Western Cape	2014	Project Consultant, Management and Report Writing
EFG Engineers (Pty) Ltd for WCG: Department of Transport & Public Works. BA for the proposed rehabilitation and upgrading of the TR28/2 between Hermanus and Stanford, Western Cape	2103-2014	Project Consultant, Management and Report Writing
HHO Africa (Pty) Ltd. Screening, BA and EMP for nine proposed borrowpits for Phase 3 of the Gansbaai-Bredasdorp Road Upgrade Project, Western Cape	2012	Project Consultant, Management and Report Writing
Bergstan South Africa for Provincial Government of the Western Cape: Department of Transport and Public Works. BA for the proposed repairs to two flood damaged bridges in the Worcester and De Doorns area	2010	Project Consultant and Management
HHO Africa for Provincial Government of the Western Cape: Transport and Public Works. EMP for Phase 3 of the upgrading of the Gansbaai to Bredasdorp Road, including borrowpits	2010	Project Consultant, Management and Report Writing
HHO Africa for Provincial Government of the Western Cape: Transport and Public Works. ECO for the second phase of construction (km 0 to km 7.8) of the road between Gansbaai and Bredasdorp, Western Cape	2009-2010	Project Consultant, Management and ECO
PD Naidoo & Associates (Pty) Ltd for Western Cape Provincial Administration (Dept. of Transport & Public Works). EMP for the development of 17 strategic borrowpits for the regravelling of trunk-, main- and divisional roads in the Overberg District	2006-2008	Project Consultant, Management and Report Writing
BKS (Pty) Ltd / Goba (Pty) Ltd Joint Venture for Provincial Government of the Western Cape: Department Transport and Public Works. ECO for the rehabilitation of bridges and major culverts in the Calitzdorp, Oudtshoorn and De Rust area	2006-2008	Project Consultant, Management and ECO
HHO Africa for Provincial Government of the Western Cape: Transport and Public Works. EMP for Phase 2 of the upgrading of the Gansbaai to Bredasdorp Road, including borrowpits	2006	Project Consultant, Management and Report Writing
BKS (Pty) Ltd / Goba (Pty) Ltd Joint Venture for Provincial Government of the Western Cape: Department Transport and Public Works. Construction EMP for the rehabilitation of bridges and culverts in the Calitzdorp, Oudtshoorn and De Rust area	2005	Project Consultant, Management and Report Writing
HHO Africa for Provincial Government of the Western Cape: Transport and Public Works. ECO for the first phase of construction (Elim to Mierekraal) of the road between Gansbaai and Bredasdorp, Western Cape	2005-2008	Project Consultant, Management and ECO

Project	Date	Jeremy's Role
HHO Africa. EMP for 15 proposed borrowpits for the upgrading of the Gansbaai to Bredasdorp Road	2004-2005	Project Consultant, Management and Report Writing
MBB Engineers. Scoping study for the upgrading of a causeway over the Kat River, Fairbairn, Eastern Cape	2000	Project Consultant and Report Writing
Prestedge, Retief, Dresner & Wijnberg. Stabilisation specifications for work areas and roads within the proposed Ngqura (ex Coega) harbour area	1999	Report Writing

**Landfill sites and waste water treatment works**

V3 Consulting Engineers. Scoping study for Phase II of the upgrading of the Bedford reticulation system and current sewage works	2000	Project Consultant and Report Writing
V3 Consulting Engineers. Scoping study for the construction of a waterborne sewerage reticulation system in Nyarha and Goodwin Park, Bedford, and for the rehabilitation and upgrading of the sewerage treatment works	1999	Project Consultant and Report Writing
Department of Public Works. Scoping study for the proposed car park and ablation facilities at Hole-in-the-Wall	1999	Report Writing
Department of Public Works. Scoping study for the proposed car park and ablation facilities at Coffee Bay	1999	Report Writing

**Water and sewage pipelines**

Velddrift Salt Company (Pty) Ltd. Scoping study, EMP and ECO for a seawater pump station and pipeline to augment water supply to the Velddrift Salt Company's operation north of Laaipelek	2003-2009	Project Consultant, Management and Report Writing
City of Cape Town: Tygerberg Region. ECO for the Durbanville North Bulk Water Supply (Gravity Main Phase 2)	2004-2005	Project Consultant, Management and ECO

**Rivers, dams and wetlands**

Royal HaskoningDHV (Pty) Ltd for City of Cape Town. ECO for Phase 1H of the Lourens River Flood Alleviation project, Somerset West	2016-ongoing	Project Consultant and Management
Royal HaskoningDHV (Pty) Ltd for City of Cape Town. ECO for Phase 1G of the Lourens River Flood Alleviation project, Somerset West	2015	Project Consultant and Management
Royal HaskoningDHV (Pty) Ltd for City of Cape Town. BA for proposed new stormwater outlet structures, litter traps and detention pond along the Lourens River, Somerset West	2014-2015	Project Consultant, Management and Report Writing
SSI Engineers and Environmental Consultants (Pty) Ltd. ECO for Phase 1E of the Lourens River Flood Alleviation project, Somerset West	2011-2012	Project Consultant, Management and ECO
SSI Engineers and Environmental Consultants (Pty) Ltd. ECO for Phase 1D of the Lourens River Flood Alleviation Measures, Somerset West	2008-2010	Project Consultant, Management and ECO
Sujean Investments (Pty) Ltd. Basic Assessment for the proposed Kuils River flood alleviation measures for Erf 38771, Bellville	2010-2011	Project Consultant, Management and Report Writing
Nsele Trading 44 (Pty) Ltd. Scoping Checklist for the proposed diversion of a canalised stream into three new retention ponds on the Remainder of Farm 1407, Sunnydale (Noordhoek)	2004-2006	Project Consultant, Management and Report Writing



Project	Date	Jeremy's Role
<b>Housing developments</b>		
Cape Town Community Housing Company (Pty) Ltd. ECO services for the Morgen's Village 3 and Westcape Precincts, Mitchell's Plain, Western Cape	2010-2015	Project Consultant, Management and ECO
South African Dutch Development (Pty) Ltd. ECO services for the proposed residential development on Erf 1366 (Beverley Estate) and Erf 5540 (Jubilee Park), Eerste Rivier	2012	Project Consultant, Management and ECO
City of Cape Town (Directorate: Human Settlements). ECO for the construction of the Bardale Housing Scheme (Phases 2 to 4) on the Remainder of the Farm Stellenbosch No. 451 (Bardale), Mfuleni	2009-2012	Project Consultant, Management and ECO
Sovereign Seekers Investments 77 (Pty) Ltd. BA for the proposed rezoning and subdivision of Erf 4870, Karbonkelberg, Hout Bay	2007-2012	Project Consultant, Management and Report Writing
The Hope of Africa Foundation. BA for the proposed rezoning and subdivision of Erf 5540, Eerste River	2007-2008	Project Consultant, Management and Report Writing
City of Cape Town (Directorate: Human Settlements). EIA for the proposed rezoning and subdivision a portion of the Driftsands Nature Reserve to consolidate and upgrade the existing informal settlements of Green Park and Los Angeles	2006-2012	Project Consultant, Management and Report Writing
Tech-Sure Fin cc. BA for the proposed rezoning and subdivision of Erf 1366, Eerste River	2006-2007	Project Consultant, Management and Report Writing
City of Cape Town (Directorate: Human Settlements). Construction EMP and ECO for the construction of the Bardale Housing Scheme on the Remainder of the Farm Stellenbosch No. 451 (Bardale), Mfuleni.	2005/7	Project Consultant, Management, Report Writing and ECO
Target Shelf 151 cc Property Developers. EIA for the proposed rezoning and subdivision of Erf 1480, Hout Bay	2005-2006	Project Consultant, Management and Report Writing
Ahmed Janahi Architects. EIA for the proposed rezoning and consolidation of Erf 1126, 1127 and 1128, Hout Bay	2004-2005	Project Consultant, Management and Report Writing
The Hope of Africa Foundation. Scoping Study for the proposed rezoning and subdivision of Erf 5540, Eerste River	2004-2005	Project Consultant, Management and Report Writing
Lezmin cc. EIA for the proposed rezoning and subdivision of Erf 1156, Hout Bay	2003-2005	Project Consultant, Management and Report Writing
Bellemar Properties. EIA for the proposed rezoning of Erf 1127 and 1128, Hout Bay	2003-2004	Project Consultant, Management and Report Writing
SRK consulting, Cape Town. Biological survey of the wetland on the Sanderlings site, Plettenberg Bay	1999	Baseline Assessment and Report Writing
<b>General industries</b>		
Clay Industry cc. Application to amended Atmospheric Emission Licence in terms of the National Environmental Management: Air Quality Act	2015	Project Consultant, Management and Application completion
Solarhybrid AG, Germany. Scoping study for the proposed Development of Skeyfontein Photovoltaic power plant and power lines near Postmasburg, Northern Cape	2011-2012	Project Consultant, Management and Report Writing
Business Venture Investments 1421 (Pty) Ltd. EIA for the proposed Development of a Photovoltaic power plant and power line near De Aar & Prieska, Northern Cape	2011-2012	Project Consultant, Management and Report Writing
IlangaPower (Pty) Ltd. BA for a proposed Solar Cell Manufacturing Factory, Sacks Circle, Bellville	2008	Project Consultant, Management and Report Writing

Project	Date	Jeremy's Role
Irvin & Johnson Limited. BA for a proposed aquaculture project, Mossel Bay	2007-2009	Project Consultant, Management and Report Writing
Eskom Holdings Limited. Environmental compliance audits for the Atlantis and Mossel Bay Open Cycle Gas Turbines	2006-2008	Project Consultant, Auditing and Report Writing
Velddrift Salt Company (Pty) Ltd. Conversion application from an old order mining right from the Velddrift Salt Company's saltworks	2006-2009	Project Consultant, Management and Report Writing
Velddrift Salt Company (Pty) Ltd. Audit of the Velddrift Salt Company's saltworks for the Department of Minerals and Energy	2005	Project Consultant, Auditing and Report Writing
PetroSA. EIA for the conversion of the PetroSA Refinery for 100% Unleaded fuel production	2003-2005	Project Consultant, Management and Report Writing
East London Development Zone Corporation. East London IDZ rezoning EIA: EIA for the rezoning of land from Agriculture to General Industry	2000-2001	Project Consultant and Report Writing
The East London Development Zone Corporation. Vegetation survey and sensitivity map of the land on the West Bank for the proposed East London Industrial Development Zone	2001	Baseline Assessment and Report Writing
Coega Development Corporation. EIA for the Rezoning of the Core Development Area from Agriculture to Special Purposes	1999-2000	Project Consultant and Report Writing
<b>Railways</b>		
Corridor Sands Limitada. EIA f and EMP or the Southern Mining Corporation's Corridor Sands Rail link, Gaza Province, Mozambique	2002	Project Consultant, Management and Report Writing
Corridor Sands Limitada. Vegetation and floristics specialist report: Corridor Sands Rail link Environmental Impact Assessment, Gaza Province, Mozambique	2001	Baseline Assessment and Report Writing
<b>Power lines</b>		
Electricity Supply Corporation of Malawi. Scoping study for the Mozambique – Malawi 220km interconnection 220 / 400kV power line, Malawi	2003	Project Consultant, Management and Report Writing
Corridor Sands Limitada. EIA and EMP for the SMC Corridor Sands Power Line, Gaza Province, Mozambique	2001/2	Project Consultant, Management and Report Writing
Eskom. Scoping study for the construction and operation of the East London Industrial Development Zone power supply	2002	Project Consultant and Report Writing
Eskom. Scoping study for construction and operation of Eskom's Trollip scheme (22kV power line), Cape St. Francis	2002	Project Consultant, Management and Report Writing
Kenmare Resources. Vegetation and floristics specialist report: Kenmare Moma Power line Environmental Impact Assessment, Nampula Province, Mozambique	2002	Baseline Assessment and Report Writing
Corridor Sands Limitada. Vegetation and floristics specialist report: Corridor Sands Power line Environmental Impact Assessment, Mozambique	2001	Baseline Assessment and Report Writing
Eskom. Vegetation survey of the corridor for the proposed Eskom 400kV power line between Poseidon and Albany substations	2000	Baseline Assessment and Report Writing
<b>Resort and tourism</b>		
Van Horsten Property Holdings Pty Ltd. Pre-feasibility assessment for the proposed elephant park resort, Maputo Special Reserve, Mozambique	2003	Project Consultant and Report Writing

Project	Date	Jeremy's Role
<b>Other</b>		
Attfund Limited. EMP for Willowbridge North and South, Western Cape	2011	Project Consultant and Report Writing
Brights Hardware. BA for the proposed rezoning of Portion of Erf 10565 (POS), Boston, Cape Town	2006-2007	Project Consultant, Management and Review
Mini-Cape Developments (Pty) Ltd. Scoping Checklist and EMP for the proposed relocation of the Old Oak Bowling Club to a portion of public open space on Erf 2225, Bellville	2005-2006	Project Consultant, Management and Report Writing
Attfund Limited. EMP and ECO for the construction and operation of the Willow Village Lifestyle Centre on Erf 1201 (portion of Erven 975 & 976) Kenridge, Bellville	2005-2007	Project Consultant, Management and ECO
Mini-Cape Developments (Pty) Ltd. ECO for the construction of the Willowbridge Shopping Centre	2004-2007	Project Consultant, Management and ECO

**Publications**

Blood, J.R., Van Schalkwyk, S.J., Cloete, S.W.P. & Brand, Z. (1998). Embryonic deaths in relation to water loss of artificially incubated ostrich eggs. Proceedings of the Second International Ratite Congress.

Salih, M.E., Brand, T.S., Van Schalkwyk, S.J., Blood, J., Brand, Z. & Akbay, R. (1998). The effect of dietary fibre level on the production of growing ostriches. Proceedings of the Second International Ratite Congress.

Salih, M.E., Brand, T.S., Van Schalkwyk, S.J., Blood, J.R., Pfister, B. & Akbay, R. (1998). Number of cellulolytic bacteria in the gastro-intestinal tracts of ostriches fed diets with different fibre levels. Proceedings of the Second International Ratite Congress.

Brand, Z., Van Schalkwyk, S.J., Cloete, S.W.P. & Blood, J.R. (1998). The effect of pre-heating of ostrich eggs prior to storage and setting in commercial hatcheries. Proceedings of the Second International Ratite Congress.

Van Schalkwyk, S.J., Brand, Z., Cloete, S.W.P. & Blood, J.R. (1998). The influence of different disinfection protocols on the hatching performance of ostrich eggs. Proceedings of the Second International Ratite Congress.





The Interim Certification Board  
For  
Environmental Assessment Practitioners  
of  
South Africa

Jeremy Russell Blood

was certified as an

**ENVIRONMENTAL ASSESSMENT  
PRACTITIONER**

on this 14th day of July 2003

Chairperson

Secretary

Michael Jones  
Commissioner of Oaths  
Practising Attorney  
Republic of South Africa  
Roeland Square, Roeland Street  
Cape Town 8001

CERTIFIED A TRUE  
AND EXACT COPY  
OF THE ORIGINAL

**Matthew Hemming  
African ESIA Technical  
Discipline Manager**



**Curriculum Vitae**

**Qualifications**

Bachelor of Science (Agriculture)	1999	University of Natal (PMB)
Master of Science by coursework in Conservation Biology	2001	UCT
Certificate Course in the Fundamentals of Project Management	2007	Wits

**Key Areas of Expertise**

Key areas of Matthew's expertise are summarised below.

Management of authorisation/licensing process for projects in waste management, gas exploration, mining and electricity sectors.	Management and undertaking of the process(es) required to inform the authorisation and licensing of projects in terms of legalisation such as the National Environmental Management Act, 1998; National Environmental Management: Waste Act, 2008; National Environmental Management: Air Quality Act, 2004; Minerals and Petroleum Resources Development Act, 2002 and, National Water Act, 1998.
Waste Management	Legal review of waste management activities. Facilitation of licensing processes for waste management activities in terms of the National Environmental Management: Waste Act, 2008. Development of waste management strategy and planning documents.
Enviro-legal advice	Guidance to projects on legal issues and compliance requirements in terms of South African environmental legislation

**Summary of Experience and Capability**

Matthew is an Environmental Assessment Practitioner with SLR and has over 10 years' experience within the environmental consulting field. Matthew is currently the Technical Discipline Manager for the Environmental & Social Impact Assessment team in the African region.

Matthew is well versed in the authorisation and compliance requirements of all South African environmental legislation. His project experience is diverse and he has managed environmental authorisation processes for projects across a wide range of sectors including

mining, gas exploration, electricity generation, infrastructure development and waste management throughout South Africa. In recent years Matthew has focussed on assisting clients with the waste management legislation and on implementing projects up the waste management hierarchy. He also has recent experience in the onshore oil and gas sector.

In addition to this he also conducts or manages feasibility assessments, compliance audits, risk assessments, performance assessments, closure cost estimates and due diligence work.

Matthew's career interests include resource management and efficiency, climate change, environmental project management, conservation and land management and the integration of green energy into development projects. His strengths lie in his sound scientific grounding, a practical approach and his ability to adapt to and learn from new situations. Matthew has a broad background in ecology and experience in tourism, conservation and environmental management from many areas of South Africa.

**Recent Project Experience**

Key aspects of Matthew's recent project experience are summarised below.

Project	Date	Matthew's Role
Rhino Oil and Gas: Onshore Exploration Right Applications in 5 project areas	2015 to 2016	EAP responsible for EIA for applications in terms of MPRDA and NEMA.
EnviroServ's Holfontein Extension: Integrated Waste Management Facility	2014 to 2016	EAP responsible for EIA for applications in terms of NEMA, NEMWA, NWA and NEMAQA
Centlube: S24G Rectification application for blending facility	2015 to 2016	EAP responsible for rectification applications in terms of ECA and NEMA.
Rappa Holdings: Integrated Water Use Licence Application	2015 to 2016	Project manager for IWULA and IWWMP in terms of the NWA.
Integrated Water Use Licence Application for the Shongweni Landfill Site	2012 to 2016	Project manager for IWULA and IWWMP in terms of the NWA.
Energy Oil: S24G Rectification application for Wadeville operation	2014 to 2016	EAP responsible for rectification applications in terms of NEMWA.
Development of Electrical Co-generation Power Plant and Ash Disposal Facility at Scaw Union Junction	2011 to 2015	EAP responsible for EIA for applications in terms of NEMA, NEMWA and NEMAQA
Tronox: Environmental Scope for Port Durnford pre-feasibility study	2015	Environmental scientist responsible for Environmental Sensitivity Study, Risk Review and Findings report
Rectification applications for EnviroServ Mineral Beneficiation facilities	2013 to 2015	EAP responsible for rectification applications in terms of NEMA and NEMWA.
Waste Management Strategy for Kumba's Kolomela Mine	2014	Compile the waste management strategy.
EnviroServ's Chloorkop Municipal Solid Waste to Energy Project	2013 to 2014	EAP responsible for EIA for applications in terms of NEMA, NEMWA and NEMAQA
Waste Management Plan for the Musonoi Copper Mine	2013	Compile the waste management plan.
Tronox: Gap Analysis of Specialist Studies for Port Durnford Mine	2013	Review of specialist studies and project's environmental risks.

Project	Date	Matthew's Role
Afro Energy: Exploration right applications for Coal Bed Methane at Secunda, Memel, Wakkerstroom and Amersfoort	2013	EAP responsible for consultation, environmental assessment and management programme in terms of the MPRDA.
Introduction of Treatment Technologies to Aloes Hazardous Landfill Site	2012	EAP responsible for EIA for application in terms of NEMWA
Introduction of Treatment Technologies to Shongweni Landfill Site	2012	EAP responsible for EIA for applications in terms of NEMWA and NWA

#### Publications

**IAIA Paper**, The EAP, EIAs and our opportunity to effect change, not climate change, Synergistics Energy, 2008

**MSc Dissertation**, The MV Treasure oil spill and its effect on the African Penguin, *Spheniscus demersus*, at Robben Island, South Africa. University of Cape Town, 2001.

**BSc (Agric) Project**, Modelling of powerline impacts on large terrestrial birds in the Karoo, Northern Cape, South Africa. University of Natal, 1999.



**Theo Wicks**  
Environmental Consultant



**Curriculum Vitae**

**Qualifications**

M (Phil)	2010	Environmental Management (University of Stellenbosch)
BSc (Hons)	2006	Geographic & Environmental Science (University of KwaZulu-Natal)
B Soc Sci	2005	Geographic Science (University of KwaZulu-Natal)

**Key Areas of Expertise**

Key areas of Theo's expertise are summarised below.

Environmental Assessments	Project management Basic Assessments (Bas) Scoping & Environmental Impact Assessments (S&EIA) Environmental Management Programmes and Plans Environmental Management Programme Reports (EMPR) Amendment Applications
Stakeholder Management	Public Participation Stakeholder Engagement Engagement with authorities, government departments and non-governmental-organisations
Environmental Auditing and monitoring	Environmental Control Office (ECO)

**Summary of Experience and Capability**

Theo is an Environmental Assessment Practitioner (EAP) and Project Manager with SLR. He has 10 years' experience in civil infrastructure development, waste management, private sector commercial development and the mining sector.

Theo has been fulfilled a number of Project Leader positions for large South African parastatals including Transnet SOC Limited, South African National Road Agency Limited and Umgeni Water and has fulfilled the responsibility of the Environmental Assessment Practitioner on these and many more.

In addition to this, Theo has functioned as the Environmental Control Officer on a number of construction sites.

Prior to joining SLR in 2016, he was he held a position as an Environmental Consultant at JG Afrika (previously Jeffares & Green (Pty) Ltd) and Terratest (Pty) Ltd)

**Recent Project Experience**

Key aspects of Theo's recent project experience are summarised below.

Project	Date	Theo's Role
<b>Roads and related infrastructure</b>		
AECOM (Pty) Ltd for South African National Road Agency Limited. Environmental services for the development of the Ladysmith by-pass road	2015-ongoing	Project Management and EAP
Royal HaskoningDHV (Pty) Ltd for the KwaZulu-Natal Department of Transport. Environmental services for the construction of the Mashunka, Mtateni, Ngubo Access Road & Bridge	2015-2016	Project Management and EAP
Naidu Consulting (Pty) Ltd for South African National Road Agency Limited. Environmental services for the upgrading of National Route 2 Section 27	2015	Project Management and EAP
Nathoo Mbenyane Engineers (Pty) Ltd for South African National Road Agency Limited. Environmental services for the upgrading of National Route 5 Section 4	2015	Project Management and EAP
Royal HaskoningDHV (Pty) Ltd for the KwaZulu-Natal Department of Transport. Environmental services for the upgrading of the P443, D1886 and L1380	2013-2014	Project Management and EAP
Gibb (Pty) Ltd for South African National Road Agency Limited. Environmental services for the upgrading of National Route 11 Section 3	2012	Project Management and EAP
Illiso (Pty) Ltd for South African National Road Agency Limited. Environmental services for the upgrading of the Chota Motala Interchange	2011	EAP
UWP Consulting (Pty) Ltd for South African National Road Agency Limited. Environmental services for the upgrading of National Route 5 Section 2 and 3	2011	EAP
Royal HaskoningDHV (Pty) Ltd for South African National Road Agency Limited. Environmental services for the upgrading of National Route 1 Section 14	2011	EAP
Naidu Consulting (Pty) Ltd for the KwaZulu-Natal Department of Transport. Environmental services for the upgrading of Hlathikhulu	2011	EAP



Project	Date	Theo's Role
<b>Roads and related infrastructure</b>		
River Bridge		
Naidu Consulting (Pty) Ltd for the KwaZulu-Natal Department of Transport. Environmental services for the upgrading of the Kamberg River Bridge	2011	EAP
Royal HaskoningDHV (Pty) Ltd for the KwaZulu-Natal Department of Transport. Environmental services for the construction of the Qudeni Link Road	2008-2009	EAP
Royal HaskoningDHV (Pty) Ltd for the KwaZulu-Natal Department of Transport. Environmental services for the construction of the Nsuze River Bridge	2009	EAP

**Water and Waste Water Infrastructure**

Nathoo Mbenyane Engineers (Pty) Ltd for the Harry Gwala District Municipality. Environmental services for the construction of the Ufafa Water Supply Scheme	2014-2015	Project Management and EAP
Umgeni Water SOC Limited. Environmental services for the upgrading of the Nungwane Pipeline	2014-2015	Project Management and EAP
Worley Parsons SA (Pty) Ltd for the uMgungundlovu District Municipality. Environmental services for the upgrading of the Richmond Waste Water Treatment Works	2012-2013	Project Management and EAP
Makhaotse, Narasimulu & Associates (Pty) Ltd for the Harry Gwala District Municipality. Environmental services for the construction of the Mangwaneni Water Supply Scheme	2012	Project Management and EAP
Worley Parsons SA (Pty) Ltd for the uMgungundlovu District Municipality. Environmental services for the upgrading of the Maqonqo Water Supply Scheme	2012	Project Management and EAP
Umgeni Water SOC Limited. Environmental services for the construction of the Mooi Mpofana Pipeline	2007-2011	EAP

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**Water and Waste Water Infrastructure**

Mhlathuze Water SOC Limited. Environmental services for the construction of the Nsezi Pipeline	2009-2010	EAP
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**Residential, commercial and industrial developments**

Devrog Trust Environmental services for the development Panorama Gardens Business Park	2012-2013	Project Management and EAP
JR Investments (Pty) Ltd Environmental services for the development Edendale Business and Industrial Development	2011-2012	Project Management and EAP
Inkonjane Projects on behalf of the Department of Human Settlements. Environmental services for the development Pomeroy Housing Development	2010-2012	Project Management and EAP
Inkonjane Projects on behalf of the Department of Human Settlements. Environmental services for the formalization of housing in Ward 2, Impendle	2013	Project Management and EAP
Umgeni Municipality. Environmental services for the development of the Nelson Mandela Capture Site	2011	Project Management and EAP

**Rail and Port Infrastructure**

Transnet SOC Limited Environmental services for the Eastward expansion of Pier 1 Phase 2, Port of Durban	2012-2015	Project Management and EAP
Transnet SOC Limited Legislative review of the Environmental Authorization granted for the "Four Phase Development of Port of Durban"(the 1999 Record of Decision)	2015	Project Management and EAP
Transnet SOC Limited Environmental services for the upgrading of the rail line near the tidal gate, Richardsbay coal terminal	2013	Project Management and EAP
Transnet SOC Limited Environmental services for the construction of a locomotive turn	2013	EAP

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**Rail and Port Infrastructure**

around table, Richardsbay

Madan Singh and Associates CC  
on behalf of Prasa.

Legal review of the proposed emergency repair to the Amamzimtoti Rail Line	2013	Legal review and guidance
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**Mining**

Concrete 2000 CC

Application for a Mining Right for a tillite quarry near Stanger	2010-2014	Project Management and EAP
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Afrimat (Pty) Ltd

Updating of the approved EMPRs for the uMfolozi, Hluhluwe, Vryheid, Sunshine Crushers and Ashburton Quarries	2012-2014	EAP
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Wilbat Projects

Application for the reworking of a coal tailings facility near Newcastle	2013-2015	Project Management and EAP
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Afrimat (Pty) Ltd

Application for a Mining Right for a dolerite quarry near Ladysmith	2013	Project Management and EAP
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Caspeco CC

Application for a Mining Right for a clay quarry near Pietermaritzburg	2009-2010	EAP
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**Environmental Control**

Nathoo Mbenyane Engineers (Pty) Ltd for South African National Road Agency Limited. ECO for the upgrading of National Route 5 Section 4

2015-2016	Project Management and ECO
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Gibb (Pty) Ltd for South African National Road Agency Limited. ECO for the upgrading of National Route 11 Section 3

2012-2015	Project Management and ECO
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Illiso (Pty) Ltd for South African National Road Agency Limited. ECO for the upgrading of the Chota Motala Interchange

2012-2013	Project Management and ECO
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Royal HaskoningDHV (Pty) Ltd for the KwaZulu-Natal Department of Transport. Environmental services for the upgrading of the Ndumo Access Road

2010-ongoing	Project Management and ECO
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Royal HaskoningDHV (Pty) Ltd for the KwaZulu-Natal Department of Transport. Environmental services

2009-ongoing	Project Management and ECO
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**Environmental Control**

for the construction of the Qudeni Link Road

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**Edwynn Louw**  
Environmental Scientist



## Curriculum Vitae

### Qualifications

MSc	2015	Environmental Management
BSc Hons	2011	Environmental Management
BSc	2010	Geography and Environmental Management

### Key Areas of Expertise

Key areas of Edwynn's expertise are summarised below.

Environmental Impact Assessment	Have worked on numerous EIA projects for Synergistics Environmental Services on a wide variety of mining projects
Environmental Monitoring	Extensive experience in surface water and groundwater monitoring and assessment, hydrocarbon contamination monitoring and assessment, and noise monitoring.
Compliance Auditing	Have conducted numerous WUL audits, GN.704 auditing, environmental auditing, EMPr compliance.
Water use Licences	Have compiled IWULA applications for numerous projects
Mining Rights and Permitting	Have experience in mining permit and mining right applications.

### Summary of Experience and Capability

Edwynn has a Master's degree from the University of Johannesburg where he focused on the practical application of biodiversity offsets in South Africa. Edwynn's main focus has been in the fields of rehabilitation, impact assessment and mitigation, compliance auditing and environmental monitoring. Edwynn is currently involved in site auditing, water quality monitoring and reporting, hydrocarbon contamination investigation and assessment, noise monitoring, water use licencing, mining right applications, mine closure costing, environmental impact assessment reports and compliance auditing. Edwynn has project experience in South Africa; Mozambique, Democratic Republic of Congo, Malawi and Namibia focusing on environmental compliance in the mining industry. Edwynn has extensive project experience working for numerous mining houses in the Northern Cape.

Edwynn joined the SLR team in March 2013.

### Recent Project Experience

Key aspects of Edwynn's recent project experience are summarised below.

Project	Date	Edwynn's Role
Gravenhage Manganese Project	2011/12	Water quality monitoring and project assistant
Graceview Project	2012/13	Compliance auditing
Agnes Mine	2011/12/13	water quality monitoring
Agnes Mine	2012	EMP and WUL compliance auditing.
Agnes Mine	2012	Performance assessment and rehabilitation plan
Barberton Mines	2012/13	Water use Licencing and water quality reporting
Barberton Mines	2011/12	EIA for Tailings reworking project
Barberton Mines	2012 - 2014	Mine closure costing on an annual basis since 2012.
Evander Gold Mine	2014	Mine closure costing for 2014
Timbavati Project	2012	WULA, Basic assessment.
Tshipi Project	2012/14	Water Quality Monitoring and reporting
Kanyika Niobium Mine Project	2011/12	Project, EIA and Environmental Monitoring assistant.
Abeinsa Solar Plant	2012	Mining permit applications and water quality monitoring.
Tschudi Copper Mine	2012	Environmental Assessment, project assistant.
Holfontein Hazardous Waste Facility	2012/2013	Water use llcencing.
Kolomela Mine	2012/13	Kolomela Mine consolidation basic assessments and water use licencing.
Eye of Africa	2012/2014	Environmental Auditing
Manica Project (Auroch Minerals)	2013	Noise Monitoring
Walvis Bay Salt Refiners	2013	Noise Monitoring
Harmony Gold Mine (Now Evander Gold Mine)	2013	Noise Monitoring

Project	Date	Edwynn's Role
Musonoi Project (Metorex)	2013	Noise Monitoring
Commissiekraal Project	2013	Noise Monitoring
Barberton Mines EMPr Audit	2013	EMP compliance auditing and reporting
Total South Africa	2013	Phase I Assessments, Environmental Site Investigations, and Due Diligence.
Bakubung Platinum Mine (Wesizwe)	2013/2016	Surface and Groundwater Water Quality Monitoring and Reporting
United Manganese of the Kalahari (UMK)	2013/2015	Surface and Groundwater Water Quality Monitoring and Reporting
Kudumane Mine	2013/2015	Surface and Groundwater Water Quality Monitoring and Reporting
Kolomela Mine (Heuningkrantz project)	2013/2014	Surface and Groundwater Water Quality Monitoring and Reporting
Dingleton Host Site Development	2014/2015	Environmental Auditing, Water Quality Monitoring and Reporting
COZA Iron Ore Project	2014/2015	EIA and Water Use Licence
Taung Gold 6 Shaft	2015	EMP Performance Assessment
Kathu Supplier Park	2015	Noise Impact Assessment

### Publications

**2010-** Meeuwis, J.M. Bioremediation as an effective means for oil spill management. A case study of the De Bruyns Sand mine in Muldersdrift. B.Sc. (Hons) Dissertation.

## **APPENDIX 5: PUBLIC PARTICIPATION PROCESS**

Appendix 5.1: PASA correspondence

Appendix 5.2: I&AP database

Appendix 5.3: I&AP notification letter and BID

Appendix 5.4: Advertisements

Appendix 5.5: Notices

Appendix 5.6: Presentation and minutes of information-sharing meetings

Appendix 5.7: Correspondence received during the pre-application public participation process

Appendix 5.8: Draft Scoping Report notification letters

Appendix 5.9: Correspondence received during the draft Scoping Report review and comment period

Appendix 5.10: Comments and Responses Report

**APPENDIX 5.1: PASA CORRESPONDENCE**

# Petroleum Agency SA

Tygerpoort Building - 7 Mispool Street - Bellville 7530 - P.O. Box 6114 Tygervalley 7538 - South Africa  
Tel: +27 21 938 3500 - Fax: +27 21 938 3520  
E-mail: plu@petroleumagency.co.za



13 July 2016

Ref no: 12/3/320 ER

Enquiries: A M Thovhakale: +2721 938 3579  
Email: ThovhakaleM@petroleumagency.co.za

Email: don@badimo.co.za

Donald Ncube  
Afro Energy (Pty) Ltd  
P.O Box 52237  
Saxonwold  
Johannesburg  
2132

Dear Mr. Ncube

## APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM IN TERMS OF SECTION 79 OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT NO. 28 OF 2002) ("THE ACT") VARIOUS FARMS IN FREE STATE AND MPUMALANGA PROVINCES

The above application refers.

Kindly be advised that your application for an Exploration Right, in terms of Section 79 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) ("the Act") to explore for Petroleum and Gas has been accepted.

You are therefore required to comply with Section 79 (4) of the Act, by:

- (a) Submitting an application for Environmental Authorization in terms of Regulation 16 of Environmental Impact Assessment Regulations, 2014 on or before the **12<sup>th</sup> of September 2016**;

Please take note of the following:

- Application form must be completed by an independent Environmental Assessment Practitioner ("EAP"); and
- An application fee of **R10 000.00** or proof of payment must accompany your application.

Directors: M P Fusi (Chairperson)

B Luthi R Nkambule T Rammedzisi T Ramucdzisi L Nengovhela L Mekwe (Acting Executive)

Company Secretary: Adv E Hendricks

Subsidiary of CEF SOC Ltd.

South African Agency for Promotion of Petroleum Exploration and Exploitation SOC Ltd No. 1998/015716/30.



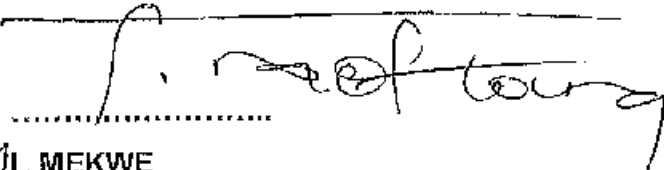
- (b) You must submit a Scoping Report as contemplated in Regulation 21(1) of the Environmental Impact Assessment Regulations, 2014 within 44 days from the date on which you will lodge the Environmental Authorisation application. Please take note that the Scoping Report must be subjected to a public participation process of at least 30 days; and
- (c) You must consult with the landowner, lawful occupier and any interested and affected parties and include the results of the consultation in the Scoping and Environmental Impact Reports.

We have enclosed herewith a copy of an application form for Environmental Authorisation. Also note that the form can be obtained from the Department of Mineral Resources website (i.e. <http://www.dmr.gov.za>).

Furthermore, you are required to provide us with the dates and place you intend to hold public consultation meeting with interested and affected persons.

If you need further information or more clarity do not hesitate to contact us.

Yours sincerely,



L. MEKWE  
ACTING CHIEF EXECUTIVE OFFICER

Directors: M P Fusi (Chairperson)

B Luthuli R Nkambule I Ramuedzisi T Ramuedzisi L Nengovhela I Mekwe (Acting Executive)

Company Secretary: Adv E Hendricks

Subsidiary of GEF SOC Ltd.

South African Agency for Promotion of Petroleum Exploration and Exploitation: SOC Ltd No. 1999/015716/30.



# Petroleum Agency SA

Tygerpoort Building · 7 Mispel Street · Bellville 7530 · P.O. Box 5111 Tygervalley 7536 · South Africa  
Tel: +27 21 938 3500 · Fax: +27 21 938 3520  
E-mail: plu@petroleumagencyrsa.com



30 August 2016

Enquiries: S Mushwana

Tel: (021) 938 3573  
Fax: (021) 938 0811

**OUR REF: 12/3/320 & 12/3/321**

**Attention: Mr Don Ncube**  
Afro Energy  
P.O Box 52237  
Saxonworld  
Johannesburg  
2132

Dear Mr Ncube

**RE: AFRO ENERGY- MOTIVATION TO EXTEND THE SUBMISSION DEADLINE OF THE APPLICATIONS FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF NEMA.**

Your correspondence dated 26<sup>th</sup> of August 2016 has reference.

You are hereby advised that your request to extend the submission deadline of the applications for Environmental Authorisation to the **12<sup>th</sup> of November 2016** is granted.

Please do not hesitate to contact the afore-mentioned should you have any queries.

Yours sincerely

**Tebogo Motloug**  
**Acting General Manager: Regulation**

Directors: MP Fusi (Chairperson)  
B Luthuli R Nkambule T Ramuedzisi L Nengoyhela L Mekwe (Acting Executive)  
Company Secretary: Adv E Hendricks  
Subsidiary of CEF SOC Ltd.

# Petroleum Agency SA

Tygerpoort Building · 7 Mispel Street · Bellville 7530 · P.O. Box 5111 Tygervalley 7536 · South Africa  
Tel: +27 21 938 3500 · Fax: +27 21 938 3520  
E-mail: plu@petroleumagency.co.za



Ref: 12/3/320  
Enquiries: AM Thovhakale +2721 938 3579  
Email: ThovhakaleM@petroleumagency.co.za

11 November 2016

Email: jcrowther@slrconsulting.com  
Cc: donaldncube@badimo.co.za

Mr. Jonathan Crowther  
SLR Consulting (South Africa) (Pty) Ltd  
P.O Box 10145  
Caledon Square  
7905

Dear Mr. Crowther

## APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF REGULATION 16 OF THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 ("EIA REGULATIONS") UNDER NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 ("NEMA")

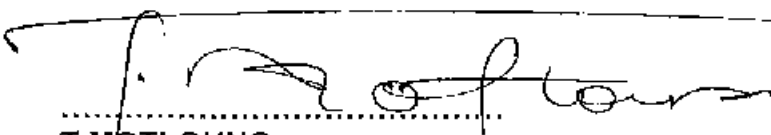
The above application refers.

Your application for Environmental Authorisation in terms of Regulation 16 of the Environmental Impact Assessment Regulations, 2014 (EIA Regulations) is hereby acknowledged.

You are required to submit a Scoping Report as contemplated in Regulation 21(1) of the Environmental Impact Assessment Regulations, 2014 on or before the **13<sup>th</sup> of January 2017**. Please take note that the Scoping Report must be subjected to a public participation process of at least 30 days.

Furthermore, you are required to notify us of the dates and places of public consultation meetings.

Yours sincerely,

  
T MOTLOUNG  
ACTING GENERAL MANAGER: REGULATION

Directors: MP Fusi (Chairperson)

B Luthuli R Nkambule T Rammedzisi L Nengovhela L Meko (Acting Executive)

Company Secretary Adv. F. Hendricks

Subsidiary of CEF SOC Ltd.





**APPENDIX 5.2: I&AP DATABASE**

## I&AP DATABASE

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
1	AJP MOSTERT & SEUNS CC			GOEDGEDACHT	38	13
2	ABJ BOERDERY CC			PHILLIESDEEL	348	0
				VENTERSHOEK	519	1
				LANG EN SMAL	934	0
				SUSSIESDEEL	991	0
				UIJSRUST	992	2
				DANIELSRUST	993	0
3	AFROPULSE 128 PTY LTD			ANNIESDEEL	883	0 (RE)
4	ARET BOERDERY PTY LTD			BOTHA	125	0 (RE)
				TERRA	385	0 (RE)
				BULT FONTEIN	392	1
				MEDINA	516	0 (RE)
				MEDINA	516	1
				HELPMEKAAR	763	0
5	BARTON FARM DEVELOPMENT PTY LTD			SPAN DE KROON	29	4
				SPAN DE KROON	29	5 (RE)
				SPAN DE KROON	29	6
6	BATAUNG TRUST			WELGEGUND	241	0 (RE)
7	BEN BU ELEKTRIES CC			KLEINFONTEIN	431	5
8	BERGPOORT FARM DEVELOPMENT PTY LTD			RUITERSKUIL	25	12
				RUITERSKUIL	25	13
				RUITERSKUIL	25	22
				RUITERSKUIL	25	25 (RE)
				RUITERSKUIL	25	26
				LEEUWKUIL	27	1
				LEEUWKUIL	27	10
				LEEUWKUIL	27	12
				LEEUWKUIL	27	14
				LEEUWKUIL	27	4
				LEEUWKUIL	27	5 (RE)
				LEEUWKUIL	27	7
				LEEUWKUIL	27	8
				LEEUWKUIL	27	9 (RE)
				SPAN DE KROON	29	0 (RE)
				SPAN DE KROON	29	1 (RE)
				SPAN DE KROON	29	3
				ZWARTKOPJES	3	4 (RE)
				RIETVLEI	33	1
				STERK FONTEIN	34	6
POORTJE	6	3				

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
9	BUYS TRUST			HIPKIN'S HOPE	1064	0
10	CMIA BOERDERY PTY LTD			LEVENSBRON	1076	0
11	CHRISMA BOERDERY CC			GORDON	1085	0 (RE)
12	CHRISTO CRONJE TRUST			DRILVLEI	368	0 (RE)
13	CORMAINE BOERDERY CC			POORTJE	6	1
14	DAMSPRUIT BOERDERY PTY LTD			KLAVER VLEY	285	2
				GUTLAND	578	0
				GOODLAND	701	0
				DRUKMEKAAR	712	0 (RE)
15	DANIE TRUST			DAM	104	0
				PAMPOENKRAAL	314	0 (RE)
				BLOOMFIELD	316	0
				BULT FONTEIN	392	0
				DRIEHOEK	761	0
				EBENHAEZER	909	0
16	DEEP BLUE SEA INVESTMENTS CC			SCHAAPBULT	726	1
				VREDEBOND	1175	0
17	DER-COR FAMILY TRUST			KROMDRAAI	91	0 (RE)
				FAIRPLAY	279	0
18	DU PLESSIS TRUST			EBENHAEZER	1193	0
19	EBENHAEZER 1193 LANDGOED PTY LTD			EENSGEVONDEN	647	0
20	EENSGEVONDEN TRUST			BRAKSPRUIT	109	1
21	ELITE MOBILE CC			MANCHESTER	268	1
				ONGEGUND	973	0 (RE)
22	ESTERHUIZEN FAMILY TRUST			SAHALI	1436	0
				ERFDEEL	1335	0 (RE)
23	FCC MEUBILEERDERS CC			ERFDEEL	1335	2
				ERFDEEL	1335	3
				UITKYK	414	1
				UITKYK	414	2
				SPES BONA	415	0 (RE)
				VAN WIJKS PAN	748	0 (RE)
				MALTA	1066	1 (RE)
				MOOIDAM	1116	0
				SWARTWAL	1118	0
				WELKOM	1119	0
				DASPOORT	1280	0
24	FCF FARMING CC			MIDDELPUNT	338	0 (RE)
				VENTERSHOEK	519	0

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				UITKOMST	955	0
				KISMET	1139	1
25	FR EKSTEEN BOERDERY TRUST			PIETER FRANCOIS	1	1
26	FIBRE GLASS & RESIN CO PTY LTD			ZWARTLAAGTE	600	0 (RE)
				ANNIESDEEL	883	1
				KOPPIE ALLEEN	347	3
				ASCENT A	906	0
27	FOLLOW THE STAR TRADING 619 CC			NOOITGEDACHT	958	0 (RE)
				GOEDHEID	306	0 (RE)
				GOEDHEID	306	1
				HARTINGH	429	0
28	FOURIE & FOURIE BOERDERY CC			WITBANK	560	0
				BOOMPIE ALLEEN	1357	0
29	GP DEALE CC			KISMET	1139	0 (RE)
				KISMET	1139	2
				GEWAAG	1184	0 (RE)
				GEWAAG	1184	1
				GEWAAG	1184	2
30	GAYBLACK PTY LTD			ZAMENKOMST	400	0
31	GOEDGEVONDEN EIENDOMME CC			GOEDGEVONDEN	5	0
32	GOLDEN POND TRADING 693 PTY LTD			CERES	284	0 (RE)
33	GROENVLEI LANDGOED TRUST			WILGERIVIERSPRUIT	86	0
34	H S LOURENS TRUST			PAARDENFONTEIN	906	1 (RE)
35	HANAU TRUST			BOTHASRUST	547	0 (RE)
36	HENJA FARMING CC			DRIEKUIL	332	0 (RE)
				DRIEKUIL	332	1
				ZUURING BANK	562	0 (RE)
				LORRAINE	963	0
37	HENTIQ 2669 PTY LTD			SUSANNA	483	2
				ZWAAIHOEK	599	0
				GOEDGENOEG	603	0 (RE)
				GOEDGENOEG	603	1 (RE)
				MIMMIE	781	0
				WELKOM	901	3 (RE)
				WELKOM	901	6
ANNASDEEL	1399	1				
38	HEPBURN BOERDERY CC			MIDDENIN	808	3
				JAKHALSRAND	985	0
				PATRYSHOEK	986	0

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				JAAPIE	987	0
				GOEDGEVONDEN	1071	0
				KLEIN BEGIN	1242	0
39	HIKMA PROPERTIES CC			SAAIPLAAS	54	0 (RE)
				DE RUST	317	0
				AGRICOLA	1278	0
40	HUDRIA WATER CC			NAAUWPOORT	291	9
				KWARTEL VLEY	355	0 (RE)
41	HURTER FARMING ENTERPRISES CC			BLYDSKAP	1035	0
				KLEINDEEL	1038	0
42	ID DREYER TRUST			GELUK	325	2
				KLEINFONTEIN	431	0 (RE)
				ZAAIKAMP	595	0
				WATERLOOP	596	0
				GENOEG	597	0 (RE)
				JOHANNA	763	0
				KEDRON	764	0
				BLYDSCHAP	907	0
				CONCORDIA	908	0
				VERGENOEG	910	0 (RE)
				VERHOOG	911	0
43	JD BOTHA TRUST			PAUL'S DEEL	771	0 (RE)
				VERGENOEG	31	2
44	JJ LOURENS TRUST			LONDON	161	0
				LONDON	161	1
				LONDON	161	2
				LONDON	161	3
				WELKOM	901	0 (RE)
				WELKOM	901	2
				WELKOM	901	4
				WELKOM	901	5 (RE)
				BETHANY	1230	1
				WELGELUK	1231	1
				BETTA'S RUST	1232	0
				DUNDEE	1233	0 (RE)
				BRISTOL	1370	0 (RE)
45	JANCO SCHABIE BELEGGINGS CC			SYFERPOORT	203	2
				SYFERPOORT	203	3
				SYFERPOORT	203	4
				PLATRANDE	743	1
				ERGERNIS SPRUIT	433	0
46	JANNIE DU PLESSIS TRUST			PERTH	94	0

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				PERTH	94	1
				PERTH	94	2
				NIEMEYER'S RHU	95	3
				DRIEHOEK	97	0
				FYVIE	579	0
				AANGENAAM	675	0
				WELGELUK	676	0
				WELGELUK	676	2
				WELGELUK	676	3
				GOEDGELEGEN	677	0
				GOEDGELEGEN	677	1
				VOORUITZICHT	804	0
				DRIEHOEK A	905	0
				LOUIS RUST A	927	0
				LOUIS RUST B	928	0
				LOUIS RUST C	929	0
				DAMPLAATS	1178	0
				DAMPLAATS 'A'	1179	0
				F.E.	1186	0
47	JANWALD PROPERTIES CC			WAG N BIETJIE	1200	0
				ROODEPOORT	350	0 (RE)
				ROODEPOORT	350	1
				VERGENOEG	31	3
				POORTJE	6	0 (RE)
				POORTJE	6	10
				POORTJE	6	4
				POORTJE	6	5
				POORTJE	6	6
				POORTJE	6	7
				QUO VADIS	1138	2 (RE)
				QUO VADIS	1138	4
				GEGUND	1313	0
				ZWARTKOPJES	3	5
				ZWARTKOPJES	3	7
				POORTJE	6	9
				GOOD LUCK	518	0
				MOLL	527	0
				DEVONDALE	528	0 (RE)
				ELDORADO	740	0
				VAALRIVIERSDRIFT	2	3
				VAALRIVIERSDRIFT	2	6
				VAALRIVIERSDRIFT	2	2
52	JOUBERTSKOP HOENDERBOEDERY PTY LTD			VAALRIVIERSDRIFT	2	3
				VAALRIVIERSDRIFT	2	6
				VAALRIVIERSDRIFT	2	2

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
53	KALAHARI BOERDERY TD PTY LTD			VAALSPRUIT	598	0
				KIBO	844	0
				MIELIEBULT	871	0
				CHRISTIANA	872	0
				BLOEMHOF	1318	0 (RE)
54	KIMBRASSTAX PTY LTD			BLOEMHOF	390	0
55	KLAPROPS 241 PTY LTD			TWEEFFONTEIN	335	0 (RE)
				TWEEFFONTEIN	335	1
56	KROON TRUST			PUNTJE	123	0
				PETRUSHOFF	1110	0
57	KWAGGA KLIPRIVIER PROPERTY TRUST			STERKFONTein	34	0
58	LEKWA BRICKS PTY LTD			MISPAH	4	1
59	LEMAR TRUST			CORNELIA	857	2
60	LIGITPROPS 136 PTY LTD			MATHILDE	450	0
				WITRAND	504	0
61	LUDWIG CLAASSEN BOERDERY CC			MOOIBULT	126	0
				KOPPIE ALLEEN	347	2
				KOPPIE ALLEEN	347	4
				SOPHIA'S GUNST	687	4
				SOPHIA'S GUNST	687	5
62	MAMBAKLOOF TRUST			NAZARETH	750	1
				MAMBAKLOOF	1074	0
63	MANIE PORTWIG BOERDERY CC			BURGER'S RUST	107	0
64	MARK COCKCROFT TRUST			BLYDE VOORUITZICHT	727	0
65	MATLABAS NATURE RESERVE PTY LTD			BUFFELS VLEIJ	360	1
67	MHCM BOERDERY PTY LTD			SCHAAPBULT	726	0
				BLOEMHOF	1130	0
68	MIDDELPUNT 773 BOERDERY CC			EVENWYD	138	0
				VARKENSVLEI	327	0 (RE)
				COENRADINA	459	1
				PETRUSRUST	479	0
				MOOI RUST	548	0
				GRASVLEI	583	0
				PANDAM	716	0 (RE)
				MIDDELPUNT	773	0
				INLOOP	836	0
BOVENTOP	1055	0				
KILFOILS	1321	0 (RE)				

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				KILFOILS	1321	2 (RE)
				KILFOILS	1321	3
				KILFOILS	1321	4
69	MOOIHOEK TRUST			NAAUWPOORT	291	0
				NAAUWPOORT	291	1
				NAAUWPOORT	291	2
				NAAUWPOORT	291	4
				NAAUWPOORT	291	6
				NAAUWPOORT	291	10
				HARAN	753	0
				HARAN	753	1
70	N J & C VAN DER MERWE BOERDERY PTY LTD			VERGENOEG	31	1
71	NEVADA FARMING CC			MALFA	129	0
				PLATRANDE	130	0
				KLAVER VLEY	285	1
				NEVADA A	940	0
				NEVADA	943	0
				NEVADA	943	1
72	ODENDAAL BOERDERY TRUST			MANCHESTER	268	0 (RE)
				MANCHESTER	268	2
73	OOSLIG BOERDERY PTY LTD			GEDULD	259	0
74	PJ SCABORT DE JAGER CC			SPRINGBOKLAAGTE	387	0 (RE)
				SPRINGBOKLAAGTE	387	1
				SPRINGBOKLAAGTE	387	2
				PROSPECT	299	0 (RE)
				ACTON HOMES	649	0 (RE)
				IZAKSDEEL	823	0 (RE)
				IZAKSDEEL	823	1
				IZAKSDEEL	823	2
				MOUNT MARIA	858	0
				NONNIESBULT	859	0
				GERT BROERS RUST	860	0
				WELGERUS	1296	0
				AANLEG	76	1
				TAAIBOSCHSPRUIT	217	1
				SCHAPENRUST	534	0
				JANNIESDEEL	666	0 (RE)
				GROENPLAATS	1384	4
75	PHARMATREND PTY LTD			MAHEM	269	0
				BERSEBA	1368	0
76	PJ VENTER BOERDERY PTY			BREYTENBACH	90	0



LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
	LTD			TEVREDE	456	0
				ZAAIHOEK	889	0
77	PORTWIG TRUST			THOMAS VLEI	132	0 (RE)
				THOMAS VLEI	132	1
				SMALDEEL	136	0
				MEDINA	516	2
78	PRESTPROPS 1096 CC			GELUK	325	0
				UITZIEN	401	4 (RE)
				UITZIEN	401	8
79	RADNOR & KINGTON BOERDERY CC			WITBANK	560	3
				WITBANK	560	7 (RE)
80	REBONDO BOERDERY CC			BALTIMORE	85	0 (RE)
				BALTIMORE	85	3 (RE)
				UITZOEK	133	0 (RE)
				EENSGEVONDEN	134	0
				KLEIN BRAK	135	0
				TWEEFONTEIN	137	0
				COENRADINA	459	0 (RE)
				PETRUSRUST	479	1
				PETRUSRUST	479	2
				SOPHIA'S GUNST	687	2
				PRUIMPJE	767	0
				HENDRINA	1036	0
81	REINIER MULLER TRUST			DUCKVALLEY	96	2
82	RENTIA BOERDERY CC			VLAK NEK	339	1
				PHILLIESDEEL	348	1
				PHILLIESDEEL	348	2
				PADLANGS	441	1
				AANDENKING	514	1
				BARENDINA	568	0 (RE)
				ZONDERWATER	575	0
				MIDDENIN	802	0
				JUDITH'S LAAGTE	816	0
				ONS RUS	1019	1
				KATRINASRUS	1176	0
				LOMBARD	1365	0
83	ROBVAAL BOERDERY CC			BELLEVUE	1158	0
				HELDERSTROOM	1159	0 (RE)
				MOEDERSDEEL	1161	0
84	ROLLIN INVESTMENTS PTY LTD			JANNIESDEEL	666	2
85	S W ROELAND BOERDERY CC			PELGRIMSRUS	437	3

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				PELGRIMSRUS	437	4
				PELGRIMSRUS	437	5
86	SW ROELAND TRUST			ROODE KRANS	310	0 (RE)
				GELUKSDEEL	484	0 (RE)
				GELUKSDEEL	484	2
				HEELTEVREDEN	485	0 (RE)
				HEELTEVREDEN	601	0
				LEIDING	602	1
				DE WET	867	0
				RADNORDEEL	1397	0
87	SAMPIE VAN ROOYEN TRUST			ZWARTKOPJES	3	1
				ZWARTKOPJES	3	2
				ZWARTKOPJES	3	3
				ZWARTKOPJES	3	6
88	SILVER FALCON TRADING 481 PTY LTD			SAXONY	26	0 (RE)
				UITZICHT	313	2
				ZWARTKRANS	745	0 (RE)
89	SMALPUNT BOERDERY PTY LTD			ALPHA	774	0
90	SPANDEKROON LANDGOED PTY LTD			MISGUND	559	0
				VASTRAP	608	0
				VOGELSTRUISPOORT	36	7
				GOEDGEDACHT	38	15
91	STEFAN MULLER TRUST			STERKFORTEIN	34	10
92	UYS BROERS BOERDERY PTY LTD			VAALRIVIERSDRIFT	2	4
				VAALRIVIERSDRIFT	2	5
93	VAALBANK 2 PROPERTY TRUST			PRIMROSE	99	0
				ZWARTBANK	281	0
				KORTFORTEIN	1127	0 (RE)
				KORTFORTEIN	1127	1
94	VAALBANK K R PROPERTY TRUST			ROELOF'S DEEL	97	0 (RE)
				BOSHOFFSRUST	118	0
				HANNOVER	581	0
				TRADOUW	1241	0
95	VAN DER MERWE FAMILY TRUST			BLOEMHOF	1318	1
96	VAN WYK TRUST			LANGVERWACHT	576	0
97	VARSFORTEIN BEEF CC			SYFERPOORT	203	5
				OREBEE LEEGTE	308	0
				GOEDGENOEG	590	0
				GESCHENK	622	0 (RE)
				GESCHENK	622	1

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				EMBRENSIA	697	0 (RE)
				ROTTERDAM	746	0 (RE)
				VAALKOP	747	0 (RE)
				VAALKOP	747	1
				HANNIESDEEL	899	0
				ERFDEEL	1113	0
				STERKFORTEIN	1114	0
				THE WILLOWS	1221	0
				MOOIHOEK	1332	1
98	W & F LYONS PTY LTD			PIETER FRANCOIS	1	0 (RE)
99	WILLEM CILLIERS TRUST			KLEINFONTEIN	431	1
				VAALBANK	482	0 (RE)
				WAPENRUST	718	0
				RIETFORTEIN	720	0
				KEERWEDER	961	0
				HOOGGELEGEN	964	0
				KINDERSDEEL	1084	0
100	WILLEM PRINSLOO TRUST			ARINDELA	123	0
101	WINSBEJAG KONSTRUKSIE 7 PTY LTD			MISPAH	4	0 (RE)
				MISPAH	4	2
102	WINTER NIGHT INVESTMENTS 349 CC			HEELTEVREDEN	485	1
103	WIPEM TRUST			GORDON	1085	2
104	WITBEKSTOETERY CC			PADLANGS	441	0 (RE)
				DE WERF	933	0
				UIJSRUST	992	1
				ERFDEEL	994	0
105		ADRIAAN ISAK	BESTER	DOORKOP	439	0
				JAAPIESDAL	480	0 (RE)
				MIDDEL Rust	481	0 (RE)
				QUAGGA NEK	483	0 (RE)
				QUAGGA NEK	483	1
				AANTEEL	798	0 (RE)
				AANTEEL	798	1
				ANNASTROOS	1170	0
106		ALBERT DOCTOR	RADEBE	GELUK	325	1 (RE)
107		ALBERTUS ADRIAAN	VAN WYK	MEALIELAND	889	0
108		ALETTA ALIDA REGINA	VAN ASWEGEN	GRUISPLAATS	336	0 (RE)
109		ALEXANDER ABRAHAM	TERBLANCHE	VOGELSTRUISPOORT	36	0 (RE)
110		ALIDA MARIA	UNGERER	ALPHA	1359	0 (RE)

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
111		ANDRIES JACOBUS WILHELMUS PRETORIUS STEYN	TERBLANCHE	MIDDELSPRUIT	665	0 (RE)
				JANNIESDEEL	666	1 (RE)
112		ANNA-MARIE SOPHIA	RHEEDERS	BLOEMTUIN	357	0
				SITNA	477	0
				ZATELOW	516	0
				ADRIANA	1317	0
113		ANN-MARIE	BOTHA	SPAN DE KROON	29	10
				SPAN DE KROON	29	2 (RE)
				SPAN DE KROON	29	7
				SPAN DE KROON	29	8
				POTBERG	30	1
				VERGENOEG	31	0 (RE)
				RIETVLEI	33	4
114		ANZETTE	BIERMAN	ERFDEEL	395	0
115		BAREND DANIEL	JANSE VAN RENSBURG	ROODE KRANS	310	1
				MISGUND	580	0
				MISGUND	580	1
				MISGUND	580	2
116		BAREND DANIEL	BIERMAN	HERINNERING	797	0
				ASCENT SCHOOL GROUND	817	0
117		BAREND DANIEL	JANSE VAN RENSBURG	DIE KOM	1126	0
118		BAREND DU PLESSIS	BESTER	CLOCOLAN	1	0 (RE)
				CHARLIES HOPE	282	0
119		BOY HOPALONG	MOTLOUNG	SMALDEEL	719	0
120		CAREL CHRISTIAAN	VAN DER MERWE	POORTJE	6	2
121		CASPER HENDRIK	WESSELS	WESSELS RUST	349	0 (RE)
122		CATHARINA CORNELIA	ODENDAAL	NAAUWPOORT	291	7
				NAAUWPOORT	291	8
123		CECILIA BARBARA	CLOETE	NAAUWPOORT	291	5
				LEBANON	1053	0 (RE)
124		CHARLES MULLER	COCKCROFT	HESTER	1089	0
				VADER'S GIFT	1091	0
125		CHARMAIN	STEYNBERG	GELUK	325	4
126		CHRISTIAAN DE NECKER	DE JAGER	CATHARINA'S VLEY	71	0
				HOOGGELEGEN	89	0
				MOOIDAM	170	0
				HOLPAN	423	1
				JOHANNA	1097	0
127		CHRISTIAAN FREDERICK	SCHEEPERS	MALANSKRAAL	1180	1

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
128		CHRISTIAAN RUDOLPH	DE WET	WELTEVREDEN	89	7
129		CHRISTINA MAGDALENA	DU TOIT	JUKSKY	470	0
130		CHRISTINA MAGDALENA	DU PLESSIS	SPITZKOP	289	0
				GRAANPUNT A	1098	0
				GRAANPUNT B	1099	0
				MUTUAL	1104	0
				MUTUAL A	1105	0
131		CHRISTOFFEL PETRUS	CILLIERS	SCHOONDRAAI	724	0 (RE)
132		CLOETE	ODENDAAL	GORDON	1085	1
				GORDON	1085	3
				ERFDEEL	1335	1
133		CORNEL	VAN BASTEN	TWEESPRUIT	1173	0
134		CORNELIUS JOHANNES	RAUTENBACH	STERKFORTEIN	34	12
				STERKFORTEIN	34	9
				VOGELSTRUISPOORT	36	3 (RE)
				VOGELSTRUISPOORT	36	4 (RE)
135		CORNELIUS MEYER	PRETORIUS	MEADOW BANK	74	0
				MEADOW BANK	717	0
				MEADOW BANK	738	0
				LEEUWPOORT	1120	0 (RE)
				AANVANG	1268	1
136		CORNELIUS PETRUS	VAN WYK	MIDDELDEEL	1077	0
				LIEFGEXOZEN	1399	0
				LIEFGEXOZEN	1399	2
				ELENORA	877	0
				TEKWAAN	925	1
137		DANIEL CHRISTIAAN	PORTWIG	LEEUW SPRUIT	328	2
				CLOVERFIELD	563	1
				CLOVERFIELD	563	2
				CLOVERFIELD	563	3
				EBENHAEZER	805	0
				BURHAM	962	1
				BURHAM	962	2
138		DAVID SCHALK	MARX	UITZIEN	401	1
				UITZIEN	401	6
139		DAWID PETRUS MATHYS	BOTES	KOPPIE ALLEEN	347	0
140		DENNIS	VLOK	MOOIWATER	683	0
141		DIRKIE CATHARINA	PIENAAR	GOEDVERWACHT	1095	0
				MAGDALENA	1180	0

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				BARENDINA	1291	0
142		DIRKIE PETRONELLA	DU PREEZ	LEEUKWUIL	27	6
143		EHSAN	MUHAMMAD	WELGELUK	1231	0 (RE)
144		EUNICE	MULLER	STERKFORTEIN	396	0
145		EVELYNE MARJORIE	GRAAFF	LENIES DEEL	1292	2
146		FRANS JACOBUS LOTZ	ODENDAAL	SLANGRIVIER	296	0
				KENTON	309	0
				SEVEN OAKS	1222	0 (RE)
147		FRANS JOHANNES	VAN DYK	GREENVILLE	343	0
				ERFENIS	938	0
				ERFDEEL	1107	1
148		FREDERIK JACOBUS	VAN RENSBURG	JUSTITIE	729	0
				THYSRUST	1090	0
149		FREDERIK JACOBUS	VAN ROOYEN	ANNIESDALE	865	0
				MORRESON	1078	0
150		GERHARDUS STEPHANUS	CLOETE	LANDSKROON	290	0
				KLEIN PARADYS	352	0
				TEVREDEN	1072	0
151		GERRIT CONRADIE	CILLIERS	BOSCHJES PLAAT	329	0
				WELVERDIEND	371	0
				NOOITVERWACHT	372	0
				PARK	775	0
152		GERRIT PIETER	VICTOR	TEMPE	99	0
				LAASTERUS	130	0
				NAAUWPOORT	179	0
				NAAUWPOORT	179	1
				NAAUWPOORT	179	2
				SAHALI	1436	1
153		GERT HENDRIK	VAN ROOYEN	VLAK NEK	339	2
154		GERT HENDRIK	UNGERER	KLEIN GENOEG	856	0
155		GERT SCHALK	BOTHAS	HAPPY DALE	25	0 (RE)
				PRINSHOF	384	0
				UITZIEN	401	2
				UITZIEN	401	3
156		GERTRUIDA MARIA	EKSTEEN	WELGEDAAN	569	0 (RE)
157		GESINA JOHANNA	DE WET	DUBLIN	879	0
				DUBLIN	879	1
158		GIDEONA JACOBA	HARTMAN	HENNIE'S DEEL	803	0
159		HELENA SUNETTE VOS	VAN WYK	HELDERFORTEIN	10	0
160		HENDRIK DIEDERIK	VAN RENSBURG	LOUWRENS RUST	315	0 (RE)

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
161		HENDRIK JOHANNES	ODENDAAL	DE ROTSEN	52	0
				MIDDENIN	808	0 (RE)
				MIDDENIN	808	1
				MIDDENIN	808	2
				MIDDENIN	808	4
				FRIKKI'S RUST	810	1 (RE)
				QUO VADIS	1138	0 (RE)
				DIE KRANSE	1174	0
162		HENDRIK SALMON	PIENAAR	HERDERDAL	84	0
				RAMA	1096	0
163		HENDRIK SEBASTIAAN	LOURENS	PAARDENFONTEIN	906	0
				PAARDENFONTEIN	906	2
164		HENRY BROADLEY	COCKCROFT	VLAK NEK	339	0
				WELGEGUND	1022	1
165		HERMANUS LUKAS	PORTWIG	GROOTVLEI	326	1
				GROOTVLEI	326	2
				LEEUEW SPRUIT	328	0
				LEEUEW SPRUIT	328	1
				KILFOILS	1321	1
166		HERMINA ELIZABETH	VON WIELLIGH	KAFFERSKRAAL	47	0
167		HESTER CORNELIA	VAN DEN BERG	VENTERSKROON	772	0 (RE)
				MERCURY	851	0
				JACOBUSDEEL	1081	0
				REMEMBER	1082	0
				SUKSES	1198	0
168		HESTER CORNELIA MAGDALENA	JANSE VAN RENSBURG	HARTEBEESTFONTEIN	324	0
				SOPHIA'S GUNST	687	3
				MALTA	1066	3
169		HESTER JOHANNA	MOMBERG	LEEUEWPOORT	1120	1
170		IGNATIUS WILHELM	FERREIRA	KAMP	76	0
				ALBION	311	0 (RE)
171		ISAAC MATTHYS	HIPKIN	ROBBERTZ' DRIFT	322	0 (RE)
172		ISAAC MODUTSWANE	MOTAUNG	DEELUIT	346	0 (RE)
				BEYERS	725	0 (RE)
				BEYERS	725	1
				GESLAAGD	1005	0
				AFGUNSDAM	1121	0
				ABERDEEN	1214	0
173		IZAK DANIEL	DREYER	BLUEGOMBOSCH	405	0
				GOOD HOPE	603	0

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				ZWAAIHOEK	657	0
174		JACOB CHRISTOFFEL	CRONJE	EMMERENTIA	14	0
				DRILVLEI	368	7
				RAND FONTEIN	529	0
				EMMERENTIA	531	1
				HETTIESDALE	792	0
				BEGINSEL	1073	0
175		JACOB JOHANNES	HURTER	CORNELIA	857	4 (RE)
176		JACOB JOHANNES JACOBUS	VAN ROOYEN	LEIDING	602	0
177		JACOBUS HENDRIK	MULLER	NIEMEYER'S RHU	95	1 (RE)
				NIEMEYER'S RHU	95	2
				SCHRYVERSPOST	98	0
				BIESJESPAN A	303	0
				BIESJESPAN	361	0
				BOOMPLAATS	366	0 (RE)
178		JACOBUS JOHANNES GERHARDUS	VAN ROOYEN	ORANJEFONTEIN	353	0
				JOESINASRUST	520	0
				ROZENDAL	1100	1
179		JACOBUS JOHANNES PETRUS	PRINSLOO	ORIBIE FONTEIN	270	0
180		JACOBUS LODEWICUS DE JAGER	PRINSLOO	JACOBUSDAAL	744	1
181		JAMES	STREAK	MOOIBRAK	391	1
182		JAMES JOHN	CAIRNCROSS	SMALDEEL	1306	0
183		JAN ADRIAAN	VAN WYK	KROMDRAAI	39	1
184		JAN FREDERIK RYKERS	VAN ROOYEN	KALABAS FONTEIN	303	0
				UITSPRUIT	594	0
				HESTERSDEEL	1006	0 (RE)
				HESTERSDEEL	1006	1
185		JAN HARM THOMAS	REYNEKE	SYFERPOORT	203	1
				RISHTON	383	0 (RE)
186		JANE WATSON	VAN ZYL	HELENA	98	0
187		JOHAN ANDRIES DANNHAUSER	CILLIERS	KLIPKOPJE	1135	0
188		JOHAN COENRAAD	MARNEWECK	MISPAH	4	3
189		JOHAN DEWALD	BOTHA	RIETVLEI	33	2
190		JOHAN JACOB	JANSE VAN RENSBURG	ZAMENKOMST	386	0 (RE)
				RUSTHOF	1270	0
				EL-BETHEL	1271	0
191		JOHANN CAREL	VAN HEERDEN	UITZOEK	223	0 (RE)



LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				DRIEHOEK	1058	0
				WONDERWAL	1082	0 (RE)
				HIPKINS VALLEY	1083	0
192		JOHANN HEINRICH	PORTWIG	WELSTAND	404	2
				WELSTAND	404	5
				CLOVERFIELD	563	0 (RE)
				THEODORA'S HOOP	765	0 (RE)
				THEODORA'S HOOP	765	1
				BURHAM	962	0 (RE)
				SMALPUNT	1337	0
193		JOHANNA CORNELIA SOPHIA	VAN ROOYEN	KLIPFONTEIN	1050	0 (RE)
194		JOHANNA DOROTHEA	PRETORIUS	STERKFONTEIN	396	2
				STERKFONTEIN	396	4
195		JOHANNA WILHELMINA	GILIOMEER	ORIBIEKRAAL	897	0
				KLEIN BEGIN	900	0
				WELTEVREDEN	901	0
				MOOIHOEK	1332	0 (RE)
196		JOHANNES AUGUSTUS	DREYER	KLIPFONTEIN	23	0
				SCHULPSPRUIT	24	0
				GOEDGEDACHT	312	0
				HOEKPAN	599	0
				JACOBASDEEL	912	0
				SPITSHOEK	913	0
				MARIASDAL	914	0
197		JOHANNES BERNARDUS	SCHMIDT	KLAVER VLEY	285	0 (RE)
				KLAVER VLEY	285	3
				DRIEFONTEIN	286	0 (RE)
				WILHELMINA	424	0 (RE)
				WILHELMINA	424	1
198		JOHANNES CASPARUS	RADLEY	STERKFONTEIN	34	1 (RE)
				STERKFONTEIN	34	8
199		JOHANNES COENRAAD	DE KOCK	BRAKSPRUIT	109	0
				SMALDEEL	210	0
200		JOHANNES FREDERICK	RAUTENBACH	GOEDGEDACHT	38	16
				GOEDGEDACHT	38	7
201		JOHANNES FREDERIK	VAN DER MERWE	RIETFONTEIN	288	2
202		JOHANNES JACOBUS	NEL	MOOIGENOEG	277	0 (RE)
203		JOHANNES JAKOBUS	BESTER	STRIJDFONTEIN	477	0
				JOESINASRUST	520	1
				BANKKRAAL	799	0

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				WELVERDIEND	1169	0
204		JOHN LEONARD	MULLER	UITZICHT	313	0
				UITZIEN	401	7
205		JOHN LEONARD	LOURENS	HENNIES DEEL	793	0 (RE)
				ALICE	796	0 (RE)
				ALICE	796	1
206		JUDITH ISABELLA	MULLER	HURTERS Rust	1134	0
207		JUDITH JACOBA	UNGERER	UITZICHT	313	1
				RONDEKOP	593	0
				HELENA	1105	0
208		LOMBARDE	VICTOR	CHALKFARM	85	0
				GELDERLAND	429	0
209		LOUIS JOHANNES BOTH	MARNEWECK	MISPAH	4	4
210		LUKAS JOHANNES	SWART	WELTEVREDEN	89	0 (RE)
				WELTEVREDEN	89	1
				WELTEVREDEN	89	2
				WELTEVREDEN	89	4
				WELTEVREDEN	89	5
211		MARIA ELIZABETH	GUNTER	ALETTA	475	1
				WITBANK	560	4
212		MARIA ELIZABETH	VAN NIEKERK	SAULSRUST	642	0
213		MARIKA	VAN HEERDEN	PELGRIMSRUS	437	1
214		MARK	COCKCROFT	TOGWAT	1128	0
215		MARTHA HENDRINA ELIZABETH	VAN DER MERWE	NAZARETH	750	0
216		MARTHINUS JOHANNES	ZIETSMAN	MOOIBRAK	391	0 (RE)
217		MARTHINUS JOHANNES	ROELAND	MIDDENIN	22	0
				WELSTAND	404	1
				WELSTAND	404	3
				WELSTAND	404	7
				WITBANK	560	6
				PIETERSDEEL	884	0
218		MARTHINUS PETRUS	DE JAGER	GERTIESGROVE	819	0
				BREGGIESVILLE	820	0 (RE)
				ANNASGIFT	821	0 (RE)
				NOOITGEDACHT	1092	0
				LANGKUIL	1093	0
				MARTINUS RUST	764	0
				LIBAU	1114	0 (RE)

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				PARADYS	1115	0
219		JL	MULLER	GELUK	325	3
220		MASILO ISAAC	BOROLE	WELTEVREDEN	89	3
221		MICHAEL	WHITE	GELUKSKOPPIE	1125	0 (RE)
222		PAMELA PEGGY	RINKE	NIEUWE WONING	1145	0
223		PAUL HENDRIK	ZIETSMAN	KLEINFONTEIN	431	4
				KLEINFONTEIN	431	7
				RONDEBULT	956	0
				RONDEBULT	956	1
				DOORNBOOM	1237	1 (RE)
				DOORNBOOM	1237	2
				STUURMANSDRIFT	1239	0
EIKENHOF	1243	0				
224		PAUL RICHARD LOUIS	BRAACK	BALTIMORE	85	4
225		PAUL STEPHANUS	KRUGER	RADNOR	417	1
				WITBANK	560	2
				KINGTON	870	0
				RUNNYMEDE	197	0
				RUNNYMEDE	197	1
				RUNNYMEDE	197	2
CRISTOFFEL'S RUST	253	0				
226		PETRUS JACOBUS	FOURIE	UITKYK	414	0
				UITKYK	414	4
				BOOMPIE ALLEEN	1358	0
227		PETRUS LOUIS	VISSER	TWISHOEK	1079	0
228		PETRUS PAULUS	SWART	ENERGY	50	0
				KWARTEL VLEY	355	1
				PIENAARS VLEI	461	0 (RE)
229		PHILIPPUS ARNOLDUS	VAN DER WALT	DASKLIP	1371	0 (RE)
230		PHILIPPUS BERNARDUS	DE WET	DE WETS HOOP	62	0
				PYPSTEEL	281	0 (RE)
				DE RUST	616	0
				GOEDEMOED	1333	0
				DRIEHOEK	1334	0
231		PHILIPPUS JACOBUS	CRONJE	WELGEGUND	241	1
				LENIES DEEL	1292	1
232		PHILIPPUS JURIE WYNAND	FOURIE	JOHANNA	1067	0
233		PIETER DU PREEZ	VAN HUYSSTEEN	VIERFONTEIN	486	0
				AANSLUITING	736	0
234		PIETER JACOBUS	NEL	ZUIKERVLEY	278	0

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
		GYSBERT				
235		RICHARD SCHALK	JANSE VAN RENSBURG	ERFDEEL	1107	0 (RE)
236		SALOMINA ADRIANA	VENTER	GOEDGEDACHT	38	11
				GOEDGEDACHT	38	12
				GOEDGEDACHT	38	4
				GOEDGEDACHT	38	6
237		SAMUEL WENTZEL	UNGERER	BETTY'S DEEL A	533	0
238		SCHALK WILLEM	ROELAND	NIEMANSKRAAL	178	0 (RE)
239		SEAN ROBERT	KRAMER	OMEGA	113	0
				FAIRPLAY	279	1
				DASSIEKLIP	446	0
				BLOEMHOF	488	0
				BERLIN	882	0 (RE)
				LOURENTIA	1051	0
				HEBRON	1199	0
				HOOGEBULT	1204	0 (RE)
				SEVEN OAKS	1222	1
EENSGEVONDEN	1297	0 (RE)				
240		SIDNEY ROBERT	KOLLER	AANLEG	76	0
241		SIMON	MPELE	NIEMEYER'S RHU	95	0 (RE)
				NIEMEYER'S RHU	95	5
242		SIMON LUDOLPH	VAN ROOY	GEDULDSKRAAL	289	0
				EBENHAEZER	983	0
				MOOIVLEI	984	0
243		STEFANIE UNGERER	VAN DER MERWE	GOEDHEID	306	2
				LANGSPRUIT	1037	0
				DINASRUS	1039	0
244		SUSANNA JACOBA BURGER	VISSER	SOPHIA'S GUNST	687	7
245		SUSANNA JACOBA MARIA	ESTERHUIZEN	KATSPRUIT	147	0 (RE)
				MIMMIES DEEL	972	1
				BRISTOL	1370	1
246		SUSARA CORNELIA	KLEYNHANS	VOGELSTRUISPOORT	36	1
247		THOMAS JOHANNES	HUGO	SUSANNA	483	0
				SUSANNA	483	1
248		VERONICA NICOLA	JONKER	GLASGOW	137	0
				STENZIOKO	290	0
				KRONENDAL	581	0
249		WILHELM JOHANN ODENDAAL	DOHNE	HOLPAN	423	0
250		WILLEM CAREL	CILLIERS	ZOETBRON	151	0
				KLEINFONTEIN	431	2

LANDOWNERS						
No.	Trust Name / Company Name	First Name	Surname	Farm Name	Farm Number	Portion Number
				KLEINFONTEIN	431	3
				VAALBANK	482	1
				ZUURING BANK	562	1
				BRAKDAM	1080	0
				JACOBUSDEEL	1081	1
				ZUURINGBANK A	1083	0
				MALANSKRAAL	1180	0
				MALANSKRAAL	1180	2
				DOORNBOOM	1237	0 (RE)
251		WILLEM CARL	ODENDAAL	BEGINSEL	1115	0
				ELDORADO	1117	0
252		WILLEM LODEWIKUS	WESSELS	RAUTENBACH'S RUST	924	0
253		XOLANI XAVIER	SIBISI	HOOGEBULT	730	0 (RE)
				HOOGEBULT	730	1
				HOOGEBULT	730	2
				ONRUST	1007	0

No.	Organisation	Surname	First Name
<b>NON-GOVERNMENTAL AND ENVIRONMENTAL ORGANISATIONS</b>			
254	BirdLife South Africa	Anderson	Mark
255	Council for Geo-Sciences	Hanise	Bantu
256	Council for Geo-Sciences	Khodani Matshusa	Khotani
257	CSIR	Hermanus	May
258	CSIR	Lochner	Paul
259	Endangered Wildlife Trust	Gibbons	Bradley
260	FrackFree SA	Bell	Judy
254	FrackFree SA	du Toit	Francois
255	Treasure Karoo Action Group	Deal	Jonathan
256	WESSA	Smith	Brett
257	WWF-SA	Burns	Angus
258	WWF-SA	Stone	Vanessa
<b>COMMUNITY REPRESENTATIVES</b>			
259	Lekwa Local Municipality: Ward Councillors	Tshabalala	Xolile
260	Mafube Local Municipality: Ward Councillor	Motloung	
261	Mafube Local Municipality: Ward Councillor	Oost	
262	Mafube Local Municipality: Ward Councillor	Plessis	D
263	Mafube Local Municipality: Ward Councillor	Sigasa	Elliot
264	Phumelela Local Municipality: Ward Councillor	Khumalo	Bafano
265	Phumelela Local Municipality: Ward Councillor	Mokoena	Omar
266	Phumelela Local Municipality: Ward Councillor	Tshabalala	Togo
267	Phumelela Local Municipality: Ward Councillor	Wessels	Doreen
268	Pixley ka Seme Local Municipality: Ward Councillor	Simelane	Xolani
269	Pixley ka Seme Local Municipality: Ward Councillor	Thulani	Shabangu Obed
270	Pixley ka Seme Local Municipality: Ward Councillor	Vilakazi	Vusumuzi
<b>FARMERS' UNIONS</b>			
271	AFASA (African farmers Association of South Africa)	Sekgoto	Pitso
272	Agri Free State	Möller	P
273	Agri Mpumalanga	Bosman	NL
274	Free State Agriculture/Vrystaat Landbou	Armour	Jack
275	Free State Agriculture/Vrystaat Landbou	Kriek	Dan
276	Mpumalanga Landbou/Agriculture	Davel	Robert
277	Transvaal Agricultural Union		du Plessis
278	VKB Landbou (Pty) Ltd	Chelini	Laura
279	VKB Landbou (Pty) Ltd	Hill	Hilary
<b>ORGANS OF STATE</b>			
280	Dr. Pixley ka Isaka Seme Local Municipality	Malatsi	Phalaborwa Vincent
281	Dr. Pixley ka Isaka Seme Local Municipality	Malebye	PB
282	Dr. Pixley ka Isaka Seme Local Municipality	Mkhaliphi	Patience
283	Dr. Pixley ka Isaka Seme Local Municipality	van der Merwe	Elmarie
284	Dr. Pixley ka Isaka Seme Local Municipality	-	Khansile
285	Eskom (Power Lines)		

No.	Organisation	Surname	First Name
286	Fezile Dabi District Municipality	Molibeli	LM
287	Fezile Dabi District Municipality	Nyzi	Queen
288	Fezile Dabi District Municipality	Olifant	OM
289	Fezile Dabi District Municipality	Phato	Manto
290	Free State: Department of Agriculture, Forestry and Fisheries	Mazwi	Paul
291	Free State: Department of Agriculture, Forestry and Fisheries	Zeelie	Johan
292	Free State: Department of Agriculture and Rural Development	Dlamini	Priscilla
293	Free State: Department of Agriculture and Rural Development	Khosa	Zac S
294	Free State: Department of Agriculture and Rural Development	Mthembu	Khumbusile
295	Free State: Department of Economic Development, Tourism, Environmental Affairs & Small Business	Gasela	Matilda
296	Free State: Department of Economic Development, Tourism, Environmental Affairs & Small Business	Khunong	Disebo
297	Free State: Department of Economic Development, Tourism, Environmental Affairs & Small Business	Mokoena	Dimakatso
298	Free State: Department of Economic Development, Tourism, Environmental Affairs & Small Business	Vakalisa	Hlazo
299	Free State: Department of Mineral Resources	Ndlelendhle	Zindela
300	Free State: Department of Mineral Resources	Makhokha	Makhokha
301	Free State: Department of Rural Development and Land Reform	Tshawane	Vuyane
302	Free State: Department of Transport	Mabaso	Thoko
303	Free State: Department of Water and Sanitation		
304	Gauteng: Department of Water and Sanitation	Mthembu	Sibusiso
305	Gauteng: Department of Water and Sanitation	Mogale	Matseba
306	Gert Sibande District Municipality	Chirwa	MG
307	Gert Sibande District Municipality	Habile	CA
308	Gert Sibande District Municipality	Ndanhlangane	Dan
309	Gert Sibande District Municipality	Ngwekazi	Janice
310	Gert Sibande District Municipality	Zikalala	Sibongile
311	Lekwa Local Municipality	Dhlamini	Lindokuhle
312	Lekwa Local Municipality	Kota	Harriot
313	Lekwa Local Municipality	Tshabalala	Linda
314	Mafube Local Municipality	Hlubi	Andrew
315	Mafube Local Municipality	Sigasa	Jabulani
316	Mpumalanga: Department of Agriculture, Forestry and Fisheries	Shabane	Love
317	Mpumalanga Tourism and Parks Agency	Krige	Frans
318	Mpumalanga Tourism and Parks Agency	Lotter	Mervyn
319	Mpumalanga Tourism and Parks Agency	Makhuvha	Khumbelo
320	Mpumalanga: Department of Agriculture and Rural Development and Land Administration	Xulu	SP
321	Mpumalanga: Department of Economic Development and Tourism	Mkize	Muzi
322	Mpumalanga: Department of Mineral Resources	Mathavhela	Samuel
323	Mpumalanga: Department of Mineral Resources	Matodzi	Bethuel
324	Mpumalanga: Department of Mineral Resources	Tshivhandekano	Aubrey
325	Mpumalanga: Department of Public Works, Roads and Transport	Mohlaseedi	K.M

No.	Organisation	Surname	First Name
326	Mpumalanga: Department of Public Works, Roads and Transport	Nkambule	David
327	Mpumalanga: Department of Public Works, Roads and Transport	Sengwayo	Fikile
328	Mpumalanga: Department of Water and Sanitation	Mulaudzi	M
329	Mpumalanga: Department of Rural Development and Land Reform	Nkosi	Sam
330	Petroleum Agency SA	Khumalo	Nonkululeko
331	Petroleum Agency SA	Ngesi	Phumla
332	Phumelela Local Municipality - Free State	Kannemeyer	Bruce
333	Phumelela Local Municipality - Free State	Motaung	John
334	Phumelela Local Municipality - Free State	Zwane	TR
335	Phumelela Local Municipality - Free State	-	Olga
336	SANRAL	Bota	Victoria
337	SANRAL	Marx	Judy
338	SANRAL	Mlambo	Busi
339	South African Heritage Resource Agency	Hine	Phillip
340	South African Heritage Resource Agency	Khumalo	Nokukhanya
341	Thabo Mofutsanyana District Municipality	Lebenya	Takatso
342	Thabo Mofutsanyana District Municipality	Mlota	Thembi
343	Thabo Mofutsanyana District Municipality	Vilakazi	Malefu
344	Transnet (Pipelines)	Zondi	Khosi
345	Transnet (Pipelines)	Hadebe	Thami
346	Transnet (Freight Rail)	Modise	Teboho
347	Transnet (Railways) Free State	Jantjie	Maria
348	Transnet (Railways) Mpumalanga	Mbadi	Masindi
349	Transnet (Railways) Mpumalanga	Sibiya	Siphamandla
<b>GENERAL I&amp;APS</b>			
350	Aanley 176	Koller	SR
351	Arundel ext.	van Wyk	JD
352	Brakwal ext.	van Wyk	M.J
353	CWD	Thabang	Moloi
354	Dewetshoop	de Wet	PB
355	Eensgevonden Trust	Krugel	Werner
356	Enviroworks	Lamprecht	Rikus
357	Expectra 915 (Pty) Ltd	Mitchell	James
358	Expectra 915 (Pty) Ltd	Mitchell	Rina
359	Helderfontein 10	van Wyk	HSV
360	Hurter farming Enterprises	Hurter	Jaco
361	Jarima Boerdery	Booyesen	Riaan
362	JJ Lourens Trust	Lourens	Jacobus
363	Mahem/Pocklington	Beyers	Willem
364	NatureStamp	Carter-Brown	Susan
365	Vitziën	van Rooyen	Jedri
366	VKB Landbou	Swart	Albe
367	Vrede Boerdering en Verharing		



No.	Organisation	Surname	First Name
368	VS Lanbou/Privaat	Venter	Daan
369	Warden DBV	van Rensburg	Hendri
370		Abel	Muziyyakhe
371		Alice	Mokoena
372		Beste	BP
373		Bester	AJ
374		Bongani	Mbatha
375		Bosman	ID
376		Botha	Gert
377		Botha	JD
378		Cilliers	JAD
379		Cilliers	PA
380		Cloete	GS
381		Cloete	Niel
382		Cronje	Chris
383		Cronje	Daan
384		de Jager	CA
385		des du Buisson	Pieter
386		Dhadla	Lucky
387		Dreyer	ID
388		du Plessis	PG
389		Fourie	Kobus
390		Fourie	S
391		Greyling	Ben
392		Greyling	CJ
393		Gwebu	Jacob
394		Gwebu	Karoolg
395		Hartman	GJ
396		Hurter	Piet
397		Janse van Rensburg	Casper
398		Janse van Rensburg	Jacques
399		June	Nkosi Zakhele
400		Kenneth	Mokoena Tebogo
401		Khumalo	Nonku
402		Koen	Johan
403		Koetzee	H
404		Kritzinger	Louw
405		Kruger	P.S
406		Kruger	Paul A
407		Kruger	Stephan & maryke
408		Lawrence	Khanya Thabiso
409		Lilley	Marilyn
410		Lindiwe	Mosia

No.	Organisation	Surname	First Name
411		Lombard	Louis
412		Lourens	H
413		Lourens	J
414		Louw	Willem
415		Lyons	Dr Mollie
416		M.	Gerrit
417		Maboeneng	Innocent Linda
418		Makhplemele	Mokgele
419		Malibeko	Bafana
420		Masiteng	Johannes
421		Mazibuku	Duduzile
422		Mazwana	Ziphozethu
423		Morris	C
424		Mosia	Adel
425		Motaung	Isaac
426		Muller	Myra & Johnny
427		Nhlapo	Cathrine
428		Nhlapo	Muzimakhe
429		Nhlapo	Ntombifuthi Catherine
430		Nkoeana	Nhlapo
431		Ntuli	Samuel
432		Odendaal	Cloete
433		Odendaal	Frans
434		Odendaal	J
435		Oosthuizen	Daniel
436		Padoo	JGP
437		Raubeuheuies	WQ
438		Reyneke	Jannie
439		Reyneke	Schabe
440		Roeland	SW
441		Scholtz	Tonie
442		Straszacker	Arnune
443		Travers	Ben
444		Tromp	A
445		Ungered	Sampie
446		Ungerei	S.W
447		van der Linde	Cailie
448		van der Linde	David
449		van E.	Roelaf
450		van Heerden	Johann
451		van Rooyen	JJG
452		van Wyk	Riaan
453		van Wyk	Thys

No.	Organisation	Surname	First Name
454		Victor	Gerrit
455		Viljoen	Atwick
456		Wels	C
457		William	Tsotetsi
458		-	Joseph
<b>OTHER E-MAIL ADDRESSES PROVIDED BY I&amp;APS</b>			
459	admin@robvaal.co.za		
460	andries.cilliers@gmail.com		
461	casper@cut.ac.za		
462	cilliers777@gmail.com		
463	cmia@vodamail.co.za		
464	corrie@lantic.net		
465	dejagermp@yahoo.com		
466	elsmeat@gmail.com		
467	greyling@netactive.co.za		
468	hndp@autocity.co.za		
469	info@coewes.co.za		
470	iw.zzznguni@gmail.com		
471	jcd@lantic.net		
472	jcd8272@gmail.com		
473	jhurter@vodamail.co.za		
474	jsreyneke@hotmail.com		
475	liefgekosen@vodamail.co.za		
476	mooimeisiesfontein@zipnorth.co.za		
477	Paulpetrokruger@gmail.com		
478	paulskruger1@gmail.com		
479	rencbk@vodamail.co.za		
480	rykersvr@gmail.com		
481	sjungerer@gmail.com		
482	stephan@internetsa.co.za		
483	swesterhuizen@telkomsa.net		
484	swroeland22@gamil.com		
485	tafelkop@zipnorth.co.za		
486	vanwykklaititia@yahoo.com		
487	wolf@coewes.co.za		

**APPENDIX 5.3: I&AP NOTIFICATION LETTER AND BID**



Project Reference: 722.01083.00003

File Ref. 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH

20 September 2016

**ATTENTION: LANDOWNER/STAKEHOLDER**

**AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)**

This letter provides formal notification that Afro Energy (Pty) Ltd (Afro Energy) has lodged an application for an **Exploration Right** (ER) to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa (PASA) in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA).

The application is for undertaking early-phase petroleum exploration, which is aimed at determining the presence of Coal Bed Methane (CBM) gas resources that could warrant further exploration. The initial exploration work programme would be restricted to an aeromagnetic survey and drilling of up to five stratigraphic core boreholes. Based on Afro Energy's existing ER in the Amersfoort area and its success of extracting commercial rates of gas from unstimulated test boreholes in the Amersfoort area, hydraulic fracturing will not at any time be considered as an activity for this project.

Afro Energy is also required to make an application for **Environmental Authorisation** for the proposed exploration activities in terms of Chapter 5 of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA). In terms of the EIA Regulations 2014, the application for Environmental Authorisation must be subject to a Scoping and Environmental Impact Assessment (EIA) process.

SLR Consulting (South Africa) (Pty) Ltd has been appointed as the independent Environmental Assessment Practitioner to undertake the Scoping and EIA process for the proposed project. As part of the initial phase of this work we are distributing information to as many interested or affected parties as possible. Through various resources we have obtained contact details for owners of land and potential stakeholders. We continue to acquire such details.

---

SLR Consulting (South Africa) [Proprietary] Limited

[www.slrconsulting.com](http://www.slrconsulting.com)

Registered Address: Unit 7 Fourways Manor Office Park, 1 Macbeth Avenue, Fourways, 2191  
Postal address: PO Box 1596, Cramerville, 2060, South Africa  
Reg. No.: 2007/005517/07      VAT No.: 4630242198

Fourways Office: Physical address: Unit 7 Fourways Manor Office Park, 1 Macbeth Ave, Fourways / Postal address: P O Box 1596, Cramerville, 2060 / T: +27 11 467 0945 / F: +27 11 467 0978  
Cape Town Office: Unit 39, Roeland Square, 30 Drury Lane, Cape Town / Postal address: P O Box 10145, Caledon Square, 7905 / T: +27 21 461 1118 / F: +27 21 461 1120  
Somerset West Office: Unit D3, Building 5, Fairways Office Park, Niblick Way, Somerset West / T: +27 21 851 3348

**SABS**  
ISO 9001

Directors: B Stobart, F Fredericks, K Pietersen

As a potential landowner, occupier of land within the ER application area or a stakeholder with interest in the application, we would like to formally notify you of the application and provide you with introductory information on the proposed exploration project. The attached Background Information Document (BID) provides additional project information and outlines the application process. The BID also includes a map and a list of the properties included in the ER application area. Please note that the attached BID is available in Afrikaans upon request.

Should you wish to register as an interested and affected party and/or wish to raise any initial issues or concerns regarding the proposed project, please make use of the attached Registration and Response Form and forward it to SLR at your earliest convenience. For comments to be included in the Scoping Report they should reach SLR by no later than **21 October 2016**.

Notice is also hereby given that Information-sharing Meetings will be held as follows:

Date	Venue	Time
10 Oct 2016	Siesta Guest House, Farm Merrydale, R26 Reitz Road, 12 km from Frankfort	15h00
11 Oct 2016	Standerton Golf Club, Peter Bailey Boulevard, Standerton	09h00
11 Oct 2016	NG Kerk Hall, Jan Pen Street, Cornelia	15h00
12 Oct 2016	Vrede Hotel, Kerk Street, Vrede	09h00

Should you have any queries in this regard please do not hesitate to contact the undersigned.

Yours faithfully



**Jeremy Blood**

For: **SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**

Email: [jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)

Tel: 021 461 1118 / 9

20 September 2016

**AANDAG: GRONDEIENAAR/BELANGHEBBENDE PARTY****AFRO ENERGY – KENNIS VAN 'N AANSOEK OM OMGEWINGSMAGTIGING TER ONDERSTEUNING VAN 'N EKSPLORASIEREG VIR PETROLEUM OP 'N AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN MPUMALANGA PROVINSIES (12/3/320 ER)**

Hierdie brief dien as formele kennisgewing dat Afro Energy (Edms) Bpk (Afro Energy) 'n aansoek om 'n **Eksplorasierereg** (ER) vir die eksplorasiereg van "Petroleum en Gas" by die Petroleumagentskap van Suid-Afrika (PASA) ingedien het in terme van Artikel 79 van die Wet op die Ontwikkeling van Minerale en Petroleumhulpbronne, 2002 (No. 28 van 2002) (MPRDA).

Die aansoek is vir die onderneem van vroeë-fase petroleum-eksplorasiereg wat as doel het om vas te stel of daar enige Steenkoollaag-Metaan (SLM) gasbronne teenwoordig is wat verdere eksplorasiereg kan regverdig. Die aanvanklike eksplorasiewerkprogram sal beperk wees tot 'n aeromagnetiese opname en die boor van tot vyf stratigrafiese kernboorgate. Op grond van Afro Energy se bestaande ER in die Amersfoort area en hul sukses met die ontginning van kommersiële hoeveelhede gas uit ongestimuleerde toetsboorgate in die Amersfoort area, sal hidrouliese breking onder geen omstandighede as 'n aktiwiteit vir hierdie projek oorweeg word nie.

Afro Energy moet ook 'n aansoek om **Omgewingsmagtiging** vir die voorgestelde eksplorasiereg aktiwiteite indien in terme van Hoofstuk 5 van die Nasionale Wet op Omgewingsbestuur, 1998 (No. 107 van 1998) (NEMA). In terme van die Omgewingsimpakbepaling (OIB) Regulasies, 2014, is die aansoek om Omgewingsmagtiging onderhewig aan die onderneem van 'n Omvangstudie en OIB prosesse.

SLR Consulting (Suid-Afrika) (Edms) Bpk is aangestel as die onafhanklike omgewingskonsultant om die Omvangstudie en OIB prosesse vir die voorgestelde projek te onderneem. As deel van die eerste fase van hierdie werk word inligting aan soveel as moontlik belanghebbende en geaffekteerde partye uitgestuur. Kontakbesonderhede vir grondeienaars en moontlike belanghebbende partye is deur verskeie bronne bekom. Ons sal voortgaan om verdere besonderhede te bekom deur die verloop van die studieproesse.

2/...

As 'n potensiële grondeienaar, bewoner van eiendom binne die ER aansoekgebied of 'n party met belang in die aansoek, wil ons u formeel in kennis stel van die aansoek en voorsien met inleidende informasie aangaande die voorgestelde eksplorasiëprojek. Die aangehegde Agtergrondinligtingsdokument (AID) verskaf bykomende projekinligting en die raamwerk van die aansoekproses. Die AID sluit ook 'n kaart en 'n lys van die eiendomme binne die ER aansoekgebied in.

Indien u of u organisasie as 'n belanghebbende party wil registreer en/of u enige aanvanklike kwessies of bekommernisse aangaande die voorgestelde projek het, maak asseblief gebruik van die aangehegde Registrasie en Kommentaarvorm en stuur dit aan SLR so gou dit u pas. Vir kommentaar om ingesluit te word by die Omvangstudieverslag moet dit SLR **teen 21 Oktober 2016** bereik.

Kennis geskied ook hiermee dat Openbare Inligtingsvergaderings as volg sal plaasvind:

Datum	Plek	Tyd
10 Okt 2016	Siesta Gastehuis, Plaas Merrydale, R26 Reitzpad, 12 km van Frankfort	15h00
11 Okt 2016	Standerton Gholfklub, Peter Bailey Boulevard, Standerton	09h00
11 Okt 2016	NG Kerksaal, Jan Penstraat, Cornelia	15h00
12 Okt 2016	Vrede Hotel, Kerkstraat, Vrede	09h00

Indien u enige vrae in hierdie verband het, skakel gerus met die ondergetekende.

Vriendelike groete



**Jeremy Blood**

Vir: **SLR CONSULTING (SOUTH AFRICA): KAAPSTAD KANTOOR**

E-pos: [jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)

Tel: 021 461 1118 / 9





# Afro Energy (Pty) Ltd

## APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

### BACKGROUND INFORMATION DOCUMENT

SEPTEMBER 2016

#### INTRODUCTION

On 8 July 2016 Afro Energy (Pty) Ltd ("Afro Energy") lodged an application for an Exploration Right (ER) to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa (PASA). The application was submitted in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA). PASA accepted the application on 13 July 2016. The ER application area is extensive and encompasses various farms in the Free State and Mpumalanga provinces (see Figure 1).

Afro Energy previously held a Technical Co-operation Permit (TCP) for the same area. An analysis of the data collected as part of the TCP (including historical coring) has indicated that conditions are permissive for the occurrence of methane gas in underground coal seams and associated geological strata in the ER area. Afro Energy is now proposing to further explore the area for Coal Bed Methane (CBM) gas resources.

The application is for undertaking early-phase petroleum exploration, which is aimed at determining the presence of CBM gas resources that could warrant further exploration. The initial exploration work programme would be restricted to an aeromagnetic survey and drilling of up to five stratigraphic core boreholes. No stimulation, pressure testing, hydraulic fracturing or water abstraction is included in the proposed exploration work.

Based on Afro Energy's existing ER in the Amersfoort area and its success of extracting commercial rates of gas from unstimulated test boreholes, hydraulic fracturing will not at any time be considered as an activity for this project.

#### ENVIRONMENTAL AUTHORISATION PROCESS

In terms of the MPRDA a requirement for obtaining an ER is that an applicant must comply with Chapter 5 of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA).

In terms of the Environmental Impact Assessment (EIA) Regulations 2014, promulgated in terms of Chapter 5 of NEMA, an application for an ER requires Environmental

Authorisation from the competent authority, the Minister of Mineral Resources (or delegated authority), to carry out the proposed exploration programme (refer to Activity 18 in Listing Notice 2, GN R984).

In order for PASA, as the delegated authority, to consider an application for Environmental Authorisation and make a recommendation to the Minister of Mineral Resources (or delegated authority), a Scoping and EIA process must be undertaken.

SLR Consulting (South Africa) (Pty) Ltd ("SLR") has been appointed by Afro Energy as the Environmental Assessment Practitioner (EAP) to undertake the Scoping and EIA process.

#### PURPOSE OF THIS DOCUMENT

This document has been prepared by SLR to inform you about:

- the application for an ER;
- the application for Environmental Authorisation;
- the proposed exploration activities;
- the Scoping and EIA process being followed; and
- how you can register on the project database and participate in the Scoping and EIA process.

#### WHAT IS COAL BED METHANE?

CBM is a natural gas, comprising mostly methane (CH<sub>4</sub>) that is often found in association with coal deposits where it is created as a by-product during the formation of coal. The CBM is trapped in fine fractures within the coal as a result of pressure on the coal bed or may have migrated to associated geological strata. The CBM is only released if the coal bed is disturbed and the pressure reduced.

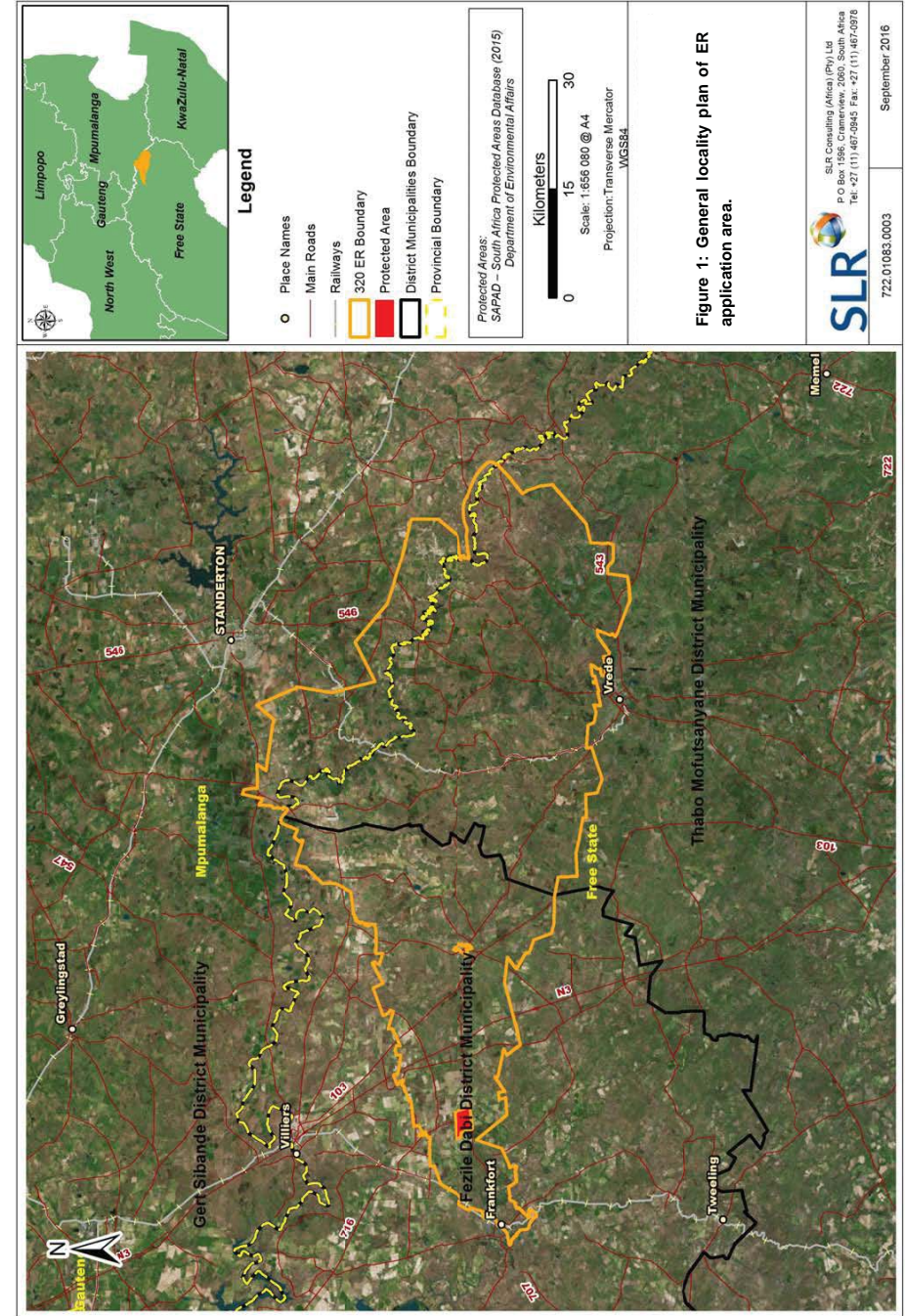
Methane is a relatively clean, environmentally friendly form of energy and can be used to generate electricity, provide heat for domestic and industrial purposes or be used as a fuel in vehicles. Once extracted, methane can be easily contained and safely used in many applications. There is an unmet demand for natural gas in South Africa.

#### HOW TO RESPOND:

Responses to this document can be submitted by means of the attached registration and response form, by direct submission and/or through communication with SLR.



**WHO TO CONTACT: Jeremy Blood**  
Tel: (021) 461 1118 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com



SLR Consulting (Africa) (Pty) Ltd  
P.O. Box 111, 1467-0845  
Tel: +27 (11) 467-0845 Fax: +27 (11) 467-0978  
772 01083 0003  
September 2016



## BRIEF OVERVIEW OF PROPOSED EXPLORATION

### EXPLORATION RIGHT APPLICATION AREA

The ER application area is located roughly between the towns of Standerton in the north, Frankfort in the west and Vrede in the east, which falls within portions of both the Free State and Mpumalanga provinces. The ER application area includes 1 055 farms over an area of approximately 240 000 ha (see Figure 1). A list of the properties included in the ER application area is provided in Attachment A.

The ER application area will exclude all properties where the granting of an ER is prohibited by Section 48 of the MPRDA. These include:

- Special Nature Reserves, National Parks, Nature Reserves, Protected Areas or Protected Environments (including World Heritage Sites, Marine Protected Areas, Specially Protected Forest Areas, Forest Nature Reserves and Forest Wilderness Areas);
- Land comprising a residential area;
- Any public road, railway or cemetery;
- Any land being used for public or government purposes or reserved in terms of any other law; or
- Areas identified by the Minister by notice in the Gazette in terms of Section 49.

### EXPLORATION WORK PROGRAMME

The initial exploration work programme is aimed at determining if there is a CBM gas resource that would warrant further exploration. The proposed exploration activities include the following:

- A minimum of three and a maximum of five stratigraphic core boreholes would be drilled.
- The gas content in coal would be measured by desorption testing of cores, while wireline geophysical logging would evaluate any gas in sandstones.
- An aeromagnetic survey (approximately 50 km<sup>2</sup> in extent) would be undertaken within the ER area.

If the need for further exploration is identified through undertaking of the early phase exploration, as proposed, then an application would be made to obtain regulatory approval for such further work.

### CORE BOREHOLE DRILLING

#### Number and siting of core boreholes

Afro Energy is proposing to drill up to five stratigraphic core boreholes as part of the early exploration work programme. These boreholes have no purpose beyond exploration.

Possible drill sites have been identified based on data collected as part of the TCP. Afro Energy is currently in the process of discussing possible borehole locations with affected landowners. Site locations will be defined and site specific impact assessments undertaken during the course of the EIA process.

It should be noted that the final location of an exploration stratigraphic borehole is flexible and can be adjusted to minimise disturbance to landowner needs / activities and

local environmental sensitivities. The final location, establishment and management of all exploration sites would be undertaken in consultation with landowners and informed by the EIA process.

The proposal is to drill at least three of the boreholes during the first year, with the remainder being drilled during the second year.

#### Access and site demarcation

Private property would only be accessed with prior consent of the landowner and then in terms of a written agreement. Drill sites would be accessed using existing roads and farm tracks, where available. Although no roads would be constructed, short tracks to specific sites may be required.

The boundaries of the drill site would be demarcated and all exploration activities would take place within the demarcated footprint.

#### Drilling procedure

Afro Energy proposes to use rotary (diamond) core drilling to drill the stratigraphic core boreholes. A diagrammatic representation of the core drilling is shown in the Figure 2. The core holes, and the equipment used to drill them, are of the same type and scale as most water boreholes. The diameter of the proposed core holes would be 8.5 cm.

Drilling requires the use of a truck or trailer mounted, mobile drilling rig at target sites (see Figure 3). The drill rig would be accompanied by supporting equipment (vehicles, trailers, compressors, water tanks, pumps, caravan, etc.) and would be manned by a staff of approximately five persons. A typical diamond core drill rig and equipment requires an operating area of approximately 1 000 m<sup>2</sup> (33 m by 33 m).

The drilling rig would drill into the underground coal seams which are generally located at depths of greater than 200 m below the surface. It is possible that drilling may go as deep as 800 m. All exploration boreholes would be cased and cemented to depths below all potential aquifers. Water and biodegradable drilling fluids would be added down the hole to lubricate the drill bit, remove drill muds and cuttings, and maintain ideal hole conditions (discussed separately below).

Cores would be extracted from the coal seams (see Figure 4), collected in sample canisters and taken to the laboratory for desorption testing, i.e. where samples are examined, described and tested for gas quantity and quality. Wireline logging would also be performed by lowering a 'logging tool' into the boreholes in order to record the petrophysical properties.

The drilling operation would be undertaken during daylight hours only, between 06h00 and 18h00 hours. It is anticipated that the core drilling at a site would be completed within 3 to 4 weeks.

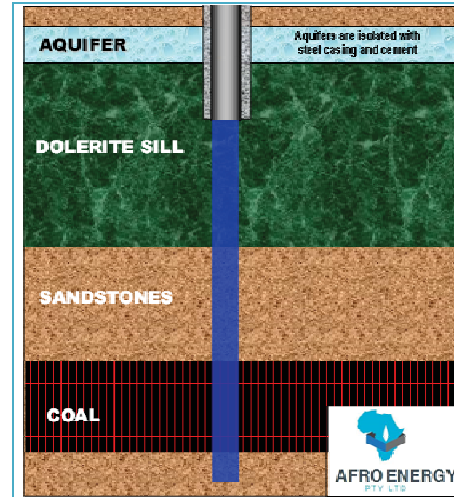


Figure 2: Illustration of exploration coring

#### Drilling fluids

Drilling through rock requires the use of various drilling additives to lubricate the drill bit and maintain ideal hole conditions. The exact combination of the drilling fluids depends on the specific drilling conditions. The drilling additives used include a variety of products that are widely used in the South African and international prospecting and water borehole drilling industries. The additives are largely biodegradable and are not rated as hazardous.

#### Water use

Water required for the operation of the drilling rig would be obtained locally (e.g. dam, river, stream or borehole), by agreement with landowners and in terms of regulatory requirements. Approximately 5 000 litres of water per day would be required per drilling site, if drilling conditions are reasonably good and the formation is solid.

During drilling some water would remain down the hole while the balance would be recycled. The water would be recycled through a series of aboveground skips where the drill muds and cuttings would settle out (see Figure 5). Drill cuttings would be later disposed of at an appropriately licensed facility.

#### Drilling completion and rehabilitation

Once drilling is completed the rig, all associated equipment and waste products, would be removed from site. The core hole would be capped pending further investigation or sealed with cement if not required further. In the case of sealing the borehole a down hole cement plug would be placed below all potential aquifers and the balance of the hole plugged with bentonite fluid. The steel casing would be cut below ground level (see Figure 6). Rehabilitation would be undertaken to re-establish the pre-exploration land use.



Figure 3: Typical core borehole drilling rig



Figure 4: Core laydown area



Figure 5: Above-ground skips for reuse of drilling fluid



Figure 6: Completed exploration borehole (stand pipe to be cut below ground level)

## AEROMAGNETIC SURVEY

An aeromagnetic survey is a common type of geophysical survey carried out to aid in the production of geological maps that are commonly used during mineral and petroleum exploration. The principle is similar to a magnetic survey carried out with a hand-held magnetometer, but allows much larger areas to be surveyed more efficiently for regional reconnaissance.

Surveys involve grid-based flights using a light fixed wing aircraft (see Figure 7), which is fitted with a magnetometer. The aircraft flies at slow speeds (~ 130 knots) and at an altitude of between 40 and 60 m above ground. As the aircraft flies, the magnetometer measures and records the total intensity of the magnetic field. The resulting aeromagnetic map shows the spatial distribution and relative abundance of magnetic minerals (most commonly the iron oxide mineral magnetite) in the upper levels of the Earth's crust. Since different rock types differ in their content of magnetic minerals, the magnetic map allows a visualisation of the geological structure of the upper crust in the subsurface, particularly the spatial geometry of bodies of rock and the presence of faults and folds.

It is envisaged that up to a maximum of 50 km<sup>2</sup> would be surveyed with a spacing of between 500 m and 750 m between lines. In good weather the survey would take approximately than 8 days to complete.



Figure 7: Typical survey plane

## STAFF

Early phase exploration would create relatively few job opportunities as most work is contracted to specialist service providers.

A drill-rig is normally manned by a crew of up to 5 persons, who would be accommodated in nearby towns or at locations agreed with the landowner.

## POSSIBLE FUTURE EXPLORATION

The period for which the ER is required is three years and the current application is only to authorise the initial work programme as described above.

During the initial exploration period Afro Energy would decide whether to exercise its exclusive rights to apply for a renewal of the ER based on the results of the early

exploration work programme. Any further exploration work to evaluate an identified resource would require further approval in terms of the MPRDA and NEMA. Such approvals would be subject to the relevant legal requirements which include further public consultation and environmental assessment.

## SCOPING AND EIA PROCESS

### AIMS AND OBJECTIVES

The Scoping and EIA process aims to:

- provide information on the proposed project and associated alternatives;
- provide a reasonable opportunity for interested and affected parties (I&APs) to be involved in the process;
- ensure that all potential key environmental issues and impacts that would result from the proposed project are identified;
- provide information on the potentially affected environment;
- assess potential impacts of the proposed project alternative during the different phases of project development;
- present appropriate mitigation or optimisation measures to minimise potential impacts or enhance potential benefits, respectively; and
- allow for informed, transparent and accountable decision-making by the relevant authorities.

### STEPS IN THE SCOPING AND EIA PROCESS

The steps of the Scoping and EIA process include the following:

#### 1. Pre Application Phase (Sep to Nov 2016)

- > Identify and contact directly affected landowners.
- > Identify and inform I&APs and regulatory authorities of the proposed project (via direct consultation, newspaper advertisements, site notices and BID).
- > Host stakeholder and information-sharing meetings.
- > Receive initial issues and responses from I&APs.
- > Submit application to PASA (ito NEMA).

#### 2. Scoping Phase (Nov to Dec 2016)

- > Identify issues that require further investigation.
- > Define terms of reference for work to address potential impacts.
- > Compile Scoping Report.
- > Distribute Scoping Report for 30-day review and comment period.
- > Collect I&AP comments, update Scoping Report and forward to PASA for a decision.

#### 3. EIA Phase (Jan to May 2017)

- > Undertake relevant specialist investigations.
- > Assess impacts of proposed project and compile Environmental Impact Report (EIR) and Environmental Management Programme (EMPr).
- > Distribute EIR and EMPr for 30-day review and comment period.
- > Host public-feedback meetings, if required.
- > Assimilate I&AP comments, update EIR and EMPr and forward to PASA for decision-making.

## 4. Decision and Appeal (June – Sep 2017)

- > PASA to review EIR and EMPr and make a recommendation to the Minister (or delegated authority).
- > Notify I&APs and regulatory authorities of the decision and right to appeal in terms of Appeal Regulations.

## POTENTIAL ENVIRONMENTAL IMPACTS

Relevant issues identified during the Scoping Phase will be investigated as part of the EIA process. The following issues and impacts are some anticipated concerns related to the proposed exploration programme. Their inclusion in this list is no relation to the probability of occurrence nor an indication of possible significance.

- **Land tenure:** The issuance of an ER and subsequent exploration activities would not result in any change in land tenure. The owner remains in control of the surface rights.
- **Land use:** Drilling would preclude other land uses ( $\pm 1\ 000\ m^2$ ) for the duration of the drilling process, which may conflict with existing land uses.
- **Soil and land capability:** Activities at drill sites may affect soils and land capability through vegetation clearance and/or physical disturbance (e.g. compaction).
- **Biodiversity:** Activities at drill sites have the potential to disturb and/or result in the loss of vegetation, faunal habitats and related ecosystem functionality. In addition, disturbed areas could result in the establishment of alien and invasive species.
- **Surface water:** The proposed activities at drill sites have the potential to impact surface water resources through consumptive use and the discharge of contaminants.
- **Groundwater:** The proposed drilling has the potential to use and contaminate groundwater resources which could impact availability to other groundwater users and the ecosystem.
- **Heritage resources:** The proposed on-site activities may have potential to damage heritage resources.
- **Air:** The proposed project has the potential to contribute to air pollution, particularly through dust emissions from vehicles on gravel roads and the release of gas from boreholes.
- **Noise:** The proposed project has the potential to cause noise pollution during drilling and aeromagnetic survey activities.
- **Visual:** The placement of drilling equipment has the potential to create short-term visual impacts.
- **Farm Safety:** Access by unknown persons to farms has the potential to influence security on farms. Operating heavy vehicles and equipment may also pose safety risks.

Since the exact location of a site is flexible and can be adjusted to accommodate, *inter alia*, environmental sensitivities, the majority of these impacts can be avoided. The placement of the target sites would be undertaken in consultation with landowners to ensure that any conflicting land uses are avoided where possible and disturbance to farming activities are kept to a minimum.

## INVITATION TO REGISTER AND COMMENT

If you or your organisation wish to register as an I&AP on the project database and/or wish to raise any initial issues or concerns regarding the proposed project, please make use of the attached Registration and Response Form and forward it to SLR at your earliest convenience. For comments to be included in the Scoping Report they must reach SLR by **no later than 21 October 2016**.

I&APs registered on the project's database will receive notification of further consultation opportunities, report review periods and the decision.

## INFORMATION-SHARING MEETINGS

You are invited to attend the following information-sharing meetings:

Date and Time	Venue
10 Oct 2016; 15h00	Siesta Guest House, Farm Merrydale, R26 Reitz Road, 12 km from Frankfort
11 Oct 2016; 09h00	Standerton Golf Club, Peter Bailey Boulevard, Standerton
11 Oct 2016; 15h00	NG Kerk Hall, Jan Pen Street, Cornelia
12 Oct 2016; 09h00	Vrede Hotel, Kerk Street, Vrede



## Attachment A:

## List of properties in the Exploration Right area

Farm Name	Farm No.	Portion No.	LPI Code
ALICE	796	0 (FE)	F03700000000079600000
ALEEN	1129	0	F03700000000112900000
ALPHA	774	0	F03700000000077400000
ALPHA	1099	0	F03700000000109900000
AMASGIT	821	0 (FE)	F03700000000082100000
ANASTROOS	1170	0	F03700000000117000000
ANISDALE	865	0	F03700000000086500000
ANISDEEL	883	0 (FE)	F03700000000088300000
ANTONIE'S RUST	1029	0	F03700000000102900000
ARINDELA	123	0	F03700000000012300000
ASCENT	79	0	F03700000000007900000
ASCENT A	906	0	F03700000000090600000
ASCENT SCHOOL GROUND	817	0	F03700000000081700000
BALLAST PIT	87	0	F03700000000008700000
BALLAST PIT	103	0	F0370000000010300000
BALTIMORE	85	0 (FE)	F03700000000008500000
BAKKKRAAL	799	0	F03700000000079900000
BARENDINA	568	0 (FE)	F03700000000056800000
BEGINSEL	1073	0	F03700000000107300000
BEGINSEL	1115	0	F03700000000111500000
BELLEVEUE	1158	0	F037000000000115800000
BERLIN	882	0 (FE)	F03700000000088200000
BEYERS	725	0 (FE)	F03700000000072500000
BLOEMHOF	390	0	F03700000000039000000
BLOEMHOF	488	0	F03700000000048800000
BLOEMHOF	1130	0	F03700000000113000000
BLOEMHOF	1318	0 (FE)	F03700000000131800000
BLOEMVELD	316	0	F03700000000031600000
BUEGOMBOGCH	405	0	F03700000000040500000
BLUDE VOORUITZICHT	727	0	F03700000000072700000

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Farm Name	Farm No.	Portion No.	LPI Code
BLDSCAP	907	0	F03700000000090700000
BLDSCAP	1035	0	F03700000000103500000
BOOMPE ALLEEN	1357	0	F03700000000135700000
BOOMPE ALLEEN	1358	0	F03700000000135800000
BOSCHES PLAAT	329	0	F03700000000032900000
BOSHOFFSRUST	118	0	F03700000000011800000
BOTHA	125	0 (FE)	F03700000000012500000
BOTHASRUST	547	0 (FE)	F03700000000054700000
BOVENTOP	1055	0	F03700000000105500000
BRAKDAM	1080	0	F03700000000108000000
BRAKFONTEIN	422	0	F03700000000042200000
BRAKHOEK	749	0 (FE)	F03700000000074900000
BRAKVLEI	423	0	F03700000000042300000
BREGESVILLE	820	0 (FE)	F03700000000082000000
BREYTERBACH	90	0	F037000000000090000000
BULT FONTEIN	392	0	F03700000000039200000
BURHAM	962	0 (FE)	F03700000000096200000
BURUNGA	791	0	F03700000000079100000
CERES	284	0 (FE)	F03700000000028400000
CHARLES HOPE	282	0	F03700000000028200000
CHRISTIANA	872	0	F03700000000087200000
CLOCCOLAN	1	0 (FE)	F03700000000000100000
CLOERVELD	563	0 (FE)	F03700000000056300000
COENRADINA	459	0 (FE)	F03700000000045900000
CONCORDIA	908	0	F03700000000090800000
CONSOLATION	337	0 (FE)	F03700000000033700000
CORNELIA	857	0 (FE)	F03700000000085700000
DAERMAAD	1342	0	F03700000000134200000
DAM	104	0	F03700000000010400000
DANIELSRUST	993	0	F03700000000099300000

Farm Name	Farm No.	Portion No.	LPI Code
DANKGAR	1307	0 (FE)	F03700000000130700000
DASPOORT	1280	0	F03700000000128000000
DASSIEKLIP	446	0	F03700000000044600000
DE LA REY	728	0	F03700000000072800000
DE ROTSEN	32	0	F03700000000003200000
DE RUST	317	0	F037000000000317000000
DE WERF	933	0	F03700000000093300000
DE WET	867	0	F03700000000086700000
DEEUIT	346	0 (FE)	F03700000000034600000
DE/ONDALDE	528	0 (FE)	F03700000000052800000
DIE KOM	1126	0	F03700000000112600000
DIE KRANSE	1174	0	F03700000000117400000
DIERPLAAGTE	1240	0	F03700000000124000000
DIAARSUS	1039	0	F03700000000103900000
DOONER POORT	320	1	F037000000000320000001
DONNERHOEK	530	0 (FE)	F03700000000053000000
DOORNBOM	1237	0 (FE)	F03700000000123700000
DOONKOP	439	0	F03700000000043900000
DRIEFONTEIN	286	0 (FE)	F03700000000028600000
DRIEHOEK	761	0	F03700000000076100000
DRIEKUL	332	0 (FE)	F03700000000033200000
DRILVLEI	368	0 (FE)	F03700000000036800000
DRUKMAKKAAR	712	0 (FE)	F03700000000071200000
EENHAEZER	805	0	F03700000000080500000
EENHAEZER	909	0	F03700000000090900000
EENHAEZER	983	0	F03700000000098300000
EENHAEZER	1193	0	F03700000000119300000
EENBRACHT	419	0	F03700000000041900000
EENSE/ONDEN	134	0	F03700000000013400000
EENSE/ONDEN	647	0	F03700000000064700000

## Attachment A:

## List of properties in the Exploration Right area

Farm Name	Farm No.	Portion No.	LPI Code
MEALIELAND	889	0	F01400000000088900000
MIDDELSPRUIT	665	0 (FE)	F01400000000066500000
MIMME	781	0	F01400000000078100000
MIMMES DEEL	972	0 (FE)	F01400000000097200000
MONDAM	170	0	F01400000000017000000
MCOONWATER	683	0	F01400000000068300000
MUTJUAL	1104	0	F01400000000110400000
MUTJUAL A	1105	0	F01400000000110500000
MAALWPOORT	179	0	F01400000000017900000
MAPER	461	0	F01400000000046100000
NEMANOSKRAAL	178	0 (FE)	F01400000000017800000
NIEMEYER'S RHU	95	0 (FE)	F01400000000009500000
NOOITGEDACHT	1111	0	F01400000000111100000
ONGEGUND	973	0 (FE)	F01400000000097300000
PAARDENONTJEN	906	0	F01400000000090600000
PARADYS	1115	0	F01400000000111500000
PERTH	94	0	F01400000000009400000
PETRUSDOFF	1110	0	F01400000000111000000
PHILIPS PAN	1294	0 (FE)	F01400000000129400000
PUNTJE	123	0	F01400000000012300000
PVRSYTEL	281	0 (FE)	F01400000000028100000
PAMA	1086	0	F01400000000108600000
RAUTENBACH'S RUST	324	0	F01400000000032400000
RUNNYVEEDE	197	0	F01400000000019700000
RUSTIG	1109	0	F01400000000110900000
SAHALI	1436	0	F01400000000143600000
SCHAPENRUST	534	0	F01400000000053400000
SCHRYVERSPOST	98	0	F01400000000009800000
SINA	477	0	F01400000000047700000
SMADEEL	210	0	F01400000000021000000

Farm Name	Farm No.	Portion No.	LPI Code
SOPHIE'S DEEL	1255	3	F01400000000125500003
SPEB BONA	903	0	F01400000000090300000
SPITZKOP	289	0	F01400000000028900000
STREZAKO	290	0	F01400000000029000000
SUSANNA	483	0	F01400000000048300000
SWINEVLEUDE	780	0	F01400000000078000000
TAAROSCHSPRUIT	217	1	F01400000000021700001
TERKMAN	925	0 (FE)	F01400000000092500000
TEIPE	99	0	F01400000000009900000
UITKOMS	1149	0	F01400000000114900000
UITZEK	223	0 (FE)	F01400000000022300000
VLAAR PLAATS	499	0	F01400000000049900000
VOORSPOED	1442	0	F01400000000144200000
VOORUITZICHT	804	0	F01400000000080400000
WELBERACHT	1009	0	F01400000000100900000
WELGEGUND	241	0 (FE)	F01400000000024100000
WELGELUK	676	0	F01400000000067600000
WELGELUK	1231	0 (FE)	F01400000000123100000
WELKOM	901	0 (FE)	F01400000000090100000
WILGEWIEVERSPRUIT	86	0	F01400000000008600000
WITRAND	504	0	F01400000000050400000
WONDERVAL	1082	0 (FE)	F01400000000108200000
ZALAND	645	0	F01400000000064500000
ZAKPLAATS	876	0	F01400000000087600000
ZATELOW	516	0	F01400000000051600000
ZWAHOEK	599	0	F01400000000059900000
Registration Division: HS			
GOEGEDACHT	38	1	TOHS00000000003800001
GOEGEVONDEN	5	0	TOHS00000000000500000
KAFFERSKRAAL	47	0	TOHS00000000004700000

Farm Name	Farm No.	Portion No.	LPI Code
KROONDRAI	39	1	TOHS00000000003900001
KROONDRAI	258	0	TOHS00000000025800000
LEEUWKUL	27	1	TOHS00000000027000001
MISPAH	4	0 (FE)	TOHS0000000000400000
PIETER FRANCOIS	1	0 (FE)	TOHS00000000000100000
POORTJE	6	0 (FE)	TOHS00000000000600000
POTBERG	30	1	TOHS00000000003000001
RIETVLEI	33	1	TOHS00000000003300001
RUITERSKUL	25	12	TOHS00000000025000012
SPAN DE KROON	29	0 (FE)	TOHS00000000029000000
STERKONTJEN	34	0	TOHS00000000003400000
VAARVIERSDRIET	2	0 (FE)	TOHS00000000000200000
VERGENGES	31	0 (FE)	TOHS00000000003100000
VOEGESTUJSPOORT	36	0 (FE)	TOHS00000000003600000
WINKELHAAK	46	1	TOHS00000000004600001
ZWAARTKOPES	3	1	TOHS00000000000300001
Registration Division: Vede Rd			
AANDENKING	514	0	F03700000000051400000
AANSLUIT	883	0 (FE)	F03700000000088300000
AANSLUITING	736	0	F03700000000073600000
AANTEEL	798	0 (FE)	F03700000000079800000
AANWANG	1288	1	F03700000000128800001
ABERDENEN	1214	0	F03700000000121400000
ACTION HOMES	649	0 (FE)	F03700000000064900000
AFGUNSDAM	1121	0	F03700000000112100000
AFGUNST	19	0 (FE)	F03700000000001900000
AGRICOLA	1278	0	F03700000000127800000
ALBANIJE	948	0	F03700000000094800000
ALBON	311	0 (FE)	F03700000000031100000
ALETTA	475	1	F03700000000047500001

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## Attachment A:

## List of properties in the Exploration Right area

Farm Name	Farm No.	Portion No.	LPI Code
KALABAS FONTEIN	303	0	F03700000000033000000
KAMP	76	0	F03700000000007600000
KATMASRUS	1176	0	F03700000000117600000
KEBON	764	0	F03700000000076400000
KEBWIJEDER	961	0	F03700000000096100000
KENTON	309	0	F03700000000030900000
KBO	844	0	F03700000000084400000
KILOLS	1321	0 (FE)	F03700000000132100000
KINDERSDEEL	1084	0	F03700000000108400000
KINGTON	870	0	F03700000000087000000
KISMET	1139	0 (FE)	F03700000000113900000
KLAVER VLEY	285	0 (FE)	F03700000000028500000
KLIEN BEGIN	900	0	F03700000000090000000
KLIEN BRAK	135	0	F03700000000013500000
KLIEN GENOEG	866	0	F03700000000086600000
KLIEN PARADYS	352	0	F03700000000035200000
KLIENDEEL	1038	0	F03700000000103800000
KLIENDRAAI	1202	0	F03700000000120200000
KLIENFONTEIN	431	0 (FE)	F03700000000043100000
KLIJ VONTEIN	354	0 (FE)	F03700000000035400000
KLIJFONTEIN	23	0	F03700000000002300000
KLIJPKOPJE	1195	0	F037000000000119500000
KLIJPRAND	754	0	F03700000000075400000
KOPPE ALLEEN	347	0	F03700000000034700000
KOPPE EEN	84	0	F03700000000008400000
KORTFONTEIN	1127	0 (FE)	F037000000000112700000
KROONRAAI	91	0 (FE)	F03700000000009100000
KROONVLEI	751	0 (FE)	F03700000000075100000

Farm Name	Farm No.	Portion No.	LPI Code
KIARTEL VLEY	355	0 (FE)	F03700000000035500000
LA ROCHELLE	850	0	F03700000000085000000
LANDSRGON	290	0	F03700000000029000000
LANG EN SMAL	934	0	F03700000000093400000
LANGDRAAI	574	0 (FE)	F03700000000057400000
LANGDRAAI	1192	0	F037000000000119200000
LANGSKUL	1093	0	F037000000000109300000
LANGSRUIT	752	0	F03700000000075200000
LANGSRUIT	1037	0	F03700000000103700000
LANGVERVACHT	576	0	F03700000000057600000
LANGVERVACHT	1272	1	F03700000000127200001
LEBANON	1053	0 (FE)	F037000000000105300000
LEEUW KOP	287	0	F03700000000028700000
LEEUW SPRUIT	328	0	F03700000000032800000
LEEUWPOORT	1120	0 (FE)	F037000000000112000000
LEIDING	602	0	F03700000000060200000
LEIENSBRON	1076	0	F037000000000107600000
LIEFGEKOZEN	1399	0	F037000000000139900000
LOMBARD	1385	0	F037000000000138500000
LORRANE	963	0	F03700000000096300000
LOSKOP	1020	0	F037000000000102000000
LOURENTIA	395	0 (FE)	F037000000000039500000
LOURENTIA	1051	0	F037000000000105100000
LOUWRENS RUST	315	0 (FE)	F037000000000031500000
MADSTONE	297	0 (FE)	F03700000000029700000
MALANSKRAAL	1180	0	F037000000000118000000
MALEFA	129	0	F037000000000012900000
MALTA	1066	1 (FE)	F037000000000106600001
MAMBAKLOOF	1074	0	F037000000000107400000
MARA	302	0 (FE)	F037000000000030200000

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## Attachment A:

## List of properties in the Exploration Right area

Farm Name	Farm No.	Portion No.	LPI Code
EENSGEVONEN	1203	0	F037000000000120300000
EENSGEVONEN	1297	0 (FE)	F037000000000129700000
EKENHOF	1243	0	F037000000000124300000
EL-BETHEL	1271	0	F037000000000127100000
ELORADO	740	0	F03700000000074000000
ELORADO	1117	0	F037000000000111700000
ELIM	926	0	F03700000000092600000
EMBRENSIA	697	0 (FE)	F03700000000069700000
EMMERENTIA	14	0	F03700000000001400000
EMMERENTIA	531	1	F03700000000053100001
ENERGY	50	0	F03700000000005000000
ENFDEEL	994	0	F03700000000099400000
ENFDEEL	1107	0 (FE)	F037000000000110700000
ENFDEEL	1113	0	F037000000000111300000
ENFDEEL	1182	0	F037000000000118200000
ENFDEEL	1335	0 (FE)	F037000000000133500000
ENFENIS	938	0	F03700000000093800000
ENGRUNS SPRUIT	433	0	F03700000000043300000
ENKENVVD	138	0	F037000000000013800000
FAIRPLAY	279	0	F037000000000027900000
FAAIJ UITZICHT	121	0	F037000000000012100000
FAIKERS RUST	810	0	F037000000000081000000
GANKERS COTTAGE	88	0	F03700000000008800000
GEDULDSKRAAL	289	0	F03700000000028900000
GEDULD	1313	0	F037000000000131300000
GELUK	325	0	F037000000000032500000
GELUKSDEEL	484	0 (FE)	F037000000000484000000
GELUKSKOPPE	1125	0 (FE)	F0370000000000112500000
GENOEG	597	0 (FE)	F037000000000059700000
GERT BROERS RUST	860	0	F037000000000086000000

Farm Name	Farm No.	Portion No.	LPI Code
GERIEGROUVE	819	0	F037000000000081900000
GESCHENK	622	0 (FE)	F03700000000062200000
GESLAAGD	1005	0	F037000000000100500000
GEWAAG	1184	0 (FE)	F037000000000118400000
GEWEDACHT	312	0	F037000000000031200000
GEORGENDOEG	590	0	F03700000000059000000
GEORGENDOEN	1071	0	F037000000000107100000
GOEDIED	306	0 (FE)	F037000000000030600000
GOOD MOPE	603	0	F03700000000060300000
GOOD LUCK	518	0	F037000000000051800000
GOODLAND	701	0	F037000000000070100000
GORDON	1085	0 (FE)	F037000000000108500000
GRAS PLAATS	344	0	F037000000000034400000
GRASVLEI	589	0	F037000000000058900000
GREENVILLE	343	0	F03700000000034300000
GROOT GELUK	1244	0	F037000000000124400000
GROOTVLEI	51	0	F037000000000005100000
GRACHTVLEI	326	0 (FE)	F037000000000032600000
GRUJSPLAATS	336	0 (FE)	F037000000000033600000
GUTLAND	578	0	F037000000000057800000
HANNIEDEEL	899	0	F037000000000089900000
HANNOVER	561	0	F037000000000056100000
HARPY DALE	25	0 (FE)	F037000000000002500000
HARAN	753	0	F037000000000075300000
HARTEESTFONTEIN	324	0	F037000000000032400000
HARTINGH	429	0	F037000000000042900000
HEBRON	1199	0	F0370000000000119900000
HELTENVEDEN	485	0 (FE)	F037000000000048500000
HELTENVEDEN	601	0	F037000000000060100000
HELDERFONTEIN	10	0	F037000000000001000000

Farm Name	Farm No.	Portion No.	LPI Code
HELDERSROOM	1159	0 (FE)	F037000000000115900000
HELENA	98	0	F037000000000009800000
HELENA	1105	0	F037000000000110500000
HELENA	1036	0	F037000000000103600000
HENDRIKA	1086	0	F037000000000108600000
HENNIS DEEL	793	0 (FE)	F037000000000079300000
HERINNING	797	0	F037000000000079700000
HESTER	1089	0	F037000000000108900000
HESTERSDEEL	1006	0 (FE)	F037000000000100600000
HETTEDALE	792	0	F037000000000079200000
HOERPAN	599	0	F037000000000059900000
HOERBULT	790	0 (FE)	F037000000000079000000
HOERBULT	1204	0 (FE)	F037000000000120400000
HOOGGELIEGEN	964	0	F037000000000096400000
HOUD MOED	788	0	F037000000000078800000
HURTERS RUST	1134	0	F0370000000000113400000
INLOOP	836	0	F037000000000083600000
IZAKSDEEL	823	0 (FE)	F037000000000082300000
JAARIE	987	0	F037000000000098700000
JAARIESDAL	480	0 (FE)	F037000000000048000000
JACKALS KOP	502	0	F037000000000050200000
JACOBASDEEL	912	0	F037000000000091200000
JACOBUSDAAL	744	1	F037000000000074400001
JACOBUSDEEL	1081	0	F0370000000000108100000
JAKHALSRAND	985	0	F037000000000098500000
JOEINASRUST	520	0	F037000000000052000000
JODITHS LAAGTE	763	0	F037000000000076300000
JUKSKY	816	0	F037000000000081600000
JUKSKY	470	0	F037000000000047000000
JUSTITIE	729	0	F037000000000072900000
KALFONTEIN	331	0 (FE)	F037000000000033100000

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**Attachment A: List of properties in the Exploration Right area**

Farm Name	Farm No.	Portion No.	LPI Code
SMARTVAL	1118	0	F0370000000011800000
SYERFONTEIN A	1014	0	F03700000000101400000
SYERFONTEIN B	1015	0	F03700000000101500000
SYERPOORT	203	1	F0370000000020300001
TERRA	385	0 (FE)	F0370000000038500000
TERREDE	456	0	F03700000000045600000
TERVEDEN	1072	0	F03700000000107200000
THE WILLOWS	1221	0	F03700000000122100000
THEODORUS HOOP	785	0 (FE)	F03700000000078500000
THOMAS VLEI	132	0 (FE)	F0370000000013200000
THYSRUST	1080	0	F0370000000010800000
TOGWAT	1128	0	F03700000000112800000
TRADOUW	1241	0	F03700000000124100000
TREEFONTEIN	137	0	F0370000000013700000
TREEFONTEIN	335	0 (FE)	F03700000000033500000
TREESPRUIT	1173	0	F03700000000117300000
TWISHOEK	1079	0	F03700000000107900000
ULSRUST	992	1	F0370000000099200001
UITKOMST	955	0	F0370000000009550000
UITKVK	20	0	F0370000000002000000
UITKVK	414	0	F03700000000041400000
UITKVK	830	0	F0370000000008300000
UITSPRUIT	594	0	F0370000000005940000
UITZICHT	313	0	F03700000000031300000
UITZEN	401	1	F03700000000040100001
UITZOEK	133	0 (FE)	F03700000000013300000
VAALBANK	482	0 (FE)	F0370000000004820000
VAALKOP	747	0 (FE)	F03700000000074700000
VAALSPRUIT	598	0	F0370000000005980000
VADERS GIFT	1091	0	F037000000000109100000

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Farm Name	Farm No.	Portion No.	LPI Code
VAN AARDT'S DAM	323	0	F03700000000032300000
VAN WILKS PAN	748	0 (FE)	F03700000000074800000
VARENS VLEI SIDING	86	0	F03700000000008600000
VARENSVLEI	327	0 (FE)	F03700000000032700000
VASTRAP	608	0	F03700000000060800000
VENTERSHOEK	519	0	F03700000000051900000
VENTERSKROON	772	0 (FE)	F03700000000077200000
VERGENOEG	910	0 (FE)	F0370000000009100000
VERHOOG	911	0	F03700000000091100000
VIERFONTEIN	486	0	F03700000000048600000
VLAK NEK	339	0	F03700000000033900000
VREEBOND	1175	0	F03700000000117500000
WAG N BLETJIE	1200	0	F0370000000012000000
WAERENRUST	718	0	F03700000000071800000
WATERLOOP	596	0	F03700000000059600000
WATERSTROOM	631	0	F03700000000063100000
WELGEDAAN	569	0 (FE)	F03700000000056900000
WELGESOND	1022	0	F03700000000102200000
WELGELIEN	53	0 (FE)	F03700000000005300000
WELGERUS	1296	0	F03700000000129600000
WELKOM	1119	0	F037000000000111900000
WELSTAND	404	0 (FE)	F03700000000040400000
WELTEVREDE	1160	0	F03700000000116000000
WELTEVREDEN	89	0 (FE)	F03700000000008900000
WELTEVREDEN	549	0 (FE)	F03700000000054900000
WELTEVREDEN	901	0	F03700000000090100000
WELTEVREDEN	988	0	F03700000000098800000
WELVERDIEND	371	0	F03700000000037100000
WELVERDIEND	1169	0	F03700000000116900000
WESSELS RUST	349	0 (FE)	F03700000000034900000

**Attachment A: List of properties in the Exploration Right area**

Farm Name	Farm No.	Portion No.	LPI Code
MOONVLEI	984	0	F03700000000098400000
MORESON	1078	0	F03700000000107800000
MOUIT MARIA	858	0	F03700000000085800000
MOUITPOORT	291	0	F03700000000029100000
MAZARETH	750	0	F0370000000007500000
NEMO	843	0 (FE)	F03700000000084300000
NEVADA	943	0	F03700000000094300000
NEVADA A	940	0	F0370000000009400000
NIEUWIE WONING	1145	0	F03700000000114500000
NONNIESBULT	859	0	F03700000000085900000
NOOITGEDACHT	958	0 (FE)	F03700000000095800000
NOOITGEDACHT	1092	0	F03700000000109200000
NOOITVERWACHT	372	0	F03700000000037200000
OMEGA	113	0	F03700000000011300000
ONRUST	1007	0	F03700000000100700000
ONS RUS	1019	0	F03700000000101900000
ONVERWACHT	790	0	F0370000000007900000
ONVERVAG	739	0	F03700000000073900000
ONHALEFONTEIN	353	0	F03700000000035300000
OREBEE LEEGTE	308	0	F03700000000030800000
ORBIE FONTEIN	270	0	F0370000000002700000
ORIBERPAAL	897	0	F03700000000089700000
PAARDEN VLEI	345	0	F03700000000034500000
PAARDENKOP	1349	0	F03700000000134900000
PADJANGS	441	0 (FE)	F03700000000044100000
PAMPOENKRAAL	314	0 (FE)	F03700000000031400000
PANDAM	716	0 (FE)	F03700000000071600000
PARK	775	0	F03700000000077500000
PATRSYHOEK	986	0	F03700000000098600000
PAUL'S DEEL	771	0 (FE)	F03700000000077100000

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Farm Name	Farm No.	Portion No.	LPI Code
PELGIRMSRUS	437	0 (FE)	F03700000000043700000
PETRSRUST	479	0	F03700000000047900000
PHILLESDEEL	348	0	F03700000000034800000
PHEMARS VLEI	461	0 (FE)	F03700000000046100000
PETERSDEEL	884	0	F03700000000088400000
PLAT VLEI	276	0	F03700000000027600000
PLATRAND	130	0	F03700000000013000000
PLATRAND	743	1	F03700000000074300001
PRIMROSE	99	0	F03700000000009900000
PRINSHOF	384	0	F03700000000038400000
PROSPECT	299	0 (FE)	F03700000000029900000
PUMPJE	767	0	F03700000000076700000
QUADAGA NEK	483	0 (FE)	F03700000000048300000
QUO VADIS	1138	0 (FE)	F03700000000113800000
RADNOR	417	1	F03700000000041700001
RADNORDEEL	1397	0	F03700000000139700000
RAND FONTEIN	529	0	F03700000000052900000
REMEMBER	1082	0	F03700000000108200000
RIEFONTEIN	288	1	F037000000000288000001
RIEFONTEIN	720	0	F0370000000007200000
RISHON	383	0 (FE)	F03700000000038300000
ROBBERTS DRIFT	322	0 (FE)	F03700000000032200000
ROELOFS DEEL	97	0 (FE)	F03700000000009700000
ROENDEBULT	956	0	F03700000000095600000
ROENDEKOP	593	0	F03700000000059300000
ROODE KRANS	310	0 (FE)	F03700000000031000000
ROODEPOORT	350	0 (FE)	F03700000000035000000
ROSENDAAL	949	0	F03700000000094900000
ROTTENDAM	746	0 (FE)	F03700000000074600000
ROZENDAL	1100	0 (FE)	F03700000000110000000

Farm Name	Farm No.	Portion No.	LPI Code
WILGEVLEI	824	0 (FE)	F03700000000082400000
WILHELMINA	9	0	F037000000000009000000
WILHELMINA	424	0 (FE)	F03700000000042400000
WITBANK	560	0	F0370000000005600000
WONDERFONTEIN	875	0	F03700000000087500000
ZAAHOKK	889	0	F03700000000088900000
ZAAKAMP	595	0	F03700000000059500000
ZAMENKOMST	386	0 (FE)	F03700000000038600000
ZAMENKOMST	400	0	F03700000000040000000
ZOE'ERBON	151	0	F03700000000015100000
ZONDERWATER	575	0	F03700000000057500000
ZUIKERVLEI	278	0	F03700000000027800000
ZUJUNING BANK	562	0 (FE)	F03700000000056200000
ZUJUNINGBANK A	1083	0	F03700000000108300000
ZWAALHOKK	657	0	F03700000000065700000
ZWAARTBANK	281	0	F03700000000028100000
ZWAARTFONTEIN	150	0	F03700000000015000000
ZWAARTKRANS	745	0 (FE)	F03700000000074500000
ZWAARTLAAGTE	600	0 (FE)	F03700000000060000000
-	77	0	F03700000000007700000

Farm Name	Farm No.	Portion No.	LPI Code
RUSTHOF	1270	0	F03700000000127000000
S.J.	1315	0	F037000000000131500000
SAALPAAKS	54	0 (FE)	F03700000000005400000
SAULSRUST	642	0	F03700000000064200000
SAXONY	26	0 (FE)	F03700000000002600000
SCHARPBULT	726	0	F03700000000072600000
SCHOONDRAMA	724	0 (FE)	F03700000000072400000
SCHOONHEID	82	0	F03700000000008200000
SCHULSPRUIT	24	0	F03700000000002400000
SEVEN OAKS	1222	0 (FE)	F03700000000122200000
SLANGFONTEIN	318	0 (FE)	F03700000000031800000
SLANGWIER	296	0	F03700000000029600000
SMALDEEL	136	0	F03700000000013600000
SMALDEEL	719	0	F03700000000071900000
SMALDEEL	1306	0	F03700000000130600000
SMALPUNT	989	0	F03700000000098900000
SMALPUNT	1337	0	F03700000000133700000
SOPHIA'S GUNST	887	0	F03700000000088700000
SOPRIVLEI A	1311	0	F03700000000131100000
SPEES BOVA	415	0 (FE)	F03700000000041500000
SPTSHOEK	913	0	F03700000000091300000
SPRINGBOKLAAGTE	387	0 (FE)	F03700000000038700000
STERKONTEIN	386	0	F03700000000038600000
STERKONTEIN	1114	0	F03700000000111400000
STENSRUST	191	0	F03700000000019100000
STRUDFONTEIN	477	0	F03700000000047700000
STURBMAASDRIFT	1239	0	F03700000000123900000
SUKSES	1198	0	F03700000000119800000
SUSANNA'S DEEL	742	0	F03700000000074200000
SUSSEDSDEEL	991	0	F03700000000099100000







# Afro Energy (Edms) Bpk

## EKSPLORASIEREGAANSOEK VIR PETROLEUM OP 'N AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN MPUMALANGA PROVINSIES (12/3/320 ER)

AGTERGRONDINLIGTINGSDOKUMENT

SEPTEMBER 2016

### INLEIDING

Afro Energy (Edms) Bpk het op 8 Julie 2016 by die Petroleumagentskap Suid-Afrika (PASA) om 'n Eksplorasierig (ER) aansoek gedoen om te eksplorieer vir "Petroleum en Gas". Die aansoek is ingedien in terme van Artikel 79 van die Wet op die Ontwikkeling van Minerale en Petroleumhulpbronne, 2002 (No. 28 van 2002) (MPRDA). PASA het die aansoek op 13 Julie 2016 aanvaar. Die ER aansoekgebied is groot en sluit verskeie plase in die Vrystaat en Mpumalanga provinsies in (sien Figuur 1).

Afro Energy het voorheen 'n Tegnieuse Samewerkingpermit (TCP) vir dieselfde area gehad. 'n Analise van die data wat as deel van die TCP ingesamel is (insluitende historiese boorkerne) het aangedui dat toestande gunstig is vir die aanwesigheid van metaangas in ondergrondse steenkoolae en verwante geologiese strata in die ER gebied. Afro Energy stel nou voor om verder in die area te eksplorieer vir steenkoolaagmetaan (SLM) gasbronne.

Die aansoek is vir die onderneem van vroeë-fase petroleum-eksplorasië wat as doel het om vas te stel of daar enige SLM gas teenwoordig is wat verdere eksplorasië kan regverdig. Die voorlopige drie-jaar eksplorasiewerkprogram sal beperk wees tot 'n aeromagnetiese opname en die boor van tot vyf stratigrafiese kernboorgate. Geen stimulering, druktoetse, hidrouliese breking of wateronttrekking word benodig of is ingesluit in die voorgestelde eksplorasiewerk nie.

Op grond van Afro Energy se bestaande ER in die Amersfoort area en hul sukses met die ontginning van kommersiële hoeveelhede gas uit ongestimuleerde toetsboorgate, sal hidrouliese breking onder geen omstandighede as 'n aktiwiteit vir hierdie projek oorweeg word nie.

### PROSES VIR OMGEWINGSMAGTIGING

In terme van die MPRDA moet 'n aansoeker voldoen aan die vereistes van Hoofstuk 5 van die Nasionale Wet op Omgewingsbestuur, 1998 (No. 107 van 1998) (NEMA) om 'n Eksplorasierig te kan bekom.

In terme van die Omgewingsimpakbepaling (OIB) Regulasies 2014, gepromulgeer in terme van Hoofstuk 5 van NEMA, benodig 'n aansoek om 'n Eksplorasierig Omgewingsmagtiging van die geregtelike gesag, die Minister van Minerale Hulpbronne (of aangewese gesag), om die voorgestelde eksplorasieprogram te onderneem (verwys na Aktiwiteit 18 van Aktiwiteitslys 2, GN R984). Vir PASA, as die aangewese gesag, om 'n aansoek om Omgewingsmagtiging te oorweeg en 'n aanbeveling aan die Minister van Minerale Hulpbronne (of aangewese gesag) te maak moet 'n Omvangstudie en OIB proses onderneem word.

SLR Consulting (South Africa) (Edms) Bpk ("SLR") is deur Afro Energy aangestel as die Omgewingsimpakpraktisyn (EAP) om die Omvangstudie en OIB proses te onderneem.

### DOEL VAN HIERDIE DOKUMENT

Hierdie dokument is saamgestel deur SLR om u in kennis te stel aangaande:

- die aansoek om 'n Eksplorasierig;
- die aansoek om Omgewingsmagtiging;
- die voorgestelde eksplorasië aktiwiteite;
- die Omvangstudie en OIB proses wat gevolg word; en
- hoe u kan registreer op die projekdatabasis en kan deelneem aan die Omvangstudie en OIB proses.

### WAT IS STEENKOOLLAAGMETAAN?

SLM is 'n aardgas wat hoofsaaklik bestaan uit metaan (CH<sub>4</sub>) wat dikwels aangetref word saam met steenkoolae waar dit as 'n neweproduk tydens die vorming van steenkool ontstaan. Die SLM word vasgevang in fyn krake binne-in die steenkool, as gevolg van druk op die koollaag, of dit kon na verwante geologiese strata migreer het. Die SLM word net vrygestel as die koollaag versteur en die druk verminder word.

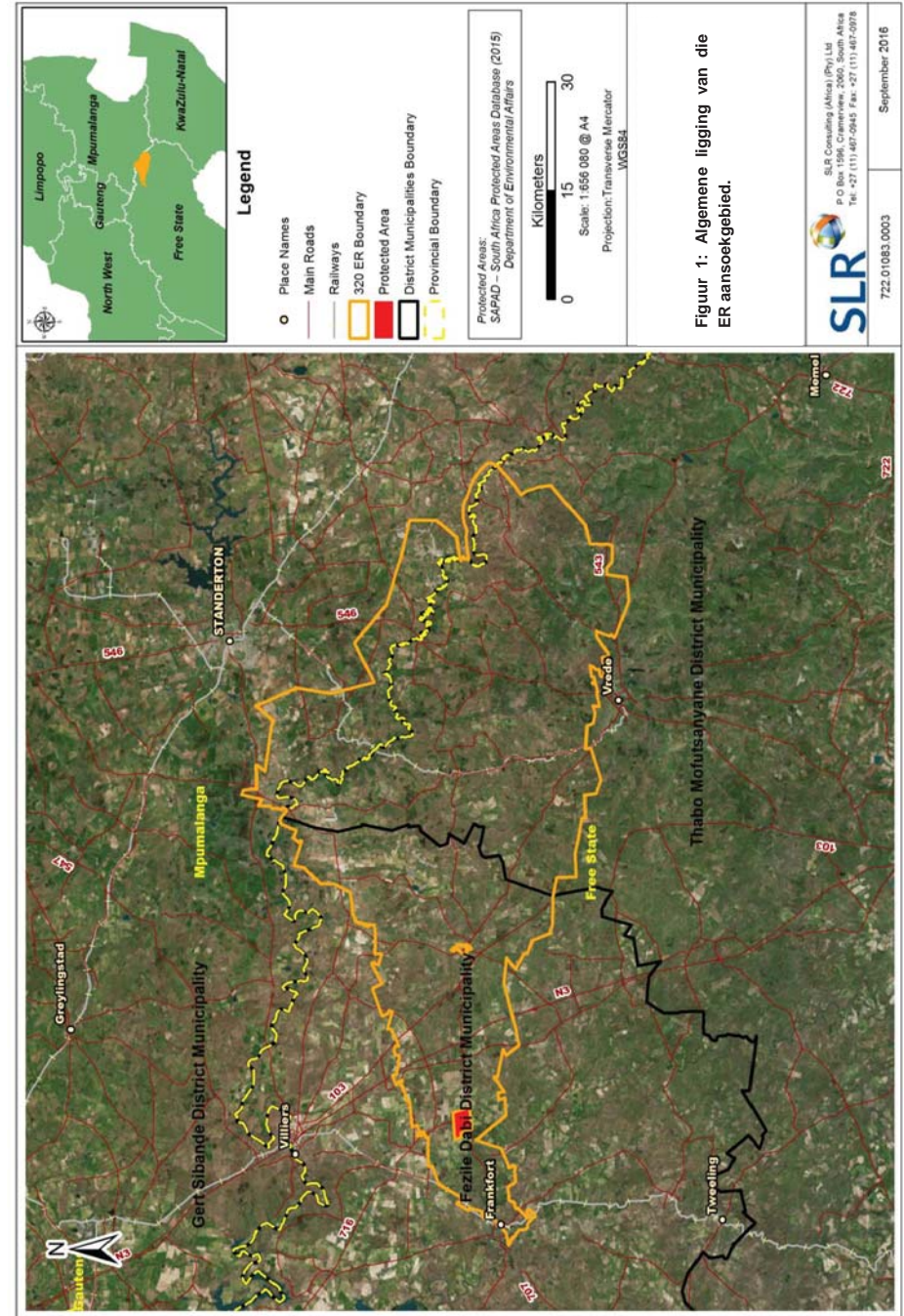
Metaan is 'n betreklik skoon, omgewingsvriendelike energievorm en kan gebruik word om elektrisiteit op te wek of hitte vir huishoudelike en nywerheidsdoeleindes te verskaf. Nadat metaan geëkstraheer is, kan dit maklik gestoor en veilig in talle toepassings gebruik word.

### HOE OM KOMMENTAAR TE LEWER:

Kommentaar op hierdie dokument kan m.b.v. die aangehegde registrasie en kommentaarvorm ingedien word deur direkte indiening by of deur kommunikasie met SLR.

### WIE OM TE KONTAK: Jeremy Blood

Tel: (021) 461 1118 Faks: (021) 461 1120  
E-pos: jblood@slrconsulting.com





## KORT OORSIG VAN VOORGESTELDE EKSPLORASIE

### EKSPLORASIEREG-AANSOEKGEBIED

Die ER aansoekgebied is rufweg tussen Standerton in die noorde, Frankfort in die weste en Vrede in die ooste geleë, wat binne gedeeltes van beide die Vrystaat en Mpumalanga provinsies val. Die ER aansoekgebied sluit 1 055 plase in binne 'n area van ongeveer 240 000 hektaar (sien Figuur 1). 'n Lys van die eiendomme wat by die aansoek ingesluit is word verskaf in Aanhangsel A.

Die ER aansoekgebied sluit alle eiendomme uit waar die toestaan van 'n Eksplorasierereg verbied word onder Artikel 48 van die MPRDA. Dit sluit in:

- Spesiale Natuurreservate, Nasionale Parke, Natuurreservate, Beskermd Areas of Beskermd Omgewings (insluitende Wêreld Erfenisgebiede, Mariene Beskermd Areas, Spesiaal Beskermd Woud areas, Woud Natuurreservate, en Woud Wildernisgebiede);
- Residensiële areas;
- Enige openbare pad, spoorlyn of begraaftplaas;
- Enige grond wat vir openbare of regeringsdoeleindes gebruik of gereserveer word in terme van enige ander wet; of
- Areas geïdentifiseer deur die Minister in die Staatskoerant in terme van Artikel 49.

### EKSPLORASIEWERKPROGRAM

Die aanvanklike eksplorasiewerkprogram het ten doel om vas te stel of daar 'n SLM gasbron aanwesig is wat verdere eksplorاسie kan regverdig. Die voorgestelde eksplorاسie aktiwiteite sluit die volgende in:

- 'n Minimum van drie en 'n maksimum van vyf stratigrafiese kernboorgate sal geboor word.
- Die boorkerne sal getoets word vir inhoud en gehalte van gas in die steenkoollae terwyl 'n geofisiese meettoestel binne die boorgat gebruik sal word om enige gas in die sandsteen te evalueer.
- 'n Aeromagnetiese opname ('n area van ongeveer 50 km<sup>2</sup>) sal binne die ER gebied onderneem word.

Indien die resultate van die voorgestelde vroeë-fase eksplorاسie wys dat verdere eksplorاسie benodig word sal daar aansoek gedoen word om die wetlike goedkeuring vir hierdie verdere werk te bekom.

### BOOR VAN KERNBOORGATE

#### Aantal en ligging van kernboorgate

Afro Energy is van voorneme om tot vyf stratigrafiese kernboorgate te boor as deel van die aanvanklike eksplorasiewerkprogram. Hierdie boorgate sal geen doel dien buiten vir eksplorاسie nie.

Moontlike boorplekke is geïdentifiseer op grond van data wat as deel van die TCP ingesamel is. Afro Energy is tans besig met die proses om moontlike boorplekke met geaffekteerde grondeienaars te bespreek. Die boorpersele sal gedefinieer word en terreinspesifieke impakstudies onderneem word gedurende die verloop van die OIB proses.

Neem kennis dat die finale ligging van 'n stratigrafiese eksplorasieboorgat nie vas is nie en dat dit aangepas kan word om ontwriging van grondeienaars se behoeftes / aktiwiteite en sensitiewe omgewings te beperk. Die finale ligging, vestiging en bestuur van alle eksplorasieplekke sal in ooreenstemming met grondeienaars onderneem word en na aanleiding van die OIB proses.

Dit word voorgestel om ten minste drie van die boorgate gedurende die eerste jaar te boor, met die oorblywende gate wat gedurende die tweede jaar geboor sal word.

#### Toegang en perseelafbakening

Privaat eiendom sal slegs betree word met vooraf toestemming van die grondeienaar en in terme van 'n geskrewe onderneming. Toegang tot boorplekke sal, waar beskikbaar, deur bestaande paaie en plaaspaaie verkry word. Alhoewel geen paaie gebou sal word nie, mag kort toegangstroetes na spesifieke boorplekke benodig word.

Die grense van die boorplekke sal afgebakend word en alle eksplorاسie aktiwiteite sal binne hierdie afgebakende voetspoor plaasvind.

#### Boorprosedure

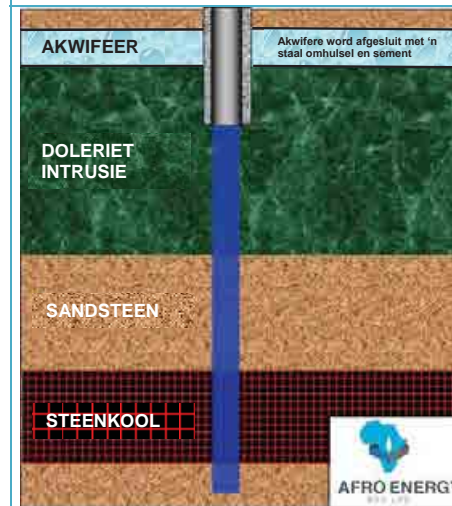
Afro Energy is van voorneme om roterende (diamantpunt) kernboorwerk te gebruik om die stratigrafiese kernboorgate te boor. 'n Diagrammatiese voorstelling van die kernboorwerk word in Figuur 2 verskaf. Die kernboorgate, en die boortoerusting is van dieselfde skaal as vir die meeste waterboorgate. Die deursnit van die voorgestelde kernboorgate sal 8.5 cm wees.

Eksplorasieboorwerk behels die gebruik van 'n vragmotor- of sleepwa-gemonteerde, mobiele boortoring by teiken boorplekke (sien Figuur 3). Die boortoring sal gepaard gaan met ondersteuningstoerusting (voertuie, sleepwaens, kompressors, watertanks, pompe, karavaan, ens.) en sal beman word deur 'n span van sowat vyf persone. 'n Tipiese diamant kernboortoring en toerusting vereis 'n operasionele area van ongeveer 1 000 m<sup>2</sup> (33 m by 33 m).

Die boortoring sal in die ondergrondse steenkoollae boor wat oor die algemeen by dieptes van meer as 200 m onder die oppervlak geleë is. Dit is moontlik dat daar tot so diep as 800 m geboor sal word. Alle eksplorasieboorgate sal tot onder alle potensiële akwifere met staal omhulsels en sement afgesluit word. Water en bio-afbreekbare boorvloei-stowwe sal in die boorgat afgepomp word om as smeermiddel vir die boorpunt te dien, om boormodders en boorgruis te verwyder, en om ideale boorgat-kondisies te handhaaf (word apart hieronder bespreek).

Kerne sal uit die steenkoollae onttrek word (sien Figuur 4), in monsterflesse versamel word en na die laboratorium geneem word om vir gashoeveelhede en gehalte te toets. 'n Meettoestel sal ook in die boorgat laat sak word om die petrofisiese kenmerke van die boorgat te meet ("wireline logging").

Die boorwerk sal beperk wees tot dagligure, tussen 06:00 en 18:00. Dit word verwag dat elke kernboorgat sowat 3 tot 4 weke sal neem om te voltooi.



Figuur 2: Illustrasie van die boor van eksplorasiekerne

#### Boorvloei-stowwe

Boor deur klip benodig die gebruik van verskeie boorvloei-stowwe om as smeermiddel te dien vir die boorpunt en om die ideale boorgat-kondisies te handhaaf. Die presiese kombinasie van boorvloei-stowwe hang af van spesifieke boorkondisies. Die byvoegsels wat gebruik word sluit 'n verskeidenheid produkte in wat algemeen in die Suid-Afrikaanse en internasionale boorindustrie gebruik word. Hierdie stowwe is grootliks bio-afbreekbaar en word nie as skadelik beskou nie.

#### Watergebruik

Water benodig vir die operasie van die boortoring sal plaaslik verkry word (bv. dam, rivier, stroom of boorgat), in ooreenstemming met die grondeienaars. Ongeveer 5 000 liter water sal per dag benodig word per boorperseel, as die boorkondisies redelik goed en die formasie solied is.

Gedurende die boorproses sal van die water in die boorgat bly terwyl die balans herwin sal word. Die water sal deur 'n reeks bogrondse houers herwin word waar die boormodders en gruis sal uitsak (sien Figuur 5). Boorgruis sal later by 'n gepaste gelisensieerde fasiliteit gestort word.

#### Afsluiting en rehabilitasie

Nadat boorwerk afgehandel is, sal die toring, alle verwante toerusting en afvalprodukte van die perseel verwyder word. Die boorgat sal oordek word in afwagting van verdere ondersoek of met sement verseël word as dit nie verder benodig word nie. As die boorgat verseël word sal 'n sementprop onder die vlak van enige potensiële akwifere lae geplaas word en die res van die boorgat met bentonietvloei-stof opgevolg word. Die staal omhulsel sal onder grondvlak afgesny word (sien Figuur 6). Rehabilitasie

sal onderneem word om toe te laat vir die hervestiging van die vorige grondgebruik.



Figuur 3: Tipiese boortoring vir die boor van kernboorgate



Figuur 4: Neerlegarea vir boorgatkerne



Figuur 5: Bogrondse houers vir herwinning van boorvloei-stof



Figuur 6: Voltooië eksplorasieboorgat (pyp moet nog gesny word)

## AEROMAGNETIESE OPNAME

'n Aeromagnetiese opname is 'n algemene tipe geofisiese opname wat help met die saamstel van geologiese kaarte wat algemeen gebruik word gedurende eksplorasië van minerale en petroleum. Die prinsiep is soortgelyk aan 'n magnetiese opname wat met 'n draagbare magnetometer onderneem word, maar dit maak opnames van veel groter areas moontlik en meer doeltreffend vir streekswyse verkenning.

Opnames behels roostergebaseerde vlugte deur 'n ligte vastevlerk vliegtuig (sien Figuur 7) toegerus met 'n magnetometer. Die vliegtuig vlieg teen 'n lae spoed (ongeveer 130 knope) by 'n hoogte van tussen 40 en 60 m bo die grond. Soos die vliegtuig vlieg meet en teken die magnetometer die totale intensiteit van die magnetiese veld aan. Die verkrygte aeromagnetiese kaart dui die verspreiding van magnetiese minerale (mees algemeen die ysteroksied mineraal magnetiet) aan en hoe relatief volop dit is in die boonste vlakke van die aardkors. Aangesien daar verskille is in die magnetiese minerale inhoud van verskillende rotstipes, maak die magnetiese kaart dit moontlik om die geologiese struktuur van die boonste kors onder die oppervlak te visualiseer. Die ruimtelike geometrie van rotstiggamme en die teenwoordigheid van breuke en voue is veral sigbaar.

Dit word beoog om die opname oor 'n maksimum area van 50 km<sup>2</sup> te onderneem met spasiëring van tussen 500 m en 750 m tussen lyne. In gunstige weersomstandighede sal die opname ongeveer 8 dae neem om te voltooi.



Figuur 7: Tipiese opname vliegtuig

## PERSONEEL

Die vroeë-fase eksplorasië sal relatief min werksgeleenthede skep, aangesien die meeste werk uitgekontraakteer sal word aan spesialisdiensverskaffers.

'n Boortoring word normaalweg deur 'n span van tot 5 persone beman, wat in die nabygeleë dorpe of by plekke, soos met die grondeienaar ooreengekom, gehuisves sal word.

## MOONTLIKE TOEKOMSTIGE EKSPLORASIE

Die tydperk waarvoor die ER benodig word is drie jaar en die huidige aansoek dien slegs vir goedkeuring van die aanvanklike drie-jaar werksprogram soos hierbo beskryf.

Gedurende die aanvanklike eksplorasietydperk sal Afro Energy besluit of hulle hul eksklusiewe regte sal uitoefen om vir 'n hernuwing van die ER aansoek te doen op grond van die resultate van die vroeë eksplorasiëwerkprogram. Enige verdere eksplorasiëwerk om 'n geïdentifiseerde bron te evalueer sal verdere goedkeurings in terme van die MPRDA en NEMA benodig. Hierdie goedkeurings sal onderhewig wees aan die relevante wetlike vereistes wat verdere publieke konsultasie en 'n omgewingsimpakstudie insluit.

## OMVANGSTUDIE EN OIB PROSES

### DOEL

Die doel van die Omvangstudie en OIB proses is om:

- inligting te verskaf aangaande die voorgestelde projek en verwante alternatiewe;
- 'n redelike geleentheid te bied aan belanghebbende partye om aan die proses deel te neem;
- te verseker dat alle potensiele sleutel omgewingskwessies en impakte verwant aan die voorgestelde projek geïdentifiseer word;
- inligting te verskaf aangaande die potensieel geïmpakteerde omgewing;
- potensiele impakte van die voorgestelde projekalternatiewe gedurende die verskillende fases van die projekontwikkeling te assesseer;
- respektiewelik, gepaste versagtings- of optimiseringsmaatreëls voor te stel om potensiele negatiewe impakte te versag of potensiele voordele te bevorder; en
- ingeligte, deursigtige en verantwoordbare besluitneming deur die relevante gesaghebbendes moontlik te maak.

## STAPPE IN DIE OMVANGSTUDIE EN OIB PROSES

Die stappe van die Omvangstudie en OIB proses sluit die volgende in:

### 1. Voor aansoekindiening (Sept tot Nov 2016)

- > Identifiseer en kontak direk geïmpakteerde grondeienaars.
- > Identifiseer en stel belanghebbende partye en regulatoriese owerhede in kennis van die voorgestelde projek (deur direkte konsultasie, koerantadvertensies, kennisgewingsborde en AID).
- > Hou aandeelhouer en openbare inligtingsvergaderings.
- > Ontvang voorlopige kwessies en kommentaar van belanghebbende partye.
- > Dien aansoek (in terme van NEMA) by PASA in.

### 2. Omvangstudiefase (Nov tot Des 2016)

- > Identifiseer kwessies wat verder ondersoek moet word.
- > Bepaal opdragterme vir ondersoeke om potensiele impakte te assesseer.
- > Stel Omvangverslag saam.
- > Versprei Omvangverslag vir 30-dae oorsig- en kommentaarperiode.
- > Ontvang publieke kommentaar, dateer Omvangverslag op en dien by PASA in vir 'n besluit.

## 3. OIB Fase (Jan tot Mei 2017)

- > Onderneem relevante spesialisondersoeke.
- > Assesseeur impakte van die voorgestelde projek en stel 'n Omgewingsimpakverslag (OIV) en Omgewingsbestuursprogram (OBP) saam.
- > Versprei die OIV en OBP vir 'n 30-dae oorsig- en kommentaarperiode.
- > Hou moontlike openbare terugvoervergaderings.
- > Assimileer publieke kommentaar, dateer die OIV en OBP op en dien dit by PASA in vir besluitneming.

## 4. Besluit en Appèl (Junie tot Sept 2017)

- > PASA oorweeg die OIV en OBP en maak 'n aanbeveling aan die Minister (of aangewese gesag).
- > Stel belanghebbende partye en regulatoriese owerhede in kennis van die besluit.
- > Appèlproses in terme van die Appèlregulasies.

## POTENSIELE OMGEWINGSIMPAKTE

Relevante kwessies wat gedurende die Omvangstudie geïdentifiseer word sal ondersoek word as deel van die OIB proses. Die volgende kwessies en impakte is van die verwagte knelpunte verwant aan die voorgestelde eksplorasiëprogram. Insluiting by hierdie lys hou nie verband met die moontlikheid dat dit mag plaasvind nie en dien ook nie as 'n aanduiding van die moontlike belangrikheid daarvan nie.

- **Eiendomsreg:** Die uitreik van 'n Eksplorasiëreg en daaropvolgende eksplorasië aktiwiteite sal nie lei tot 'n verandering in die eiendomsreg nie. Die eienaar sal beheer behou van die oppervlaksregte.
- **Grondgebruik:** Boorwerk sal voorrang geniet bo ander grondgebruike ( $\pm 1\,000\text{ m}^2$ ) vir die duur van die boorproses, wat konflik mag veroorsaak met bestaande grondgebruike.
- **Grond en geskiktheid:** Aktiwiteite by boorplekke mag grond en die geskiktheid daarvan vir verdere gebruik beïnvloed deur die verwydering van plantegroei en/of fisiese versteuring (bv. kompaktering).
- **Biodiversiteit:** Aktiwiteite by boorplekke mag lei tot die versteuring en/of verlies van plantegroei, diere habitatte en verwante ekosisteme funksies. Versteuring van die areas kan ook lei tot die vestiging van uitheemse en indringerspesies.
- **Oppervlakswater:** Die voorgestelde aktiwiteite by die boorplekke het die potensiaal om 'n impak te hê op oppervlakswaterbronne deur die gebruik daarvan sowel as die storting van kontaminante.
- **Grondwater:** Die voorgestelde boorwerk het die potensiaal om grondwater te gebruik en te besoedel, wat 'n impak mag hê op die beskikbaarheid aan ander grondwatergebruikers en die ekosisteam.
- **Erfenishulpbronne:** Die voorgestelde terplaaste aktiwiteite mag moontlik lei tot skade aan erfenishulpbronne.

- **Lug:** Die voorgestelde projek het die potensiaal om by te dra tot lugbesoedeling, spesifiek deur stofopslag van voertuie op grondpaaie en die vlylaat van gas uit die boorgate.
- **Geraas:** Die voorgestelde projek het die potensiaal om geraasbesoedeling te veroorsaak gedurende die boorproses en die aeromagnetiese opname.
- **Visueel:** Die opstel van boortoerusting het die potensiaal om 'n korttermyn visuele impak te skep.
- **Plaasveiligheid:** Toegang deur onbekende persone na plase het die potensiaal om sekuriteit op plase te beïnvloed. Die bestuur van swaar voertuie en toerusting mag ook 'n veiligheidsrisiko skep.

Aangesien die presiese ligging van 'n boorplek nie vas is nie en aangepas kan word om, *inter alia*, sensitiewe omgewings te akkommodeer, mag die oorgrote meerderheid van hierdie impakte vermy word. Die vasstel van die teikenpersele sal in oorleg met grondeienaars onderneem word om te verseker dat konflik met ander grondgebruike so ver as moontlik vermy word en ontwrigting van boerdery aktiwiteite tot 'n minimum beperk word.

## UITNODIGING OM TE REGISTREER EN KOMMENTAAR TE LEWER

Indien u of u organisasie wil registreer as 'n belanghebbende party op die projekdatabasis en/of u enige voorlopige kwessies of bekommernisse aangaande die voorgestelde projek het, maak asseblief gebruik van die aangehegte Registrasie en Kommentaarvorm en stuur dit aan SLR so gou dit u pas. Vir kommentaar om ingesluit te word in die Omvangstudieverslag moet dit SLR teen **21 Oktober 2016** bereik.

Belanghebbende partye wat op die projekdatabasis geregistreer is sal kennisgewing ontvang van verdere konsultasiegeleenthede, oorsigperiodes vir verslae en die besluit.

## OPENBARE INLIGTINGSVERGADERINGS

U word uitgenooi om die volgende openbare inligtingsvergaderings by te woon:

Datum en Tyd	Plek
10 Okt 2016; 15h00	Siesta Gastehuis, Plaas Merrydale, R26 Reitzpad, 12 km van Frankfort
11 Okt 2016; 09h00	Standerton Gholfklub, Peter Bailey Boulevard, Standerton
11 Okt 2016; 15h00	NG Kerkzaal, Jan Penstraat, Cornelia
12 Okt 2016; 09h00	Vrede Hotel, Kerkstraat, Vrede



**Aanhangsel A:**

**Lys van eiendomme in die Eksploasieregebied**

Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
ALICE	796	0 (RE)	F03700000000079600000
ALEEN	1129	0	F037000000000112900000
ALPHA	774	0	F03700000000077400000
ALPHA	1099	0	F037000000000109900000
AMASGIFT	821	0 (RE)	F03700000000082100000
AMASIROOS	1170	0	F037000000000117000000
AMINSADALE	865	0	F03700000000086500000
AMINSDEEL	883	0 (RE)	F03700000000088300000
ANTONIE'S RUST	1029	0	F037000000000102900000
ARINDELA	123	0	F03700000000012300000
ASCENT	79	0	F03700000000007900000
ASCENT A	906	0	F03700000000090600000
ASCENT SCHOOL GROOND	817	0	F03700000000081700000
BALLAST PIT	87	0	F03700000000008700000
BALLAST PIT	103	0	F03700000000010300000
BALTIMORE	85	0 (RE)	F03700000000008500000
BAANKRAAL	799	0	F03700000000079900000
BARINDINA	568	0 (RE)	F03700000000056800000
BEGINSEL	1073	0	F037000000000107300000
BEGINSEL	1115	0	F0370000000011500000
BELLEWUE	1158	0	F03700000000115800000
BERLIN	882	0 (RE)	F03700000000088200000
BEYERS	725	0 (RE)	F03700000000072500000
BLOEMHOEF	390	0	F03700000000039000000
BLOEMHOEF	488	0	F03700000000048800000
BLOEMHOEF	1130	0	F037000000000113000000
BLOEMHOEF	1318	0 (RE)	F037000000000131800000
BLOEMVELD	316	0	F03700000000031600000
BLUEGEMOESH	405	0	F03700000000040500000
BLUDE VOORUITZICHT	727	0	F037000000000727000000

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Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
BLDYSGHAP	907	0	F03700000000090700000
BLDYSKAP	1035	0	F037000000000103500000
BOOMPE ALEEN	1357	0	F03700000000135700000
BOOMPE ALEEN	1388	0	F03700000000138800000
BOSCHIES PLAAT	329	0	F03700000000032900000
BOSHOEF-FRUST	118	0	F037000000000118000000
BOTHA	125	0 (RE)	F037000000000125000000
BOTHASRUST	547	0 (RE)	F037000000000547000000
BOVENTOP	1055	0	F03700000000105500000
BRAKDAM	1080	0	F03700000000108000000
BRAKFONTEIN	422	0	F037000000000422000000
BRAKHOEK	749	0 (RE)	F037000000000749000000
BRAKVLEI	423	0	F037000000000423000000
BREGESVILLE	820	0 (RE)	F037000000000820000000
BREYTERBACH	90	0	F037000000000090000000
BUL T FONTEIN	392	0	F037000000000392000000
BURHAM	962	0 (RE)	F037000000000962000000
BURNGA	791	0	F037000000000791000000
CERES	284	0 (RE)	F037000000000284000000
CHARLES HOPE	282	0	F037000000000282000000
CHRISTIANA	872	0	F037000000000872000000
CLOCOLAN	1	0 (RE)	F037000000000001000000
CLOVEFELD	563	0 (RE)	F037000000000563000000
COENRADINA	459	0 (RE)	F037000000000459000000
CONCORDIA	908	0	F037000000000908000000
CONSOLATION	337	0 (RE)	F037000000000337000000
CORNELIA	857	0 (RE)	F037000000000857000000
DAEFKAD	1342	0	F037000000001342000000
DAM	104	0	F037000000000104000000
DANIEL SRUST	993	0	F037000000000993000000

**Aanhangsel A:**

**Lys van eiendomme in die Eksploasieregebied**

Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
MEALIELAND	889	0	F014000000000889000000
MIDDELSPRUIT	665	0 (RE)	F014000000000665000000
MIMME	781	0	F014000000000781000000
MIMMIES DEEL	972	0 (RE)	F014000000000972000000
MCOODAM	170	0	F014000000000170000000
MCOONWATER	683	0	F014000000000683000000
MULTJAL	1104	0	F0140000000001104000000
MUTUAL A	1105	0	F0140000000001105000000
MAALWPOORT	179	0	F014000000000179000000
MAPER	461	0	F014000000000461000000
NIEMAOSKRRAAL	178	0 (RE)	F014000000000178000000
NIEMEYERS RHU	95	0 (RE)	F014000000000095000000
NOOITGEBOAGHT	1111	0	F0140000000001111000000
ONGEGJUND	973	0 (RE)	F014000000000973000000
PARADEINONTJEN	906	0	F014000000000906000000
PARADYS	1115	0	F014000000000115000000
PERTH	94	0	F014000000000094000000
PERTRUSHOFF	1110	0	F014000000000110000000
PHILIPS PAN	1294	0 (RE)	F0140000000001294000000
PUNTJE	123	0	F014000000000123000000
PVSTJEEI	281	0 (RE)	F014000000000281000000
RAMA	1096	0	F014000000000109600000
RAUTENBACH'S RUST	924	0	F014000000000924000000
RANNWYEDDE	197	0	F014000000000197000000
RUSTIG	1109	0	F014000000000110900000
SAHALI	1436	0	F014000000000143600000
SCHAPENRUST	534	0	F014000000000534000000
SCHRYVERSPOST	98	0	F014000000000098000000
SITWA	477	0	F014000000000477000000
SMALDEEL	210	0	F014000000000210000000

Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
SOPHIE'S DEEL	1295	3	F014000000001295000003
SPE'S BONA	903	0	F014000000000903000000
SPITZKOP	289	0	F014000000000289000000
SPITZKOK	290	0	F014000000000290000000
SISANAMA	483	0	F014000000000483000000
SWINEVUENDE	780	0	F014000000000780000000
TABOSCHSPRUIT	217	1	F014000000000217000001
TEKWANI	925	0 (RE)	F014000000000925000000
TEIPE	99	0	F014000000000099000000
UITKOMS	1149	0	F0140000000001149000000
UITZOEK	223	0 (RE)	F014000000000223000000
VIAKPLAATS	499	0	F014000000000499000000
VOORSPOED	1442	0	F0140000000001442000000
VOORUITZICHT	804	0	F014000000000804000000
WELBEDACHT	1009	0	F014000000000100900000
WELGEGJUND	241	0 (RE)	F014000000000241000000
WELGELUK	676	0	F014000000000676000000
WELGELUK	1231	0 (RE)	F014000000001231000000
WELKOM	901	0 (RE)	F014000000000901000000
WILGEWERSPRUIT	86	0	F014000000000086000000
WITRAND	504	0	F014000000000504000000
WONDERVAL	1082	0 (RE)	F0140000000001082000000
ZAKLAND	645	0	F014000000000645000000
ZAKPLAATS	876	0	F014000000000876000000
ZATELOW	516	0	F014000000000516000000
ZWAARHOEK	599	0	F014000000000599000000
<b>Registrasie Afdeling: HS</b>			
GOEDGEBOAGHT	38	1	TOHS00000000003800001
GOEJONGVONDEN	5	0	TOHS00000000000500000
KAFFEBSKRAAL	47	0	TOHS00000000004700000

Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
KROONDRRAI	39	1	TOHS00000000003900001
KROONDRRAI	258	0	TOHS0000000000258000000
LEEUWVUL	27	1	TOHS0000000000270000001
MISPAH	4	0 (RE)	TOHS00000000000400000
PIETER-FRANCIS	1	0 (RE)	TOHS000000000001000000
POORTJE	6	0 (RE)	TOHS00000000000600000
POITBERG	30	1	TOHS00000000003000001
RIETWEL	33	1	TOHS00000000003300001
RUITERSKUIL	25	12	TOHS000000000025000012
SPAN DE KROON	29	0 (RE)	TOHS00000000002900000
STERKONTJEN	34	0	TOHS00000000003400000
VAAURWERSDRIFT	2	0 (RE)	TOHS00000000000200000
VERGENOEG	31	0 (RE)	TOHS000000000031000000
VOGELSTRIJLSPORT	36	0 (RE)	TOHS00000000003600000
WINKELHAAK	46	1	TOHS00000000004600001
ZWAARTKOPJES	3	1	TOHS00000000000300001
<b>Registrasie Afdeling: Vrede Rd</b>			
AANDENKING	514	0	F037000000000514000000
AANSLUIT	863	0 (RE)	F037000000000863000000
AANSLUITING	736	0	F037000000000736000000
AANTEL	798	0 (RE)	F037000000000798000000
AANVANG	1268	1	F037000000000126800001
ABERDENEN	1214	0	F037000000000121400000
ACTION HOMES	649	0 (RE)	F037000000000649000000
AFGINSDDAM	1121	0	F037000000000112100000
AFGUNST	19	0 (RE)	F037000000000019000000
ACRACOLA	1278	0	F037000000000127800000
ALBANIJE	948	0	F037000000000948000000
ALBION	311	0 (RE)	F037000000000311000000
ALETTA	475	1	F037000000000475000001

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**Aanhangsel A: Lys van eiendomme in die Eksploasiereggebied**

Plaasnaam	Plaas No.	Gedeelte No.	LP Kode
KALABAS FONTein	303	0	F0370000000030300000
KAMP	76	0	F0370000000007600000
KATMASRUS	1176	0	F03700000000117600000
KEDRON	764	0	F03700000000076400000
KERWIEDER	961	0	F03700000000096100000
KENTON	309	0	F03700000000030900000
KIRO	844	0	F03700000000084400000
KILFOLIS	1321	0 (RE)	F03700000000132100000
KINDERDEEL	1084	0	F03700000000108400000
KINGTON	870	0	F03700000000087000000
KISMEI	1139	0 (RE)	F03700000000113900000
KLAVER VLEY	285	0 (RE)	F03700000000028500000
KLEIN BEGIN	900	0	F0370000000009000000
KLEIN BEGIN	1242	0	F03700000000124200000
KLEIN BRAK	135	0	F03700000000013500000
KLEIN GENOEG	866	0	F03700000000086600000
KLEIN PARADYS	352	0	F03700000000035200000
KLEINDEEL	1038	0	F03700000000103800000
KLEINDBAAL	1202	0	F03700000000120200000
KLEINFONTein	431	0 (RE)	F037000000000431000000
KLIP VONTein	354	0 (RE)	F037000000000354000000
KLIPONTein	23	0	F037000000000023000000
KLIPONTein	1080	0 (RE)	F037000000001080000000
KLIPKOP JE	1135	0	F0370000000001135000000
KLIPRAND	754	0	F037000000000754000000
KOPPE ALLEEN	347	0	F037000000000347000000
KOPPE EEN	84	0	F037000000000084000000
KORR FONTein	1127	0 (RE)	F037000000001127000000
KROONDBAAL	91	0 (RE)	F037000000000091000000
KROONWAI	751	0 (RE)	F037000000000751000000

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Plaasnaam	Plaas No.	Gedeelte No.	LP Kode
KIARTEL VLEY	355	0 (RE)	F037000000000355000000
LA ROCHELLE	850	0	F037000000000850000000
LANDSKROON	290	0	F037000000000290000000
LANG EN SMAAL	924	0	F037000000000924000000
LANGDBAAL	574	0 (RE)	F037000000000574000000
LANGDRBAAL	1192	0	F037000000001192000000
LANGKUL	1093	0	F037000000001093000000
LANGSRUIT	752	0	F037000000000752000000
LANGSRUIT	1037	0	F037000000001037000000
LANGVERWACHT	576	0	F037000000000576000000
LANGVERWACHT	1272	1	F037000000001272000001
LEBANON	1053	0 (RE)	F037000000001053000000
LEEUW KOP	287	0	F037000000000287000000
LEEUW SPRUIT	328	0	F037000000000328000000
LEEUWPOORT	1120	0 (RE)	F037000000001120000000
LEDING	602	0	F037000000000602000000
LEVENSBRON	1076	0	F037000000001076000000
LEFEGEKOZEN	1399	0	F037000000001399000000
LOMBARD	1365	0	F037000000001365000000
LORRAINE	963	0	F037000000000963000000
LOSKOP	1020	0	F037000000001020000000
LOURENTIA	395	0 (RE)	F037000000000395000000
LOURENTIA	1051	0	F0370000000010510000000
LOUWRENS RUST	315	0 (RE)	F037000000000315000000
MANDSTONE	297	0 (RE)	F037000000000297000000
MANASKRAAL	1180	0	F037000000001180000000
MALEFA	129	0	F037000000000129000000
MAALTA	1066	1 (RE)	F037000000001066000001
MAABAALDOF	1074	0	F037000000001074000000
MARA	302	0 (RE)	F037000000000302000000

**Aanhangsel A: Lys van eiendomme in die Eksploasiereggebied**

Plaasnaam	Plaas No.	Gedeelte No.	LP Kode
EENSGEVONTEN	1203	0	F037000000001203000000
EENSGEVONTEN	1297	0 (RE)	F0370000000012970000000
EKENHOF	1243	0	F037000000001243000000
EL-BETHEL	1271	0	F037000000001271000000
ELDORADO	740	0	F037000000000740000000
ELDORADO	1117	0	F037000000000117000000
ELIM	926	0	F037000000000926000000
EMBRENSIA	697	0 (RE)	F037000000000697000000
EMMERENTIA	14	0	F037000000000014000000
EMMERENTIA	531	1	F037000000000531000001
EMERGY	50	0	F037000000000050000000
ERHDEEL	994	0	F037000000000994000000
ERHDEEL	1107	0 (RE)	F0370000000011070000000
ERHDEEL	1113	0	F037000000001130000000
ERHDEEL	1162	0	F0370000000011620000000
ERHDEEL	1335	0 (RE)	F037000000001335000000
ERENIS	998	0	F037000000000998000000
ERGERNIS SPRUIT	433	0	F037000000000433000000
EVENWVD	138	0	F0370000000001380000000
FAIRPLAY	279	0	F037000000000279000000
FRAAI UITZICHT	121	0	F037000000000121000000
FRANKS RUST	810	0	F037000000000810000000
GANGERS COTTAGE	88	0	F037000000000088000000
GEDUIDSKRAAL	289	0	F037000000000289000000
GEDULD	1313	0	F037000000001313000000
GELUK	325	0	F037000000000325000000
GELUKSDEEL	484	0 (RE)	F037000000000484000000
GELUKSKOPPE	1125	0 (RE)	F037000000001125000000
GENOEG	597	0 (RE)	F037000000000597000000
GERT BROERS RUST	860	0	F037000000000860000000

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Plaasnaam	Plaas No.	Gedeelte No.	LP Kode
GERIESEGROVE	819	0	F037000000000819000000
GESCHENK	622	0 (RE)	F037000000000622000000
GESLAAGD	1005	0	F037000000001005000000
GEWAG	1184	0 (RE)	F037000000001184000000
GOEDGEACHT	312	0	F037000000000312000000
GOEDGEWEG	590	0	F037000000000590000000
GOEDGEWONDEN	1071	0	F037000000001071000000
GOEDIED	306	0 (RE)	F037000000000306000000
GOOD HOPE	603	0	F037000000000603000000
GOOD LUCK	518	0	F037000000000518000000
GOODLAND	701	0	F037000000000701000000
GORON	1085	0 (RE)	F037000000001085000000
GRAS PLEATS	344	0	F037000000000344000000
GRASVLAAS	583	0	F037000000000583000000
GREENVILLE	343	0	F037000000000343000000
GROOT GELUK	1244	0	F037000000001244000000
GROOTVLEI	51	0	F037000000000051000000
GROOVTWEI	326	0 (RE)	F037000000000326000000
GRUJSPALMS	336	0 (RE)	F037000000000336000000
GULTLAND	578	0	F037000000000578000000
HANNESDEEL	899	0	F037000000000899000000
HANNONER	581	0	F037000000000581000000
HARPY DALE	25	0 (RE)	F037000000000025000000
HARAN	753	0	F037000000000753000000
HARTEBEEFONTein	324	0	F037000000000324000000
HARTINGH	429	0	F037000000000429000000
HEBRON	1199	0	F037000000001199000000
HELELTEREDEN	485	0 (RE)	F037000000000485000000
HELELTEREDEN	601	0	F037000000000601000000
HELDERFONTein	70	0	F037000000000070000000

Plaasnaam	Plaas No.	Gedeelte No.	LP Kode
HELDERSKROON	1159	0 (RE)	F037000000001159000000
HELENA	98	0	F037000000000098000000
HELENA	1105	0	F0370000000011050000000
HELENA	1036	0	F037000000001036000000
HENDRIKA	793	0 (RE)	F037000000000793000000
HENNIS DEEL	797	0	F037000000000797000000
HERINNERING	1089	0	F037000000001089000000
HESTER	1006	0 (RE)	F037000000001006000000
HESTERDEEL	792	0	F037000000000792000000
HE TIE SPAL	599	0	F037000000000599000000
HOEKPAN	730	0 (RE)	F037000000000730000000
HOEGERBULT	1204	0 (RE)	F037000000001204000000
HOOGEGELGEN	964	0	F037000000000964000000
HOUD MOED	748	0	F037000000000748000000
HURTERS RUST	1134	0	F037000000001134000000
INLOOP	836	0	F037000000000836000000
IZAKSDEEL	823	0 (RE)	F037000000000823000000
JAAPE	987	0	F037000000000987000000
JAAPESDAL	480	0 (RE)	F037000000000480000000
JACKALS KOP	502	0	F037000000000502000000
JACOBASDEEL	912	0	F037000000000912000000
JACOBUSDAAL	744	1	F037000000000744000001
JACOBUSDEEL	1081	0	F037000000001081000000
JAKHALSRAND	985	0	F037000000000985000000
JOESMARS RUST	520	0	F037000000000520000000
JOHANNA	763	0	F037000000000763000000
JUDITHS LAAGTE	816	0	F037000000000816000000
JUKSKY	470	0	F037000000000470000000
JUSTITIE	729	0	F037000000000729000000
KAALFONTein	351	0 (RE)	F037000000000351000000

**Aanhangsel A:**

**Lys van eiendomme in die Eksploasieregebied**

Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
SWARTVAAL	1118	0	F0370000000011800000
SYFERFONTEIN A	1014	0	F03700000000101400000
SYFERFONTEIN B	1015	0	F03700000000101500000
SYFERPOORT	203	1	F0370000000020300001
TERRA	385	0 (RE)	F03700000000038500000
TERREDE	456	0	F03700000000045600000
TERREDEEN	1072	0	F03700000000107200000
THE WILLOWS	1221	0	F03700000000122100000
THEODORUS HOOP	765	0 (RE)	F03700000000076500000
THOMAS VLEI	132	0 (RE)	F03700000000013200000
THYSRUST	1090	0	F03700000000109000000
TOGWAT	1128	0	F03700000000112800000
TRADOUW	1241	0	F03700000000124100000
TWEEFONTEIN	137	0	F03700000000013700000
TWEEFONTEIN	335	0 (RE)	F03700000000033500000
TWEE SPRUIT	1173	0	F03700000000117300000
TWISHOEK	1079	0	F03700000000107900000
UIJSRUST	992	1	F03700000000099200001
UIJKOMST	955	0	F03700000000095500000
UIJKYK	20	0	F03700000000002000000
UIJKYK	414	0	F03700000000041400000
UIJKYK	880	0	F0370000000008800000
UIJSRUIT	594	0	F03700000000059400000
UIZICHT	313	0	F03700000000031300000
UIZIEEN	401	1	F03700000000040100001
UITZOEK	133	0 (RE)	F03700000000013300000
VAALBANK	482	0 (RE)	F03700000000048200000
VAALKOP	747	0 (RE)	F03700000000074700000
VAALSPRUIT	598	0	F03700000000059800000
VADERS GIJFT	1091	0	F037000000000109100000

SLR Consulting (South Africa) (Edms) Bpk

Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
VAN AARDT'S DRAM	323	0	F03700000000032300000
VAN WILKS PAN	748	0 (RE)	F03700000000074800000
VARENS VLEI SIDING	86	0	F03700000000008600000
VARENSVLEI	327	0 (RE)	F03700000000032700000
VASTRAP	608	0	F03700000000060800000
VENTERSHOEK	519	0	F03700000000051900000
VENTERSKROON	772	0 (RE)	F03700000000077200000
VERGENOEG	910	0 (RE)	F03700000000091000000
VERHOOG	911	0	F03700000000091100000
VIERTONTEIN	486	0	F03700000000048600000
VLAK NEK	339	0	F03700000000033900000
VREDEBOND	1175	0	F03700000000117500000
WAG N BLET JIE	1200	0	F03700000000120000000
WABERSRUST	718	0	F03700000000071800000
WATERLOOP	596	0	F03700000000059600000
WATERSTROM	631	0	F03700000000063100000
WELGEDAAN	569	0 (RE)	F03700000000056900000
WELGEGOND	1022	0	F03700000000102200000
WELGELEGEN	53	0 (RE)	F03700000000005300000
WELGERUS	1296	0	F03700000000129600000
WELKOM	1119	0	F03700000000111900000
WELSTAND	404	0 (RE)	F03700000000040400000
WELTEVREDE	1160	0	F03700000000116000000
WELTEVREDE	89	0 (RE)	F03700000000008900000
WELTEVREDE	549	0 (RE)	F03700000000054900000
WELTEVREDE	901	0	F03700000000090100000
WELTEVREDE	988	0	F03700000000098800000
WELVERDIEND	371	0	F03700000000037100000
WELVERDIEND	1169	0	F03700000000116900000
WESSELS RUST	349	0 (RE)	F03700000000034900000

Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
WILGELEI	824	0 (RE)	F03700000000082400000
WILHELMINA	9	0	F03700000000000900000
WILHELMINA	424	0 (RE)	F03700000000042400000
WITBANK	560	0	F03700000000056000000
WONDERFONTEIN	875	0	F03700000000087500000
ZAHOEK	889	0	F03700000000088900000
ZAARVAMP	595	0	F03700000000059500000
ZAMENKOMST	386	0 (RE)	F03700000000038600000
ZAMENKOMST	400	0	F03700000000040000000
ZOELEBRON	151	0	F03700000000015100000
ZONDERMATER	575	0	F03700000000057500000
ZUKERVLEI	278	0	F03700000000027800000
ZURBURG BANK	562	0 (RE)	F03700000000056200000
ZURBURGBANK A	1083	0	F03700000000108300000
ZWAARHOEK	657	0	F03700000000065700000
ZWAARTBANK	281	0	F03700000000028100000
ZWAARTFONTEIN	150	0	F03700000000015000000
ZWAARTKRANS	745	0 (RE)	F03700000000074500000
ZWAARTLAAGTE	600	0 (RE)	F03700000000060000000
-	77	0	F03700000000007700000

**Aanhangsel A:**

**Lys van eiendomme in die Eksploasieregebied**

Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
MOONVLEI	984	0	F03700000000098400000
MOREESON	1078	0	F03700000000107800000
MOUNT MARIA	868	0	F03700000000086800000
MAALWPOORT	291	0	F03700000000029100000
MAZARETH	750	0	F03700000000075000000
MEMO	843	0 (RE)	F03700000000084300000
NEVADA	943	0	F03700000000094300000
NEVADA A	940	0	F03700000000094000000
NIEUWE WONING	1145	0	F03700000000114500000
NONNENSBLIT	859	0	F03700000000085900000
NOOITGEDACHT	958	0 (RE)	F03700000000095800000
NOOITGEDACHT	1092	0	F03700000000109200000
NOOITVERWACHT	372	0	F037000000000372000000
OMEGA	113	0	F037000000000113000000
ONRUST	1007	0	F037000000000100700000
ONS RUS	1019	0	F03700000000101900000
ONVERWACHT	790	0	F03700000000079000000
ONVERVAG	739	0	F03700000000073900000
ORANJE FONTEIN	353	0	F03700000000035300000
OREBEE LEEGTE	308	0	F03700000000030800000
ORIBIE FONTEIN	210	0	F03700000000021000000
ORIBIEKRAL	897	0	F037000000000897000000
PAARDEN VLEI	345	0	F03700000000034500000
PAARDENKOP	1349	0	F037000000000134900000
PADJANGS	441	0 (RE)	F03700000000044100000
PAMPOENKRAL	314	0 (RE)	F03700000000031400000
PANDAM	716	0 (RE)	F03700000000071600000
PARK	775	0	F03700000000077500000
PATRSYSHOEK	986	0	F03700000000098600000
PAULS DEEL	771	0 (RE)	F03700000000077100000

SLR Consulting (South Africa) (Edms) Bpk

Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
PELGRIJSRUIS	437	0 (RE)	F037000000000437000000
PETRUSRUST	479	0	F03700000000047900000
PHILIESEDEEL	348	0	F03700000000034800000
PIENMAAS VLEI	461	0 (RE)	F03700000000046100000
PIETERSDEEL	884	0	F03700000000088400000
PLAT VLEI	276	0	F03700000000027600000
PLATRANO	130	0	F03700000000013000000
PLATRANO	743	1	F03700000000074300001
PRIMROSE	99	0	F03700000000009900000
PRINSHOF	384	0	F03700000000038400000
PROSPECT	299	0 (RE)	F03700000000029900000
PRUMME	767	0	F03700000000076700000
QUAGGA NEK	483	0 (RE)	F03700000000048300000
QUADVADS	1138	0 (RE)	F03700000000113800000
RANDNOR	417	1	F03700000000041700001
RANDNORDEEL	1397	0	F03700000000139700000
RAND FONTEIN	529	0	F03700000000052900000
REMEMBER	1082	0	F03700000000108200000
RIET FONTEIN	288	1	F03700000000028800001
RIET FONTEIN	720	0	F03700000000072000000
RISHON	383	0 (RE)	F03700000000038300000
ROBBERTS DRIFT	322	0 (RE)	F03700000000032200000
ROELOFS DEEL	97	0 (RE)	F03700000000009700000
RONDERBULT	956	0	F03700000000095600000
RONDERKOP	593	0	F03700000000059300000
ROUDE KRANS	310	0 (RE)	F03700000000031000000
ROODEPOORT	350	0 (RE)	F03700000000035000000
ROSENDAAL	949	0	F03700000000094900000
ROTTERDAM	746	0 (RE)	F03700000000074600000
ROZENDAL	1100	0 (RE)	F03700000000110000000

Plaasnaam	Plaas No.	Gedeelte No.	LF Kode
RUSTHOF	1270	0	F03700000000127000000
S.J.	1315	0	F03700000000131500000
SAALPAAKS	54	0 (RE)	F03700000000005400000
SAALSRUST	642	0	F03700000000064200000
SAXONY	26	0 (RE)	F03700000000002600000
SCHAARBULT	726	0	F03700000000072600000
SCHOONDRAMA	724	0 (RE)	F03700000000072400000
SCHOONHEID	62	0	F03700000000006200000
SCHULDSPRUIT	24	0	F03700000000002400000
SEVEN OAKS	1222	0 (RE)	F03700000000122200000
SLANGFONTEIN	318	0 (RE)	F03700000000031800000
SLANGRIVER	296	0	F03700000000029600000
SMALDEEL	136	0	F03700000000013600000
SMALDEEL	719	0	F03700000000071900000
SMALDEEL	1306	0	F03700000000130600000
SMALPUNT	989	0	F03700000000098900000
SMALPUNT	1337	0	F03700000000133700000
SOPHIA'S GUNST	687	0	F03700000000068700000
SORGVLEI A	1311	0	F03700000000131100000
SPE'S BONA	415	0 (RE)	F03700000000041500000
SPTSHOEK	913	0	F03700000000091300000
SPRINGBOKLAAGTE	387	0 (RE)	F03700000000038700000
STERKFONTEIN	396	0	F03700000000039600000
STERKFONTEIN	1114	0	F03700000000111400000
STERNSRUST	191	0	F03700000000019100000
STRUDFONTEIN	477	0	F03700000000047700000
STURBAMAASDRIFT	1239	0	F03700000000123900000
SUKSES	1198	0	F03700000000119800000
SUSANNA'S DEEL	742	0	F03700000000074200000
SUSSEI'DEEL	991	0	F03700000000099100000

**BID Distribution Proof in Towns**



**AFRO ENERGY (PTY) LTD**

**APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM ON  
VARIOUS FARMS IN MPUMALANGA AND FREE STATE  
SEPTEMBER 2016**

FILE REFERENCE NUMBER: 12/3/320ER

This is to certify that I

*Eunice Delport*

in my capacity as a representative of

*VKB Frankfurt*

have received the following documents:

PLEASE COMPLETE AND TICK RELEVANT BOX

<u>  5  </u> hard copies of the background information document in Afrikaans.	X
<u>  5  </u> hard copies of the background information document in English.	X

Date: *2016/9/21*

Signature/ Stamp: *[Signature]*

**AFRO ENERGY (PTY) LTD**

**APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM ON  
VARIOUS FARMS IN MPUMALANGA AND FREE STATE  
SEPTEMBER 2016**

FILE REFERENCE NUMBER: 12/3/320ER

This is to certify that I

Erna Beyers

in my capacity as a representative of

V.B. Cornelis

have received the following documents:

**PLEASE COMPLETE AND TICK RELEVANT BOX**

<u>5</u> hard copies of the background information document in Afrikaans.	<input checked="" type="checkbox"/>
<u>5</u> hard copies of the background information document in English.	<input checked="" type="checkbox"/>

Date: 21/09/2016

[Signature]  
Signature/ Stamp:

**AFRO ENERGY (PTY) LTD**

**APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM ON  
VARIOUS FARMS IN MPUMALANGA AND FREE STATE  
SEPTEMBER 2016**

FILE REFERENCE NUMBER: 12/3/320ER

This is to certify that I

*C. Pieterse*  
.....

in my capacity as a representative of

*Vkb Vrrede*  
.....

have received the following documents:

**PLEASE COMPLETE AND TICK RELEVANT BOX**

<u>5</u> hard copies of the background information document in Afrikaans.	<input checked="" type="checkbox"/>
<u>5</u> hard copies of the background information document in English.	<input checked="" type="checkbox"/>

Date: *21/9/2016*

Signature/ Stamp: 

AFRO ENERGY (PTY) LTD

APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM ON  
VARIOUS FARMS IN MPUMALANGA AND FREE STATE  
SEPTEMBER 2016

FILE REFERENCE NUMBER: 12/3/320ER

This is to certify that I



*Thys de Beer*

in my capacity as a representative of

*Hinterland Standerfontein*

have received the following documents:


PLEASE COMPLETE AND TICK RELEVANT BOX

<u>5</u> hard copies of the background information document in Afrikaans.	
<u>5</u> hard copies of the background information document in English.	

Date:.....

*22/9/2016*

Signature/ Stamp:



## **Proof of Email Distribution**

AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE

Message

From: Edwynn Louw  
 To: Edwynn Louw  
 Cc: ngesp@petroleumagency.co.za; lthumaloti@petroleumagency.co.za; lmatshusa@geoscience.org.za; bhuhise@geoscience.org.za; mining@mr.co.za; plohnner@mr.co.za; info@wesco.co.za; umgervale@wesco.co.za; Dominic.Wieners@kzwildlife.com; franskrige@telkomsa.net; shunbela@khuvhah@gmail.com; advocacy@brdiffe.org.za; egyptproject@web.co.za; vstone@wvrf.org.za; bradley@brt.org.za; vanthienkum@wolkfreesa.org.za; juliaand@wolkfreesa.org.za; nia@wolkfreesa.org.za; jessica@wolkfreesa.org.za; jessica@wolkfreesa.org.za; mwebster@pca.org.za; d.zeeberg@leco.co.za; MaryLou@co.za; botay@vva.co.za; miamob@vva.co.za; vaalmanne@telkomsa.net; sudh@earthlife.org.za; gpooley@icta.co.za; sheward@p@mpumalanga.co.za

Subject: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES

Message: Afro Energy 320 - BID English FINAL (19 Sept 2016).pdf (1 MB)

722.01083.00003

Project Reference: SL

File Ref: 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH

20 September 2016

**ATTENTION: LANDOWNER/STAKEHOLDER**

**AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)**

This letter provides formal notification that Afro Energy (Pty) Ltd (Afro Energy) has lodged an application for an **Exploration Right (ER)** to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa (PASA) in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA).

See more about: Edwynn Louw.

AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE

Message

From: Edwynn Louw  
 To: Edwynn Louw  
 Cc: luntakus@kno.ams.co.za; beodisa@bentel.net; lums@ba.co.za; rfaite@web.co.za; robetlimp@web.co.za; hlayih@ab.co.za; dlela@ura@gmail.com; ehet@twanaki.co.za; gustav.monaco@divendgroup.co.za; mevryn.lister@gmail.com; nichooster@repa.co.za; info@mba.co.za; gisitho@supergroup.com; omworts@hotmail.com; balaberole2001@shaw.co.uk; wvillers@kentic.net; jeyrene@voinet.co.za; jaybee@ntelkom.co.za; vanoooyl@cybertrade.co.za; carm@vryerstate.co.za; franco@seebordko.co.za; lly@kumba.co.za; jyerl@voinet.co.za; gculber@voinet.co.za; gpra123@hotmail.com; casper@tfs.ac.za; vanasok@ntelkom.co.za; Randicorp@vwebmail.co.za; boomplab@yaho.com; pouz@entloaded.co.za; jannic@farmvisie.co.za; pietervh@vodemail.co.za

Subject: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES

Message: Afro Energy 320 - BID English FINAL (19 Sept 2016).pdf (1 MB)

722.01083.00003

Project Reference: SL

File Ref: 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH

20 September 2016

**ATTENTION: LANDOWNER/STAKEHOLDER**

**AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)**

This letter provides formal notification that Afro Energy (Pty) Ltd (Afro Energy) has lodged an application for an **Exploration Right (ER)** to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa (PASA) in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA).

See more about: Edwynn Louw.



AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE

Message

From: Edwynn Louw  
 To: Edwynn Louw  
 Sent: Fri 23/09/2016 10:23 AM

722.01083.00003

Project Reference:  
 File Ref: 2015-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH  
 20 September 2016

**ATTENTION: LANDOWNER/STAKEHOLDER**

**AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)**

This letter provides formal notification that Afro Energy (Pty) Ltd (Afro Energy) has lodged an application for an **Exploration Right (ER)** to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa (PASA) in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA).

See more about: Edwynn Louw.

AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE

Message

You made changes to another copy of this item. This is the most recent version. Click here to see the other versions.

From: Edwynn Louw  
 To: Edwynn Louw  
 Sent: Wed 28/09/2016 01:21 PM

722.01083.00003

Project Reference:  
 File Ref: 2015-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH  
 28 September 2016

**ATTENTION: LANDOWNER/STAKEHOLDER**

**AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)**

This letter provides formal notification that Afro Energy (Pty) Ltd (Afro Energy) has lodged an application for an **Exploration Right (ER)** to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa (PASA) in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA).

See more about: Edwynn Louw.

AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE...

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You made changes to another copy of this item. This is the most recent version. Click here to see the other version.

From: Irvaan Banderker  
 To: Albe Swart  
 Cc: Jeremy Blood; Edwynn Louw  
 Subject: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES

Sent: Wed 05/10/2016 09:51 PM

Message: Afro Energy 320 - BID English FINAL (19 Sept 2016).pdf (1 MB)

722.01083.00003

Project Reference:  
 File Ref: 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH

5 October 2016

**ATTENTION: ALBE SWART**

**AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)**

This letter provides formal notification that Afro Energy (Pty) Ltd (Afro Energy) has lodged an application for an **Exploration Right (ER)** to explore for 'Petroleum and Gas' with the Petroleum Agency of South Africa (PASA) in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA).

The application is for undertaking early-phase petroleum exploration, which is aimed at determining the presence of Coal Bed Methane (CBM) gas resources that could warrant further exploration. The initial exploration work programme would be restricted to an aeromagnetic survey and drilling of up to five stratigraphic core boreholes. Based on Afro Energy's existing ER in the Amersfoort area and its success of extracting commercial rates of gas from unstimulated test boreholes in the Amersfoort area, hydraulic fracturing will not at any time be considered as an activity for this project.

See more about: Irvaan Banderker.

AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE...

Message

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You forwarded this message on 25/10/2016 09:33 AM.

From: Edwynn Louw  
 To: Mela Janjie@transnet.net; maandri@transnet.net; Sphamandla Sibaya@transnet.net; Malinda alshamirah@transnet.net  
 Subject: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES

Sent: Tue 25/10/2016 09:27 AM

Message: Afro Energy 321 ER - BID English FINAL (19 Sept 2016).pdf (1 MB); 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH.pdf (185 KB)

Gnod day Transnet Stakeholders,

Please see attached background information documents (BID) for two exploration right applications taking place in Free State/Mpumalanga and KZN/Mpumalanga respectively.

Please be advised that You have been registered as stakeholders for Transnet. Please advise should additional representatives of Transnet be included in the stakeholder database? I believe Transnet pipelines should also be involved. Please be so kind as to direct me to the correct Transnet Pipelines representatives for the respective regions?

Should you have queries please feel free to contact us as the Environmental Assessment Practitioners conducting the EIA process on behalf of Afro Energy.

Kind regards,

See more about: Edwynn Louw.



AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE

Message

From: Edwynn Louw  
 To: masind.abod@transnet.net  
 Cc:  
 Subject: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES

Sent: Tue 26/10/2016 09:34 AM

Message: Afro Energy 321 ER - BID English FINAL (19 Sept 2016).pdf (1 MB) 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH.pdf (185 KB)

Good day Transnet Stakeholders,

Please see attached background information documents (BID) for two exploration right applications taking place in Free State/Mpumalanga and KZN/Mpumalanga respectively.

Please be advised that you have been registered as stakeholders for Transnet. Please advise should additional representatives of Transnet be included in the stakeholder database? I believe Transnet pipelines should also be involved. Please be so kind as to direct me to the correct Transnet Pipelines representatives for the respective regions?

Should you have queries please feel free to contact us as the Environmental Assessment Practitioners conducting the EIA process on behalf of Afro Energy.

Kind regards,

See more about: Edwynn Louw.

AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE

Message

From: Invaan Banderker  
 To: phrim@eskom.co.za  
 Cc: Jeremy Blood  
 Subject: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES

Sent: Mon 03/10/2016 04:19 PM

Message: Afro Energy 320 - BID English FINAL (19 Sept 2016).pdf (1 MB)

722 01083.00003

Project Ref: 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA E

3 October

**ATTENTION: MS PHIRI**

**AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)**

This E-mail provides formal notification that Afro Energy (Pty) Ltd (Afro Energy) has lodged an application for an **Exploration Right (ER)** to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa (PASA) in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA).

The application is for undertaking early-phase petroleum exploration, which is aimed at determining the presence of Coal Bed Methane (CBM) gas resources that could warrant further exploration. The initial exploration work programme would be restricted to an aeromagnetic survey and drilling of up to five stratigraphic core boreholes. Based on Afro Energy's existing ER in the Amersfoort area and its success of extracting commercial rates of gas from unstimulated test boreholes in the Amersfoort area, hydraulic fracturing will **not** at any time be considered as an activity for this project.

Afro Energy is also required to make an application for **Environmental Authorisation** for the proposed exploration activities in terms of Chapter 5 of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA). In terms of the EIA Regulations 2014, the application for Environmental Authorisation must be subject to a Scoping and Environmental Impact Assessment (EIA) process.

See more about: Invaan Banderker.

## **Proof of Letter Distribution**

BAREND DU PLESSIS BESTER  
POSBUS 177  
VREDE  
9835

320ER  
HELENA SUNETTE VOS VAN WYK  
SANDS RD 37  
WILDERNESS  
6560

JACOB CHRISTOFFEL CRONJE  
PO BOX 506 VREDE VREDE 98  
VREDE  
9835

MARTHINUS JOHANNES ROELAND  
PO BOX 542  
VREDE  
9835

JOHANNES AUGUSTUS DREYER  
PO BOX 414  
VREDE  
9835

HENDRIK JOHANNES ODENDAAL  
POSBUS 436  
VREDE  
9835

CORNELIUS MEYER PRETORIUS  
REITZ STRAAT 8  
VREDE  
9835

IGNATIUS WILHELM FERREIRA  
POSBUS 38376  
GARSFONTEIN  
0042

PAUL RICHARD LOUIS BRAACK  
PO BOX 195 CORNELIA VREDE  
VREDE  
9850

LUKAS JOHANNES SWART  
62 MARKET ST  
VREDE  
9835

CHRISTIAAN RUDOLPH DE WET  
P O BOX 234  
VREDE  
9835

JANE WATSON VAN ZYL  
PRIVATE BAG X221  
VREDE  
9835

SEAN ROBERT KRAMER  
PO BOX 1761  
PARKLANDS  
2121

JACOBUS JOHANNES PETRUS  
PRINSLOO  
PO BOX 217  
VREDE  
9835

JOHANNES JACOBUS NEL  
28 STE  
377 LAAN  
PRETORIA  
0186

PIETER JACOBUS GYSBERT NEL  
P O BOX 674  
AMANZIMTOTI  
4125

JOHANNES FREDERIK VAN DER  
MERWE  
POSBUS 380 380  
VREDE  
9835

GERHARDUS STEPHANUS CLOETE  
POSBUS 313  
VREDE  
0313

CECILIA BARBARA CLOETE  
POSBUS 313  
VREDE  
0313

JAN FREDERIK RYKERS VAN ROOYEN  
POSBUS 15  
CORNELIA  
9850

STEFANIE UNGERER VAN DER MERWE  
PO BOX 7237  
STANDERTON  
2430

BAREND DANIEL JANSE VAN  
RENSBURG  
PO BOX 391  
VREDE  
9835

JOHN LEONARD MULLER  
POSBUS 551  
VREDE  
9835

JUDITH JACOBA UNGERER  
P O BOX 288  
VREDE  
9835



5200K

HENDRIK DIEDERIK VAN RENSBURG  
P O BOX 166  
CORNELIA  
9850

ALBERT DOCTOR RADEBE  
PO BOX 703  
VREDE  
9835

MARY CATHERINE VAN ROOYEN  
POSBUS 551  
VREDE  
9835

CHARMAIN STEYNBERG  
PO BOX 561  
VREDE  
9835

HERMANUS LUKAS PORTWIG  
PO BOX 552  
VREDE  
9835

DANIEL CHRISTIAAN PORTWIG  
PO BOX 552  
VREDE  
9835

ALETTA ALIDA REGINA VAN ASWEGEN  
P O BOX 477  
STANDERTON  
2430

HENRY BROADLEY COCKCROFT  
PO BOX 564  
VREDE  
9835

FRANS JOHANNES VAN DYK  
POSBUS 555  
BALFOUR  
2410

DAWID PETRUS MATHYS BOTES  
P O BOX 554  
VREDE  
9835

JACOBUS JOHANNES GERHARDUS  
VAN ROOYEN  
1NS RUS  
VREDE  
9835

JOHAN JACOB JANSE VAN RENSBURG  
PO BOX 600  
STANDERTON  
2430

MARTHINUS JOHANNES ZIETSMAN  
1 VAN DE MERWE ST  
VREDE  
9835

EUNICE MULLER  
8 VAN DER MERWE ST  
VREDE  
9835

JOHANNA DOROTHEA PRETORIUS  
P O BOX 743  
VREDE  
9835

JOHANN HEINRICH PORTWIG  
PO BOX 497  
VREDE  
9835

IZAK DANIEL DREYER  
PO BOX 414  
VREDE  
9835

PAUL STEPHANUS KRUGER  
FARM NO 0  
CORNELIA  
9850

ADRIAAN ISAK BESTER  
PO BOX 354  
VREDE  
9835

PETRUS PAULUS SWART  
POSBUS 367  
VREDE  
9835

CHRISTINA MAGDALENA DU TOIT  
16 MELKHOUT CRESCENT  
PAROW  
7500

MARIA ELIZABETH GUNTER  
POSBUS 43  
CORNELIA  
9850

JOHANNES JAKOBUS BESTER  
PO Box 269  
VREDE  
9835

WILLEM CAREL CILLIERS  
PO Box 565  
VREDE  
9835



320EK

GERTRUIDA MARIA EKSTEEN  
WILDEBEESSINGEL 6  
KOSMOSPARK  
2429

JACOB JOHANNES JACOBUS VAN  
ROOYEN  
PO BOX 551  
VREDE  
9835

SUSANNA JACOBA BURGER VISSER  
BAKKER ST 9  
IDAS VALLEI  
7600

CHRISTOFFEL PETRUS CILLIERS  
POSBUS 141  
FRANKFORT  
9830

FREDERIK JACOBUS VAN RENSBURG  
POSTAL BOX 20025  
PROTEAPARK  
0299

XOLANI XAVIER SIBISI  
9526 ZONE 6  
PIMVILLE  
1809

JACOBUS LODEWICUS DE JAGER  
PRINSLOO  
POSBUS 10  
VREDE  
9850

MARTHA HENDRINA ELIZABETH VAN  
DER MERWE  
P O BOX 280  
VREDE  
9835

HESTER CORNELIA VAN DEN BERG  
P O BOX 871  
STANDERTON  
2430

BAREND DANIEL BIERMAN  
PO BOX 365  
VREDE  
9835

MARTHINUS PETRUS DE JAGER  
PO BOX 32224  
FICHARDT PARK  
BLOEMFONTEIN  
9301

GERT HENDRIK UNGERER  
PO BOX 90  
CORNELIA  
9850

FREDERIK JACOBUS VAN ROOYEN  
PO BOX 87  
VREDE  
9850

JOHANNA WILHELMINA GILIOMEE  
P O BOX 79  
VILLIERS  
9840

JOHANNA CORNELIA SOPHIA VAN  
ROOYEN  
POSBUS 87  
ANNIESDALE  
9850

CORNELIUS PETRUS VAN WYK  
PO BOX 49  
VREDE  
9850

PETRUS LOUIS VISSER  
PO BOX 70031 THE WILLOWS  
VREDE  
0041

CLOETE ODENDAAL  
P O BOX 123  
VREDE  
9835

CHARLES MULLER COCKCROFT  
PO Box 212  
VREDE  
9835

RICHARD SCHALK JANSE VAN  
RENSBURG  
25 BISHOPSCOURT DR  
BISHOPSCOURT  
CLAREMONT  
7250

WILLEM CARL ODENDAAL  
PO BOX 123  
VREDE  
9835

HESTER JOHANNA MOMBERG  
KUHN ST 35  
VREDE  
9835

MICHAEL WHITE  
CHRISTINE RD 77  
LYNNWOOD GLEN  
PRETORIA  
0081

JUDITH ISABELLA MULLER  
P O BOX 207  
VREDE  
9835



32062

JOHAN ANDRIES DANNHAUSER  
CILLIERS  
PO BOX 53  
VREDE  
9850

PAMELA PEGGY RINKE  
PO BOX 95  
VREDE  
9835

CHRISTIAAN FREDERICK SCHEEPERS  
P O BOX 408  
VREDE  
9835

JAMES JOHN CAIRNCROSS  
PO BOX 215  
VREDE  
9835

PHILIPPUS BERNARDUS DE WET  
PRIVAAT SAK X02  
VILLIERS  
9840

CHRISTIAAN DE NECKER DE JAGER  
MARK ST 32  
FRANKFORT  
9830

SIDNEY ROBERT KOLLER  
POSBUS 310  
HEIDELBERG  
1438

HENDRIK SALMON PIENAAR  
POSBUS 155  
FRANKFORT  
9830

LOMBARDE VICTOR  
POSBUS 674  
FRANKFORT  
9830

JACOBUS HENDRIK MULLER  
PO BOX 611  
FRANKFORT  
9830

GERRIT PIETER VICTOR  
POSBUS 197  
FRANKFORT  
9830

VERONICA NICOLA JONKER  
168 MIDDENWATER PLASS  
FRANKFORT  
9830

SUSANNA JACOBA MARIA  
ESTERHUIZEN  
PO BOX 160  
CORNELIA  
9850

SCHALK WILLEM ROELAND  
PO BOX 575  
VREDE  
9835

PHILIPPUS JACOBUS CRONJE  
POSBUS 234  
VILLIERS  
9840

CHRISTINA MAGDALENA DU PLESSIS  
PO BOX 167  
VILLIERS  
9840

ANNA-MARIE SOPHIA RHEEDERS  
PO BOX 885  
MENLO PARK  
0042

ANZETTE BIERMAN  
PO BOX 407  
FRANKFORT  
9830

THOMAS JOHANNES HUGO  
PO BOX 166  
FRANKFORT  
9830

SAMUEL WENTZEL UNGERER  
PO BOX 30  
NTSWANATSATI  
CORNELIA  
9850

GIDEONA JACOBA HARTMAN  
P O BOX 222  
VILLIERS  
9840

GESINA JOHANNA DE WET  
PO BOX 250  
WINTERTON  
3340

ALBERTUS ADRIAAN VAN WYK  
FRANKFORT ST 3  
CORNELIA  
9850

WILLEM LODEWIKUS WESSELS  
PO BOX 807  
FRANKFORT  
9830



320 LR

PHILIPPUS JURIE WYNAND FOURIE  
PO Box 66  
VILLIERS  
9840

DIRKIE CATHARINA PIENAAR  
P O BOX 155  
FRANKFORT  
9830

EHSAN MUHAMMAD  
6 ROLLO STREET  
CYRILDENE  
2198

EVELYNE MARJORIE GRAAFF  
POSBUS 674  
MODIMOLLE  
0510

ALIDA MARIA UNGERER  
PO BOX 303  
FRANKFORT  
9830

DIRKIE PETRONELLA DU PREEZ  
P O BOX 295  
STANDERTON  
2430

ANN-MARIE BOTHA  
P O BOX 581  
STANDERTON  
2430

JOHAN DEWALD BOTHA  
PO Box 581  
STANDERTON  
2430

CORNELIUS JOHANNES RAUTENBACH  
POSBUS 674  
STANDERTON  
2430

ALEXANDER ABRAHAM TERBLANCHE  
PO BOX 3012  
STANDERTON  
2430

SUSARA CORNELIA KLEYNHANS  
P O BOX 21  
PLATRAN  
2435

JOHANNES FREDERICK RAUTENBACH  
PO BOX 1160  
HOLMDENE  
7380

JOHAN COENRAAD MARNEWECK  
PO BOX 403  
STANDERTON  
2430

HERMINA ELIZABETH VON WIELLIGH  
MBONANI MAYISELA ST 4  
STANDERTON  
2430

CAREL CHRISTIAAN VAN DER MERWE  
PO BOX 1854  
STANDERTON  
2430

DAVID SCHALK MARX  
PO Box 13319  
KEMPTON PARK  
1631

JOHANNES CASPARUS RADLEY  
PLAAS STERKFONTEIN 1  
STANDERTON  
2430

Mr N L Bosman  
P O Box 619  
Ermelo  
2350

JAN HARM THOMAS REYNEKE  
PO BOX 500  
VREDE  
9835

WILHELM JOHANN ODENDAAL  
DOHNE  
PO BOX 322  
FRANKFORT  
9830

PHILIPPUS ARNOLDUS VAN DER WALT  
PO BOX 254  
FRANKFORT  
9830

CATHARINA CORNELIA ODENDAAL  
101 LYNWOOD HILL FLATS1  
LYNWOOD  
MENLO PARK  
0081

JACOB JOHANNES HURTER  
PO BOX 8  
CORNELIA  
9850

PETRUS JACOBUS FOURIE  
PO BOX 606  
VREDE  
9835



320ER

JOHANN CAREL VAN HEERDEN  
PO BOX 761  
HEIDELBERG  
1438

JAMES STREAK  
POSBUS 106  
VREDE  
9835

PAUL HENDRIK ZIETSMAN  
PO BOX 546  
VREDE  
9835

CASPER HENDRIK WESSELS  
HALDONWEG 95  
BLOEMFONTEIN  
9301

PETRUS PAULUS SWART  
POSBUS 367  
VREDE  
9835

GERT SCHALK BOTHA  
PO BOX 557  
VREDE  
9835

ANDRIES JACOBUS WILHELMUS  
PRETORIUS STEYN TERBLANCHE  
P O BOX 1  
VILLIERS  
9840

DAVID SCHALK MARX  
PO Box 13319  
KEMPTON PARK  
1631

JOHANNES CASPARUS RADLEY  
PLAAS STERKFONTEIN 1  
STANDERTON  
2430





320 EK

MIDDELPUNT 773 BOERDERY CC  
11 BLOUBOKKIESTRAAT  
KOEDOESPOORT 0186

HENTIQ 2669 PTY LTD  
1247 JUSTICE MOHAMED STREET  
MENLO PARK 0081

KIMBRASTAX PTY LTD  
47 CALVINIA ROAD  
BRENTWOOD PARK  
GAUTENG 1501

NEVADA FARMING CC  
58 MILNER AVENUE  
NIGEL  
1490

JANWALD PROPERTIES CC  
PO BOX 10096  
ASTON MANOR  
1630

DEEP BLUE SEA INVESTMENTS CC  
PO BOX 1609  
GERMISTON  
1401

FOLLOW THE STAR TRADING 619 CC  
PO BOX 1746  
BEDFORDVIEW  
2008

LIGITPROPS 136 PTY LTD  
PO BOX 2384  
NYLSTROOM  
0510

ELITE MOBILE CC  
PO BOX 310  
WITKOPPEN  
2068

EBENHAEZER 1193 LANDGOED PTY LTD  
PO BOX 35465  
MENLO PARK  
102

MANIE PORTWIG BOERDERY CC  
PO BOX 359  
VREDE  
9835

WINSBEJAG KONSTRUKSIE 7 PTY LTD  
PO BOX 450  
STANDERTON  
2430

MATLABAS NATURE RESERVE PTY LTD  
PO BOX 49915  
HERCULES  
30

JOHAN RUS BOERDERY CC  
PO BOX 507  
STANDERTON  
2430

PHARMATREND PTY LTD  
PO BOX 55  
VILLIERS  
FREE STATE 9840

SPANDEKROON LANDGOED PTY LTD  
PO BOX 581  
STANDERTON  
MPUMALANGA 2430

ROLLIN INVESTMENTS PTY LTD  
PO BOX 74772  
LYNNWOOD RIDGE  
0040

JORSIE TRADING CO PTY LTD  
PO BOX 783703  
SANDTON  
2146

JORSIE TRADING CO PTY LTD  
PO BOX 783703  
SANDTON  
2146

HUDRIA WATER CC  
PO BOX 82  
ERMELO  
2350

BARTON FARM DEVELOPMENT PTY LTD  
PO BOX 8217  
EDENGLLEN  
1613

FIBREGLASS RESIN CO PTY LTD  
PO BOX 842  
DELMAS  
2210

AFROPULSE 128 PTY LTD  
PO BOX 8714  
EDLEEN  
1615

CHRISMA BOERDERY CC  
PO BOX 359  
VREDE  
9835



320ER

N J & C VAN DER MERWE BOERDERY PTY LTD  
POSBUS 1717  
STANDERTON  
2430

FOURIE & FOURIE BOERDERY CC  
POSBUS 249  
VREDE  
9835

ABJ BOERDERY CC  
POSBUS 269  
VREDE  
9835

DAMSPRUIT BOERDERY PTY LTD  
POSBUS 382  
STANDERTON  
2430

BEN BU ELEKTRIES CC  
POSBUS 40268  
ARCADIA  
0007

UYS BROERS BOERDERY PTY LTD  
POSBUS 450  
STANDERTON  
2430

HURTER FARMING ENTERPRISES CC  
POSBUS 8  
CORNELIA  
FREE STATE 9850

PJ SCHABORT DE JAGER PTY LTD  
POSBUS 818  
BLOEMFONTEIN  
9300



## Proof of SMS Distribution

Phonenumber	Network	Status	ScheduledDate	SubmittedDate	StatusDate
27793438417	Vodacom	DELIVRD	20/Sep/2016 16:56	20/Sep/2016 16:56	20/Sep/2016 16:56
27732289831	MTN	DELIVRD	20/Sep/2016 16:56	20/Sep/2016 16:56	20/Sep/2016 16:56
27834802005	MTN	DELIVRD	20/Sep/2016 16:56	20/Sep/2016 16:56	20/Sep/2016 16:56
27791871204	Vodacom	DELIVRD	20/Sep/2016 16:56	20/Sep/2016 16:56	20/Sep/2016 17:02
27834537690	MTN	DELIVRD	20/Sep/2016 16:56	20/Sep/2016 16:56	20/Sep/2016 16:56
27765468454	Vodacom	DELIVRD	20/Sep/2016 16:56	20/Sep/2016 16:56	20/Sep/2016 16:56
27730401848	MTN	DELIVRD	20/Sep/2016 16:56	20/Sep/2016 16:56	20/Sep/2016 16:56
27762157657	Vodacom	DELIVRD	20/Sep/2016 16:56	20/Sep/2016 16:56	20/Sep/2016 16:56
27824144129	Vodacom	DELIVRD	20/Sep/2016 16:56	20/Sep/2016 16:56	20/Sep/2016 16:56
27714594202	Vodacom	DELIVRD	20/Sep/2016 16:56	20/Sep/2016 16:56	20/Sep/2016 16:56
27734313169	MTN	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27825647770	Vodacom	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27845175483	CELL C	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27762139858	Vodacom	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27823881234	Vodacom	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27825363838	Vodacom	EXPIRED	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 19:25
27827999761	Vodacom	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27824103985	Vodacom	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27826437355	Vodacom	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27825739178	Vodacom	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27712641245	Vodacom	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 18:52
27828969879	Vodacom	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27740265114	CELL C	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27825792651	Vodacom	EXPIRED	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 20:01
27824192676	Vodacom	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27832663250	MTN	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27837551095	MTN	DELIVRD	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 14:25
27824904295	Vodacom	EXPIRED	28/Sep/2016 14:25	28/Sep/2016 14:25	28/Sep/2016 19:25
27827087111	Vodacom	DELIVRD	30/Sep/2016 12:29	30/Sep/2016 12:29	30/Sep/2016 13:12

## APPENDIX 5.4: ADVERTISEMENTS

# Soek & Vind

**AGRIFIRST SEKURITEIT 086 111 4055**

**Te Huur/To Rent:**  
Stourantie te huur 4m x 5m.  
Sui x 7m. 072 652 1504  
Groot 1 slpk woonstel op plasy  
3km buite Frankfort te huur, wêre  
ingehaat. R22000/m. 082 419 0638

Income property for sale.  
3 bedroom house with 2 bath-  
rooms. 2 separate flatlets with own  
bathrooms. Currently being used as  
a small guesthouse. Well established  
garden. 082 456 7847. R980000 neg.

3 Slpk woonstel te huur, 2 b/k,  
aparte opwas. Baie ruim, oppan  
woonkamer & kombuis. R3800 p/m  
(water ingesl). Bertus Nel 083 320  
883/083 657 8271

Kantoor of winkelpasie beskik-  
baar: 8A Van Reenenstraat  
072 652 1504

3 Slpk huis, nuwe gerustelike  
omheining, toetsluit motorhuis, om  
bystand waterpomp in erf. Skakel  
058 813 2379

**Gesoek/Wanted;**

Op soek na Dawid Jooste wat op  
Frankfort gebly het. Hy was  
geroof. Indien enige iemand  
Dawid ken, skakel asseblief vir  
David Hanan by 076 567 5765

Dienste vir AB Kerk:  
Sondae 10.00, aanddienste 18.00

**Te Koop/For Sale:**  
TWEELING 3 Slpk huise, su-  
cekkamer, kombuis, badkamer,  
dubbeldeur en garage. R330 000.  
082 489 7424

**VILLIERS-Verskeidenheid**  
gehardte boone beskikbaar.  
082 944 0365

**Dienste/Services:**  
Acrobatics vanaf Dinsdag 27  
September 5:15nm by O 27a.  
Dinsdae en Donderdae.  
Bring jou eie oefenmatjie en  
handgewiggies.  
Rina 062 595 3772

**Vakansie akkommodasie**

Vakansie woonstel in Ballito te  
huur. Plek vir 7 mense.  
30 September - 10 Oktober  
@R1200/mag.

3 - 15 Desember vir R1700/mag  
16 - 29 Desember - R1500/mag.  
Skakel Susan by 082 554 6953

Vakansie woonstelle te huur -  
+ R 500/mag of te wel -  
R 3500.00/week voor die einde  
van Oktober - 2016.

Akkommodasie vir tot 6 mense.  
Skakel Freddy Wilkden by  
0825644330 of 0588132129

## Wanneer mag jy skiet?

'n Navraag vanaf 'n  
inwoner het met die  
omlangse toename in  
huisbrake opnuut die  
vraag laat ontstaan  
oor wanneer mens 'n  
inbreker in jou huis mag  
skiet.

Prof. Callie Snyman  
'n afgetrede sivil-  
regkennar wat voorheen  
aan die UNISA ver-  
bonde was en die gesag-  
hebbende boek 'Strat-  
'egryf' geskryf het, sê  
in beginsel mag mens  
nie sonder nie iemand  
doodskiet nie, maar daar  
is uitsonderings op alle  
regsreëls.

In 'n uitreksel van  
Maroela Media wat deur  
Nico Strydom geskryf  
is het Prof. Snyman laat  
gegee aan die hand van  
verskeie voorbeelde.

**Scenario 1: 'n Onbe-  
kende persoon in jou erf**  
Volgens Prof. Snyman  
kan jy nie iemand in  
jou erf staand dood-  
skiet nie. "Die beste  
opsie sal wees om 'n  
wantskuiwingskoot af te  
vuur en die persoon te  
probeer waarsku dat hy  
indien nie weggan nie,  
jy hom gaan skiet."

'n mes kan gryp en dan  
is jou lewe in gevaar.  
Indien jy nie met seker  
kan sê die persoon is nie  
gewapen nie en jou lewe  
is nie onmiddellik in  
gevaar nie, kan jy die  
persoon probeer in  
ligtenis neem of hom  
aanhou totdat die polisie  
of 'n veiligheidsmaats-  
kappy opdaag.

Snyman sê indien jy  
byvoorbeeld 'n vroulike  
inbreker of 'n kind in  
jou huis aantref, moet jy  
homs of haar eerder nie  
summier skiet nie. "Vra  
dan wat soek hy daar,  
maar hou byvoorbeeld  
jou vuurwapen by jou  
met jou vinger op die  
sneller. Se vir die per-  
soon om stil te staan en  
waarsku hom of haar jy  
gaan hulle skiet as hul  
nie gehoor gee nie. As  
dit baie duidelik is dat  
die persoon onskadelik  
is, moet jy eerder nie  
skiet nie."

**Scenario 2: 'n Per-  
soon is ongewapen in  
jou huis**  
Volgens Snyman sal  
dit baie moeilik wees  
om te bepaal of 'n  
inbreker gewapen is of  
nie. "Daarom baie van  
die omstandighede af. Is  
die inbreker 'n groot  
man, lyk hy gevaarlik, is  
hy onder die invloed  
van alkohol? Veronder-  
stel jy tref die inbreker  
in die kombuis aan en  
dit lyk op die oog af of  
hy nie gewapen is nie.

"Di is baie moeilik  
dat die inbreker vinnig  
in mes kan gryp en dan  
is jou lewe in gevaar.  
Indien jy nie met seker  
kan sê die persoon is nie  
gewapen nie en jou lewe  
is nie onmiddellik in  
gevaar nie, kan jy die  
persoon probeer in  
ligtenis neem of hom  
aanhou totdat die polisie  
of 'n veiligheidsmaats-  
kappy opdaag.

'n inbreker geskiet het?  
Volgens Snyman  
moes jy onmiddellik 'n  
ambulans, die polisie en  
'n veiligheidsmaatskapp-  
y, indien van toepas-  
sing, ontbied. "Hierna  
word 'n lykousing ge-  
doen. Dit is baie belang-  
rik vir die polisie om te  
weet waar die koeël die  
inbreker getref het, by-  
voorbeeld in die kop,  
rug of bors. As dit lyk of  
die persoon in die bors  
geskiet is, kan dit aan-  
duidelike wees dat die  
kwadodoener op jou  
afgestem het," Snyman  
sê nadat die bewyse,  
verklarings en ander  
nodige inligting inge-  
samel en ondersoek is,  
word die dossier na die  
direkteur vir openbare  
vervolgting gestuur om  
te besluit of die hui-  
seinnar aan moord,  
strafbare manslag of  
glad nie, aangekla moet  
word. "Voordat 'n hui-  
seinnar aan moord skul-  
dig gevind word, moet  
die staat bewys dat hy of  
sy handeling die dood  
veroorzaak het. "Twee-  
dens moet die staat kan  
bewys dat die handeling  
onvermydelik was om  
die hui-seinnar hom of haar  
nie op selfverdediging  
kan beroep nie. Dan is  
daar ook 'n derde ver-  
rekening wat jy glo het jy  
is in gevaar. As jy sê jy  
het eertlikwaer glo jy  
is in doodgevaar, al het  
die omstandighede dit  
nie bewys het nie,  
moet die staat die teen-  
doel kan bewys.  
Snyman voeg ook by  
dat daar ook in die reg  
voorsiening gemaak  
word dat 'n persoon kan  
doodskiet om 'n ver-  
kerker te keer. "Al blyk  
dit na die tyd dat die  
inbreker fisiek swak  
was en nie 'n wesenlike  
gevaar ingehou het nie,  
kan die hof beslis dat jy  
verkeerd op-getree het.

Op 'n vraag aan prof.  
Snyman oor die persep-  
sion dat mens nie 'n  
inbreker in die rug moet  
skiet nie, sê hy "As hy  
in jou huis is, kan jy  
hom in die rug skiet.  
Wat as hy ommand en  
jou skiet? Jy dobbel met  
jou lewe en die reg ver-  
wag dit nie van jou nie.  
As hy wel besig is om  
byvoorbeeld te vlug uit  
jou erf uit, moet jy hom  
nie in die rug skiet nie."  
Wat gebeur nadat ek

Volgens Snyman is  
daar wel ook die uitson-  
dering van byvoorbeeld  
'n bejaarde vrou wat  
alkeen woon. "Die reg  
gee so iemand meer reg  
om summier te skiet as  
byvoorbeeld 'n jong  
man wat in die fleur van  
sy lewe is en gestroef is

**Elke Woensdag!**

## FRANKFORT VEILING

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Tweeling/Petrus Steyn/Reitz

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082 489 7424

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**GERHARD HARTMAN**  
082 550 2054

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**PETRUS SCHABORT**  
083 235 1456

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**KENNIS VAN 'N AANSOEK OM OMGEWINGSMAGTING EN GEPAAARDGAANDE PUBLIEKE DEELNAMEPROSES**

**VOORGESTELDE EKSPLORASIE VIR PETROLEUM OP 'N AANTAL PLASE IN 'N GEDEFINIEERDE VAN DIE VRYSTAAT EN MPUMALANGA PROVINSE (12/3/2016 FR)**

**AANSOEKER:** Aho Energy (Edms) Bpk ('Aho Energy')

**Aktiviteit:** Aho Energy het 'n aansoek om 'n Eksploorasie (ER) vir ekplorasie van 'n Petroleum en Gas' by die Petroleumagentskap van Suid-Afrika ('PASA') ingedien in terme van Desember 79 van die Wet op die Ontkenning van Mynreus en Petroleumontwikkeling, 2002 (No. 24 van 2002) (MPRDA). Die ER aansoekgebied is liggelyk tussen Standerton in die noorde, Frankfort in die ooste en Vredef in die suide geleë, wat beide gedeeltes van beide die Vrystaat en Mpumalanga provinsies is.

**Die aansoek is vir die ondersoek van vroeë-lewe petroleum-eksplorasie wat as doel het om vas te stel of daar enige Oerwaaier-Metaal (OM) gasreserwies is wat verdere ekplorasie kan veroorsaak. Die aanvanklike ekplorasiemeganisme sal beperk wees tot 'n aannemingsproses, konsultasie en die leër van 'n strategiese werktoegang by behorende jare. Aho Energy sal verskeie van die voorgestelde ekplorasielusse aan die omliggende gemeenskappe en omgewingskonsekkentat SLR Consulting (Suid-Afrika) (Edms) Bpk ('SLR').**

**Aansoek om Omgewingsmagting:** In terme van die MPRDA, moet 'n aansoeker voldoen aan die vereistes van Hoofstuk 5 van NEMA. In terme van NEMA, moet die voorgestelde proef-omgewingsmagting, aangevraagde Aktiwiteit 10 van Aktiwiteitskategorie 2 (GN No. 1056) van Inpassing 2. As sulks moet 'n Omgewingsmagting (OM) aangevraagde om te laat aan die ER Regulasies 2014 uit te voer. Aho Energy sal by PASA aansoek doen om 'n Omgewingsmagting.

**In agtergrondliggingdokument (AID) met woordeboek inbegreep is aangeleidelik beskikbaar vir besigtiging. Eksemplare van die AID is te sien by SLR beskikbaar of kan van die SLR webblad afgehaal word (www.slrconsulting.co.za). Die AID sluit 'n kaart in wat in van al die plekke wat by die ER aansoekgebied ingesluit is.**

**Indien u of u organisasie wil reguleer as 'n gestelrekte of belanghebbende party en/of u enige wettige belang het by die voorgestelde projek, moet u kontak maak met Jeremy Blood van SLR by die onderstaande kontakbesonderhede. Kommentaar moet aan SLR gestuur word teen 21 Oktober 2016 of insluiting by die Omgewingsmagting.**

**Kennis gegee dat die volgende Openbare Inliggingvergaderings as deel van die proses gefoel sal word:**

Date	Venue	Time
10 Oct 2016	Senate Gesetshuis, Pieter Maritzburg, 125 Rietveld, 12 km van Frankfort	16:00
11 Oct 2016	Stendons Oval/Ak, Peter Bakley Boulevard, Standerton	09:00
11 Oct 2016	NG Kerk, Jans Pretorius, Colesburg	19:00
12 Oct 2016	Vredef, waar 'n konsultasie, Vredef	09:00

**SLR KONTAKBESONDERHED**  
Erethed 31, Rowlandpark, Durbanville, Kaapstad, 8001  
Postbus 10145, Capetown, 7800  
Tel: (021) 461 1189. Faks: (021) 461 1120  
E-pos: blood@slrconsulting.com

**Inwoners raak meer paraat**

Huisekkuriteit en  
personeelike veiligheid is  
hoog die lys van  
plaaslike inwoners se  
prioriteite nou dat 'n  
vraag van misdaad die  
dorp die afgelope paar  
maande teister.

"Alarme, buite-  
tegnologies, early warning  
sisteme en kameras  
word nou draaglik in-  
stalleer," vertel Neels de  
Jager van AgriFirst  
Sekuriteit.

Dit word beaam deur  
Gerhard Smit van WGL  
Sekuriteit. "Buite-kam-  
eras en -alarme is ians  
op aanvraag."

Dups Frankfort sê  
dat tweerigting-radio's,  
wat gebruik word tussen  
bure en buurtwagte om  
straat-veiligheids-  
groepe, vlieg van die rakke  
af.

Personeelike beveilig-  
ing neem ook toe met 'n  
groot aanvraag na 'n  
wapen waarvoor 'n  
lisensie nie nodig is nie.  
Die grootste verkoper  
is gaspistole, 'n replika  
van 'n handwapen,  
wat funksioneer met  
gaspatrone. Inwoners  
doen ook navraag oor  
verhalftelgiewere  
(paintball), en dan  
voortspeersproei en  
skootskotte. Inwoners  
word ook aangeraai om  
ander verskillende strate-  
eie whatsapp-groepe te  
begin, wat inwoners van  
die straat on-  
gerustelike kan rap-  
porteer en mekaar at-  
tend kan maak op ver-  
dachte persone en voer-  
tuie wat in die straat  
opgemerk word.

**NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND ASSOCIATED PUBLIC PARTICIPATION PROCESS**

**PROPOSED EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/2016 FR)**

**AHO ENERGY**

Notice is hereby given of the intention to make an application for Environmental Authorisation and a public participation process in terms of the Environmental Impact Assessment (EIA) Regulations 2014 promulgated in terms of the National Environmental Management Act, 1989 (No. 107 of 1989) (NEMA).

**Applicant:** Aho Energy (Pty) Ltd (Aho Energy)

**Activity:** Aho Energy has lodged an application for an Exploration Right (ER) to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa ("PASA") in terms of Section 79 of the Mineral and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA). The ER application area is located roughly between the towns of Standerton in the north, Frankfort in the west and Vredef in the east, which falls within portions of both the Free State and Mpumalanga provinces.

The application is for undertaking early phase petroleum exploration, which is aimed at determining the presence of Coal bed Methane (CBM) gas resources that could warrant further exploration. The initial exploration work programme would be restricted to an aeromagnetic survey and the drilling of up to five stratigraphic core boreholes at known locations. Aho Energy would agree terms with already affected landowners where access would be required.

**Environmental Assessment Practitioner:** SLR Consulting (South Africa) (Pty) Ltd ('SLR')

**Application for Environmental Authorisation:** In terms of the MPRDA, a requirement for obtaining an ER is that the applicant must comply with Chapter 3 of NEMA. In terms of NEMA, the proposed project requires Environmental Authorisation as it triggers Activity 15 in Listing Notice 2 (GN No. 1056). As such a Scoping and EIA process must be undertaken in terms of the EIA Regulations 2014. Aho Energy will make an application for environmental authorisation to PASA.

A Background Information Document (BID) providing preliminary project information has been compiled and is available for review and comment. Copies of the BID are available from SLR on request or can be downloaded from the SLR website (www.slrconsulting.co.za). The BID includes a map and list of farms included in the ER application area.

If you or your organisation would like to register as an interested and affected party and/or wish to raise any initial issues or concerns regarding the proposed project, please contact Jeremy Blood of SLR at the contact details below. Comments should be forwarded to SLR by no later than 21 October 2016 for inclusion in the Scoping Report.

Notice is also hereby given that the following information-sharing meetings will be held as part of the process:

Date	Venue	Time
10 Oct 2016	Senate Gesetshuis, Pieter Maritzburg, 125 Rietveld, 12 km van Frankfort	16:00
11 Oct 2016	Stendons Oval/Ak, Peter Bakley Boulevard, Standerton	09:00
11 Oct 2016	NG Kerk, Jans Pretorius, Colesburg	19:00
12 Oct 2016	Vredef, waar 'n konsultasie, Vredef	09:00

**SLR CONTACT DETAILS**  
Die 31 Rowlandpark, Durbanville, Kaapstad, 8001  
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Tel: (021) 461 1189. Faks: (021) 461 1120  
E-mail: blood@slrconsulting.com



## NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND ASSOCIATED PUBLIC PARTICIPATION PROCESS

PROPOSED EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND  
MPUMALANGA PROVINCES (12/3/320 ER)

Notice is hereby given of the intention to make an application for Environmental Authorisation and a public participation process in terms of the Environmental Impact Assessment (EIA) Regulations 2014 promulgated in terms of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA).

Applicant: Afro Energy (Pty) Ltd ("Afro Energy").

Activity: Afro Energy has lodged an application for an Exploration Right (ER) to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa ("PASA") in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA). The ER application area is located roughly between the towns of Standerton in the north, Frankfort in the west and Vrede in the east, which falls within portions of both the Free State and Mpumalanga provinces.

The application is for undertaking early-phase petroleum exploration, which is aimed at determining the presence of Coal Bed Methane (CBM) gas resources that could warrant further exploration. The initial exploration work programme would be restricted to an aeromagnetic survey and the drilling of up to five stratigraphic core boreholes at known locations. Afro Energy would agree terms with directly affected landowners where access would be required.

Environmental Assessment Practitioner: SLR Consulting (South Africa) (Pty) Ltd ("SLR").

Application for Environmental Authorisation: In terms of the MPRDA, a requirement for obtaining an ER is that the applicant must comply with Chapter 5 of NEMA. In terms of NEMA, the proposed project requires Environmental Authorisation as it triggers Activity 18 in Listing Notice 2 (GN No. R984). As such a *Scoping and EIA* process must be undertaken in terms of the EIA Regulations 2014. Afro Energy will make an application for Environmental Authorisation to PASA.

A Background Information Document (BID) providing preliminary project information has been compiled and is available for review and comment. Copies of the BID are available from SLR on request or can be downloaded from the SLR website ([www.ccaenvironmental.co.za](http://www.ccaenvironmental.co.za)). The BID includes a map and list of farms included in the ER application area.

If you or your organisation would like to register as an interested and affected party and/or wish to raise any initial issues or concerns regarding the proposed project, please contact Jeremy Blood of SLR at the contact details below. Comments should be forwarded to SLR by no later 21 October 2016 for inclusion in the Scoping Report.

Notice is also hereby given that the following Information-sharing Meetings will be held as part of the process:

Date	Venue	Time
10 Oct 2016	Siesta Guest House, Farm Merrydale, R26 Reitz Road, 12 km from Frankfort	15h00
11 Oct 2016	Standerton Golf Club, Peter Bailey Boulevard, Standerton	09h00
11 Oct 2016	NG Kerk Hall, Jan Pen Street, Cornelia	15h00
12 Oct 2016	Vrede Hotel, Kerk Street, Vrede	09h00

### SLR CONTACT DETAILS

Unit 39 Roeland Square, Drury Lane, Cape Town, 8001

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## KENNIS VAN 'N AANSOEK OM OMGEWINGSMAGTIGING EN GEPAARDGAANDE PUBLIEKE DEELNAMEPROSES

### VOORGESTELDE EKSPLORASIE VIR PETROLEUM OP 'N AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN

MPUMALANGA PROVINSIES (12/3/320 ER)

Kennis geskied hiermee van die voorneme om aansoek te doen om Omgewingsmagtiging en 'n publieke deelnameproses in terme van die Omgewingsimpakbepaling (OIB) Regulasies 2014 kragtens die Nasionale Wet op Omgewingsbestuur, 1998 (No. 107 van 1998) (NEMA).

Aansoeker: Afro Energy (Edms) Bpk ("Afro Energy").

Aktiwiteit: Afro Energy het 'n aansoek om 'n Eksplorasiereg (ER) vir eksplorasiereg van "Petroleum en Gas" by die Petroleumagentskap van Suid-Afrika ("PASA") ingedien in terme van Gedeelte 79 van die Wet op die Ontwikkeling van Minerale en Petroleumhulpbronne, 2002 (No. 28 van 2002) (MPRDA). Die ER aansoekgebied is rofweg tussen Standerton in die noorde, Frankfort in die weste en Vrede in die ooste geleë, wat binne gedeeltes van beide die Vrystaat en Mpumalanga provinsies val.

Die aansoek is vir die onderneem van vroeë-fase petroleumeksplorasiereg wat as doel het om vas te stel of daar enige Steenkoollaag-Metaan (SLM) gasbronne teenwoordig is wat verdere eksplorasiereg kan regverdig. Die aanvanklike eksplorasiewerkprogram sal beperk wees tot 'n aeromagnetiese opname en die boor van tot vyf stratigrafiese kernboorgate by bekende plekke. Afro Energy sal instem tot voorwaardes met direk geëffekteerde grondeienaars waar toegang verlang sal word.

Omgewingskonsultant: SLR Consulting (South Africa) (Edms) Bpk ("SLR")

Aansoek om Omgewingsmagtiging: In terme van die MPRDA moet 'n aansoeker voldoen aan die vereistes van Hoofstuk 5 van NEMA. In terme van NEMA benodig die voorgestelde projek Omgewingsmagtiging, aangesien Aktiwiteit 18 van Aktiwiteitslys 2 (GN No. R984) van toepassing is. As sulks moet 'n *Omvangstudie en OIB* proses in terme van die OIB Regulasies 2014 onderneem word. Afro Energy sal by PASA aansoek doen om Omgewingsmagtiging.

'n Agtergrondinligtingsdokument (AID) met voorlopige projekinligting is saamgestel en beskikbaar vir oorsig en kommentaar. Eksemplare van die AID is op aanvraag by SLR beskikbaar of kan van die SLR webblad afgelaai word ([www.ccaenvironmental.co.za](http://www.ccaenvironmental.co.za)). Die AID sluit 'n kaart en lys in van al die plase wat by die ER aansoekgebied ingestuit is.

Indien u of u organisasie wil registreer as 'n geëffekteerde of belanghebbende party en/of u enige kwessies of bekommernisse aangaande die voorgestelde projek het, skakel asseblief met Jeremy Blood van SLR by die onderstaande kontakbesonderhede. Kommentaar moet aan SLR gestuur word teen 21 Oktober 2016 vir insluiting by die Omvangstudieverlag.

Kennis geskied hiermee dat die volgende Openbare Inligtingsvergaderings as deel van die proses gehou sal word:

Date	Venue	Time
10 Okt 2016	Siesta Gastehuis, Plaas Merrydale, R26 Reitzpad, 12 km van Frankfort	15h00
11 Okt 2016	Standerton Gholfklub, Peter Bailey Boulevard, Standerton	09h00
11 Okt 2016	NG Kerkzaal, Jan Penstraat, Cornelia	15h00
12 Okt 2016	Vrede Hotel, Kerkstraat, Vrede	09h00

SLR KONTAKBESONDERHEDE

Eenheid 39, Roelandplein, Drurylaan, Kaapstad, 8001

Posbus 10145, Caledonplein, 7905

Tel: (021) 461 1118 Faks: (021) 461 1120

E-pos: [jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)





# Agency steps up the protection of beneficiaries



Local SASSA offices at the Gerrie van Vuuren Building on the corner of Paarl and Prinses Street, where beneficiaries can go to update their funeral policies' deductions for 2017.

**NATIONAL** - South Africans who receive grants from the South African Social Security Agency (SASSA) are warned and encouraged to report unauthorized illegal funeral deductions on their grants. Most beneficiaries, particularly senior citizens, have fallen victim to the so-called funeral policies they never entered into. SASSA and the Social Development Department have taken serious steps to protect beneficiaries from fraudsters.

SASSA's national spokesman, Kgomotso Diseko, released a media statement announcing that following the amendments of the regulations of the Social Assistance Act of 2004, this year some social grant beneficiaries will have to make alternative arrangements for the payment of funeral insurance premiums because these deductions will be discontinued from December 2016. These beneficiaries should visit their nearest SASSA offices to give permission in writing and in person to voluntarily give permission for deductions of funeral policies or any other contract entered into with the service provider.

The law allows for a maximum of only 10%

of the grant value. The agency is investigating hundreds of cases after beneficiaries have complained about unauthorized deductions from their grants. One such case is where a wheelchair-bound senior citizen felt the pinch after a funeral policy provider has been deducting R200 per month from her grant for the last two years, when she did not enter into a contract with any funeral policy provider. Kgomotso said it is illegal for financial institutions to milk unsuspecting grant beneficiaries by deducting premiums without their concern. "Our clean-up campaign is aimed at protecting the vulnerable by removing illegitimate deductions from our system," said Diseko. People of Lekwa Municipality are advised to visit SASSA offices at the Gerrie van Vuuren Building at the corner of Prinses and Paarl Street to make arrangements for their legitimate funeral policies before the end of November 2016. Bear in mind that all the deductions will be discontinued in December 2016, only those that made a written submission and in person will be on the system in January 2017. **DM**

## Chief Whip thrown out

**STANDERTON** - During the 'Take the Legislature to the People' campaign which took place in Sakhile on 13 September, Jane Sithole, the Democratic Alliance Chief Whip, was thrown out of the sitting. The DA is appalled at Mpumalanga Provincial Legislature Speaker, Thandi Shongwe's decision to throw DA Chief Whip, Jane Sithole out of a sitting for speaking in Sepedi, a language the Speaker does not understand.

This came after Sithole made a comment that the Speaker viewed as inappropriate and then asked Sithole to withdraw. Sithole unequivocally withdrew her comment but just because her withdrawal was in Sepedi, the Speaker was

not satisfied. Despite the legislature providing translation devices to all members, the Speaker turned to members of the ANC asking them to translate what Sithole had said. She made no attempt to consult the Hansard or make a ruling on the matter.

It is absolutely appalling that as we celebrate Heritage Month, Speaker Shongwe sees it fit to deny another member the right to speak in her indigenous language.

Rule 40 of the Mpumalanga Legislature's rules and orders makes provision for the Speaker to unilaterally order a member out of the house if she is of the opinion that the member is;

- Deliberately contravening a provision of the rules, the Constitution, or any other law
- In contempt of the Legislature
- Disregarding the authority of the Presiding Officer
- Grossly disorderly

Jane Sithole did none of the above. The DA will once again write a letter to Mpumalanga Premier, David Mabuza, requesting him to address the conduct of the Speaker in order to preserve democracy.

It will be in Shongwe's best interest to learn other languages instead of punishing members for her own ignorance. This is a sad day for our heritage. **JD**

**KENNIS VAN 'N AANSOEK OM OMGEWINGSMAGTIGING EN GEPAARDGAANDE PUBLIEKE DEELNAMEPROSES**

**VOORGESTELDE EKSPLORASIE VIR PETROLEUM OP 'N AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN MPUMALANGA PROVINSIËS (12/3/320 ER)**

**AFRO ENERGY**

Kennis geskied hiermee van die voorneme om aansoek te doen om Omgewingsmagtiging en 'n publieke deelnameproses in terme van die Omgewingsimpakbepaling (OIB) Regulasies 2014 kragtens die Nasionale Wet op Omgewingsbestuur, 1998 (No. 107 van 1998) (NEMA).

**Aansoeker:** Afro Energy (Edms) Bpk ("Afro Energy").

**Aktiviteit:** Afro Energy het 'n aansoek om 'n Eksplorasiereg (ER) vir eksplorasiereg van "Petroleum on Gas" by die Petroleumagentskap van Suid-Afrika ("PASA") ingedien in terme van Gedeelte 79 van die Wet op die Ontwikkeling van Minerale en Petroleumhulpbronne, 2002 (No. 28 van 2002) (MPRDA). Die ER aansoekgebied is rotweg tussen Standerton in die noorde, Frankfort in die weste en Vrede in die ooste geleë, wat binne gedeeltes van beide die Vrystaat en Mpumalanga provinsies val.

Die aansoek is vir die onderneem van vroeë-fase petroleum-eksplorasiereg wat as doel het om vas te stel of daar enige Steenkoollaag-Metaan (SLM) gasbronne teenwoordig is wat verdere eksplorasiereg kan regverdig. Die aanvanklike eksplorasieregprogram sal beperk wees tot 'n aeromagnetiese opname en die boor van tot vyf stratigrafiese kernboregale by bekende plekke. Afro Energy sal instem tot voorwaardes met direk geaffekteerde grondeienaars waar toegang verdrag sal word.

**Omgewingskonsultant:** SLR Consulting (Suid-Afrika) (Edms) Bpk ("SLR")

**Aansoek om Omgewingsmagtiging:** In terme van die MPRDA moet 'n aansoeker voldoen aan die vereistes van Hoofstuk 5 van NEMA. In terme van NEMA benodig die voorgestelde projek Omgewingsmagtiging, aangesien Aktiviteit 18 van Aktiviteitslys 2 (GN No. R984) van toepassing is. As sulks moet 'n Omgewingsstudie en OIB proses in terme van die OIB Regulasies 2014 onderneem word. Afro Energy sal by PASA aansoek doen om Omgewingsmagtiging.

'n Agtergrondinligtingsdokument (AID) met voorlopige projekinligting is saamgestel en beskikbaar vir oorsig en kommentaar. Eksemplare van die AID is op aanvraag by SLR beskikbaar of kan van die SLR webblad afgelaai word ([www.ccaenvironmental.co.za](http://www.ccaenvironmental.co.za)). Die AID sluit 'n kaart en lys in van al die plase wat by die ER aansoekgebied ingesluit is.

Indien u of u organisasie wil registreer as 'n geaffekteerde of belanghebbende party en/of u enige kwessies of bekommernisse aangaande die voorgestelde projek het, skakel asseblief met Jeremy Blood van SLR by die onderstaande kontakbesonderhede. Kommentaar moet aan SLR gestuur word **teen 21 Oktober 2016** vir insluiting by die Omgewingsstudieverslag.

Kennis geskied hiermee dat die volgende Oopbare Inligtingsvergaderings as deel van die proses gehou sal word:

Date	Venue	Time
10 Okt 2016	Siesta Gastehuis, Plaas Merrydale, R26 Reitzpad, 12 km van Frankfort	15h00
11 Okt 2016	Standerton Ghoelklub, Peter Bailey Boulevard, Standerton	09h00
11 Okt 2016	NG Kerksaal, Jan Penstraat, Cornelia	15h00
12 Okt 2016	Vrede Hotel, Kerkstraat, Vrede	09h00

**SLR KONTAKBESONDERHEDE**  
Eenheid 39, Roelandplein, Drury Lane, Kaapstad, 8001  
Posbus 10145, Caledonplein, 7905  
Tel: (021) 461 1118 Faks: (021) 461 1120  
E-pos: [jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)

**SLR**

**NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND ASSOCIATED PUBLIC PARTICIPATION PROCESS**

**PROPOSED EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)**

**AFRO ENERGY**

Notice is hereby given of the intention to make an application for Environmental Authorisation and a public participation process in terms of the Environmental Impact Assessment (EIA) Regulations 2014 promulgated in terms of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA).

**Applicant:** Afro Energy (Pty) Ltd ("Afro Energy").

**Activity:** Afro Energy has lodged an application for an Exploration Right (ER) to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa ("PASA") in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA). The ER application area is located roughly between the towns of Standerton in the north, Frankfort in the west and Vrede in the east, which falls within portions of both the Free State and Mpumalanga provinces.

The application is for undertaking early-phase petroleum exploration, which is aimed at determining the presence of Coal Bed Methane (CBM) gas resources that could warrant further exploration. The initial exploration work programme would be restricted to an aeromagnetic survey and the drilling of up to five stratigraphic core boreholes at known locations. Afro Energy would agree terms with directly affected landowners where access would be required.

**Environmental Assessment Practitioner:** SLR Consulting (South Africa) (Pty) Ltd ("SLR").

**Application for Environmental Authorisation:** In terms of the MPRDA, a requirement for obtaining an ER is that the applicant must comply with Chapter 5 of NEMA. In terms of NEMA, the proposed project requires Environmental Authorisation as it triggers Activity 18 in Listing Notice 2 (GN No. R984). As such a Scoping and EIA process must be undertaken in terms of the EIA Regulations 2014. Afro Energy will make an application for Environmental Authorisation to PASA.

A Background Information Document (BID) providing preliminary project information has been compiled and is available for review and comment. Copies of the BID are available from SLR on request or can be downloaded from the SLR website ([www.ccaenvironmental.co.za](http://www.ccaenvironmental.co.za)). The BID includes a map and list of farms included in the ER application area.

If you or your organisation would like to register as an interested and affected party and/or wish to raise any initial issues or concerns regarding the proposed project, please contact Jeremy Blood of SLR at the contact details below. Comments should be forwarded to SLR by **no later 21 October 2016** for inclusion in the Scoping Report.

Notice is also hereby given that the following information-sharing Meetings will be held as part of the process:

Date	Venue	Time
10 Oct 2016	Siesta Guest House, Farm Merrydale, R26 Reitz Road, 12 km from Frankfort	15h00
11 Oct 2016	Standerton Golf Club, Peter Bailey Boulevard, Standerton	09h00
11 Oct 2016	NG Kerk Hall, Jan Pen Street, Cornelia	15h00
12 Oct 2016	Vrede Hotel, Kerk Street, Vrede	09h00

**SLR CONTACT DETAILS**  
Unit 39 Roeland Square, Drury Lane, Cape Town, 8001  
PO Box 10145, Caledon Square, 7905  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: [jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)

**SLR**

## Best boat competition

**STANDERTON** - The third Best Boat Angling Competition will take place on Grootdraai Dam, Standerton on Saturday, 24 September. The captains meeting will be at 06:00 at the clubhouse where the rules of the day will be explained. Only boat angling will be allowed and the weigh in will be at 15:00. Interested anglers may contact Tokkie Brits on 082 654 4330 or WK van der Merwe on 073 481 3777. **JD**





## APPENDIX 5.5: NOTICES

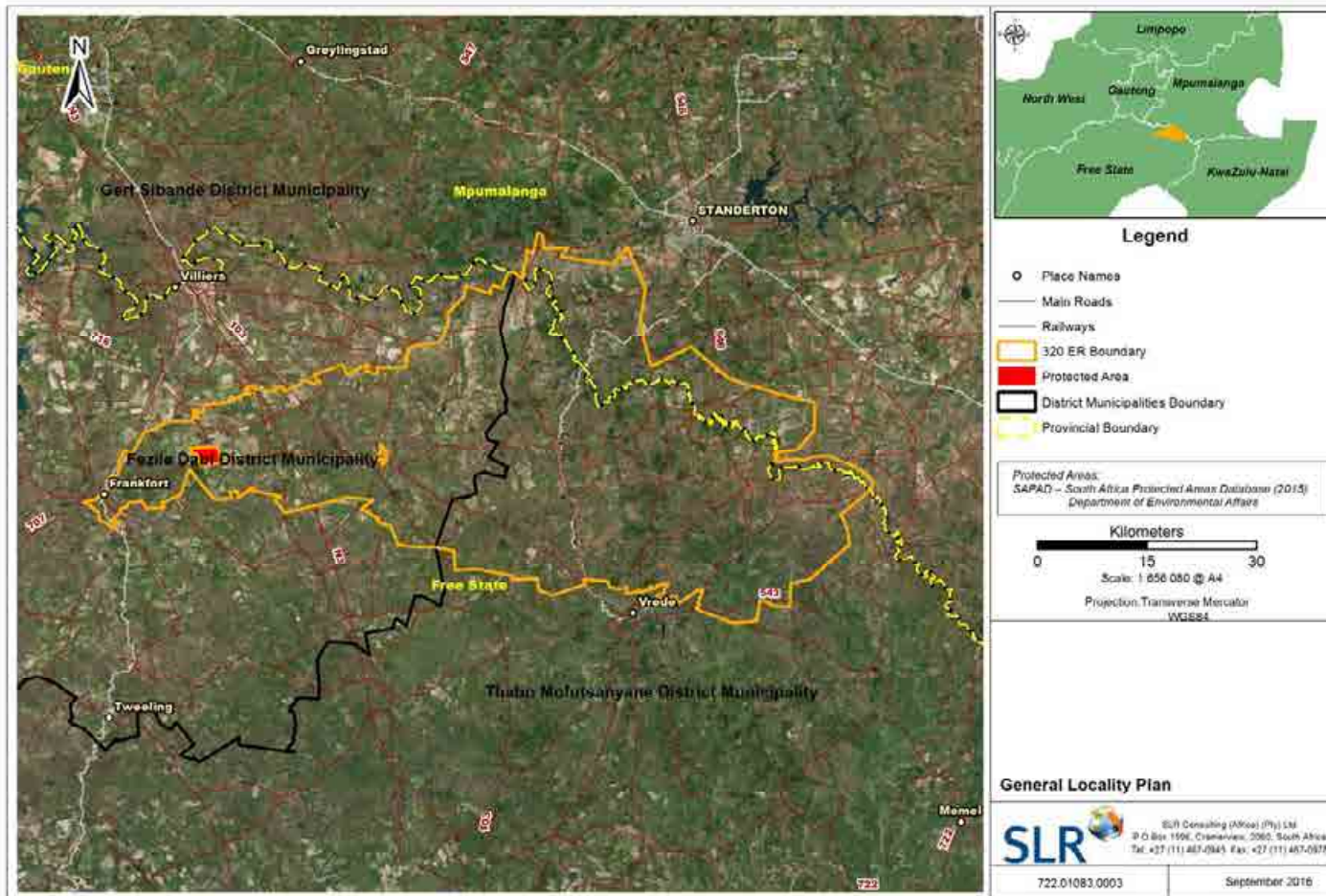
# NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION AND ASSOCIATED PUBLIC PARTICIPATION PROCESS

## EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

Applicant: Afro Energy (Pty) Ltd ("Afro Energy").

Environmental Assessment Practitioner: SLR Consulting (South Africa) (Pty) Ltd ("SLR").

Description and Location: Afro Energy has lodged an application for an Exploration Right (ER) to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa ("PASA") in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA). The ER application area is located roughly between the towns of Standerton in the north, Frankfort in the west and Vrede in the east, which falls within portions of both the Free State and Mpumalanga provinces.



The application is for undertaking early-phase petroleum exploration, which is aimed at determining the presence Coal Bed Methane (CBM) gas resources that could warrant further exploration. The initial exploration work programme would

be restricted to an aeromagnetic survey and the drilling of up to five stratigraphic core boreholes at known locations.

Application for Environmental Authorisation to undertake the following Listed Activity: In terms of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA), the application for an ER requires Environmental Authorisation as it triggers Activity 18 in Listing Notice 2 (GN No. R984). As such a Scoping and EIA process must be undertaken in terms of the EIA Regulations 2014.

Opportunity to Participate:

If you or your organisation would like to register as an interested and affected party and/or wish to raise any initial issues or concerns regarding the proposed project, please contact SLR at the contact details below. Comments should be forwarded to SLR by no later 21 October 2016 for inclusion in the Scoping Report.

A Background Information Document (BID) providing preliminary project information has been compiled and is available for review and comment. Copies of the BID are available from SLR on request or can be downloaded from the SLR website ([www.ccaenvironmental.co.za](http://www.ccaenvironmental.co.za)).

Notice is also hereby given that the following Information-sharing Meetings will be held as part of the process:

Date	Venue	Time
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SLR Contact Details:

PO Box 10145, Caledon Square, Cape Town, 7905

Tel: (021) 461 1118/9 Fax: (021) 461 1120 Email: [jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)





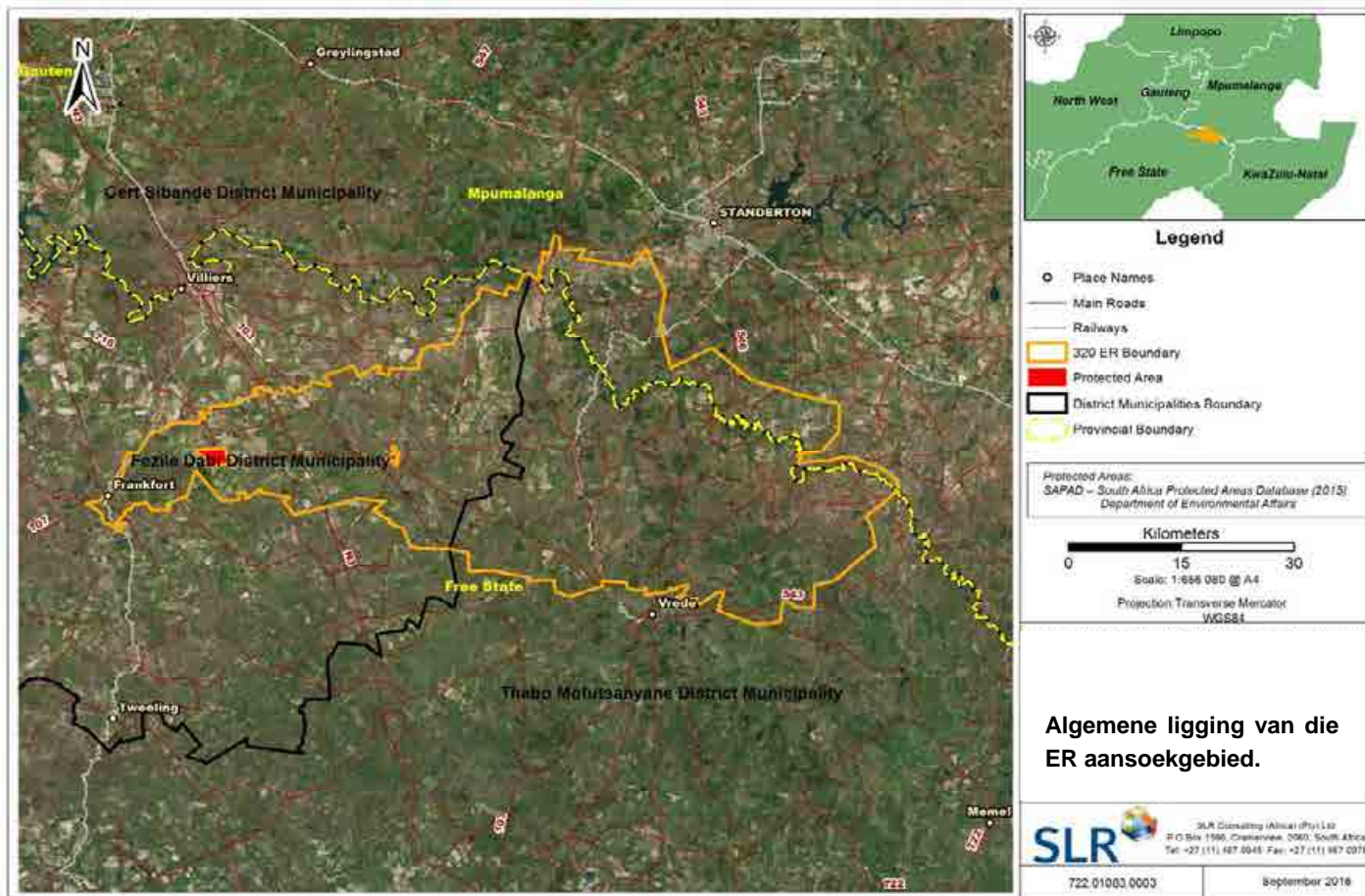
# KENNIS VAN 'N AANSOEK OM OMGEWINGSMAGTIGING EN GEPAARDGAANDE PUBLIEKE DEELNAMEPROSES

## EKSPLORASIE VIR PETROLEUM OP 'N AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN MPUMALANGA PROVINSIES (12/3/320 ER)

Aansoeker: Afro Energy (Edms) Bpk ("Afro Energy").

Omgewingskonsultant: SLR Consulting (South Africa) (Edms) Bpk ("SLR").

Beskrywing en Ligging: Afro Energy het 'n aansoek om 'n Eksplorasiereg (ER) vir eksplorasië van "Petroleum en Gas" by die Petroleumagentskap van Suid-Afrika ("PASA") ingedien in terme van Gedeelte 79 van die Wet op die Ontwikkeling van Minerale en Petroleumhulpbronne, 2002 (No. 28 van 2002) (MPRDA). Die ER aansoekgebied is rofweg tussen Standerton in die noorde, Frankfort in die weste en Vrede in die ooste geleë, wat binne gedeeltes van beide die Vrystaat en Mpumalanga provinsies val.



Die aansoek is vir die onderneem van vroeë-fase petroleumeksplorasië wat as doel het om vas te stel of daar enige Steenkoollaag-Metaan (SLM) gasbronne teenwoordig is wat verdere eksplorasië kan regverdig. Die aanvanklike eksplorasiewerkprogram sal beperk wees tot 'n aeromagnetiese opname en die boor van tot vyf stratigrafiese kernboorgate by bekende plekke.

Aansoek om Omgewingsmagtiging om die volgende Gelyste Aktiwiteit te onderneem: In terme van die Nasionale Wet op Omgewingsbestuur, 1998 (No. 107 van 1998) (NEMA), benodig die aansoek om 'n ER ook Omgewingsmagtiging aangesien Aktiwiteit 18 van Aktiwiteitslys 2 (GN No. R984) van toepassing is. As sulks moet 'n Omvangstudie en Omgewingsimpakbepaling (OIB) proses onderneem word in terme van die OIB Regulasies 2014.

Geleentheid om deel te neem:

Indien u of u organisasie wil registreer as 'n geaffekteerde of belanghebbende party en/of u enige kwessies of bekommernisse aangaande die voorgestelde projek het, skakel asseblief met SLR by die onderstaande kontakbesonderhede. Kommentaar moet aan SLR gestuur word teen 21 Oktober 2016 vir insluiting by die Omvangstudieverlag.

'n Agtergrondinligtingsdokument (AID) met voorlopige projekinligting is saamgestel en beskikbaar vir oorsig en kommentaar. Eksemplare van die AID is op aanvraag by SLR beskikbaar of kan van die SLR webblad afgelaai word ([www.ccaenvironmental.co.za](http://www.ccaenvironmental.co.za)).

Kennis geskied hiermee dat die volgende Openbare Inligtingsvergaderings as deel van die proses gehou sal word:

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11 Okt 2016	NG Kerksaal, Jan Penstraat, Cornelia	15h00
12 Okt 2016	Vrede Hotel, Kerkstraat, Vrede	09h00

SLR Kontakbesonderhede:

Posbus 10145, Caledonplein, Kaapstad, 7905

Tel: (021) 461 1118/9 Faks: (021) 461 1120 E-pos: [jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)





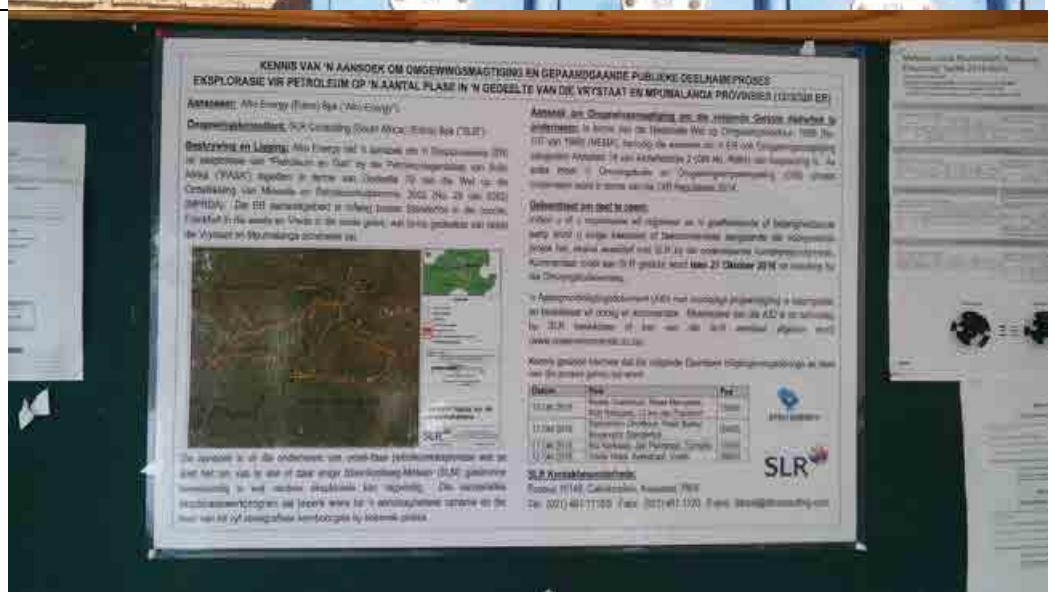
21  
September  
2016 – BKB,  
Frankfort



21  
September  
2016 – Post  
Office,  
Frankfort



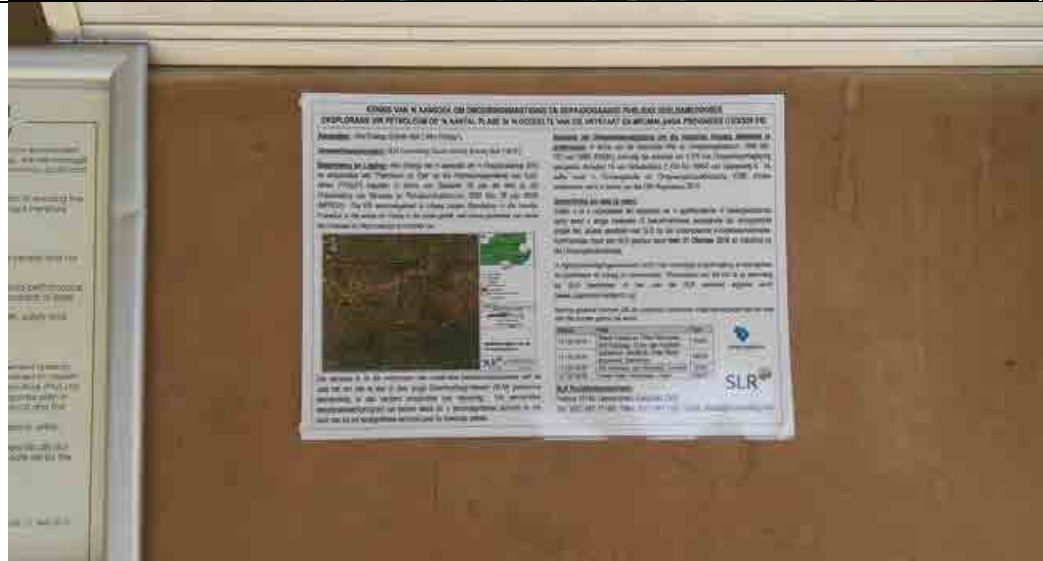
21  
September  
2016 –  
Mafube  
Local  
Municipality,  
Frankfort



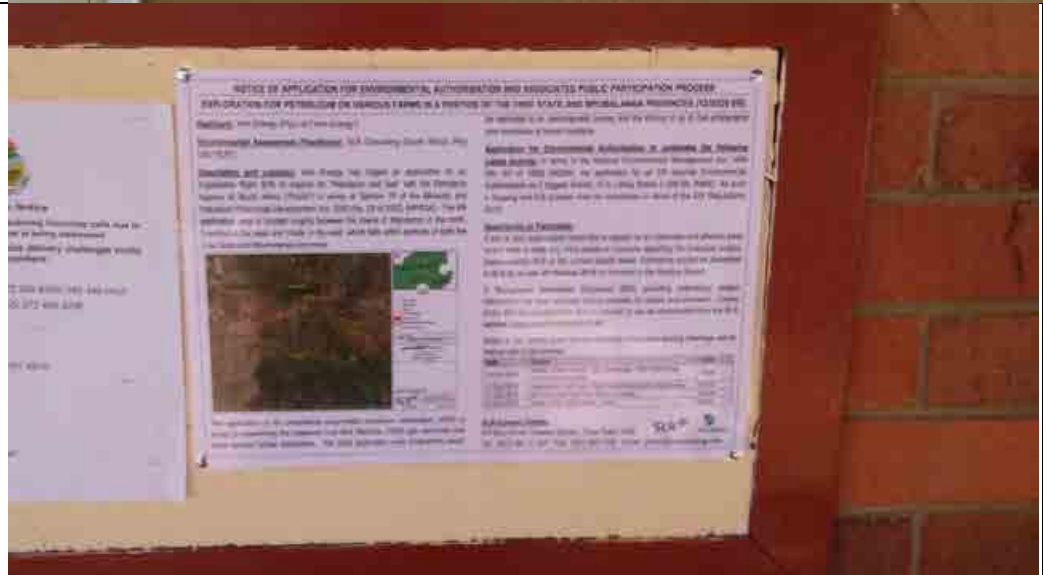
21  
September  
2016 –  
Heinkowitz  
Shop/post  
office,  
Cornelia



21  
September  
2016 – BKB  
Co-op,  
Cornelia



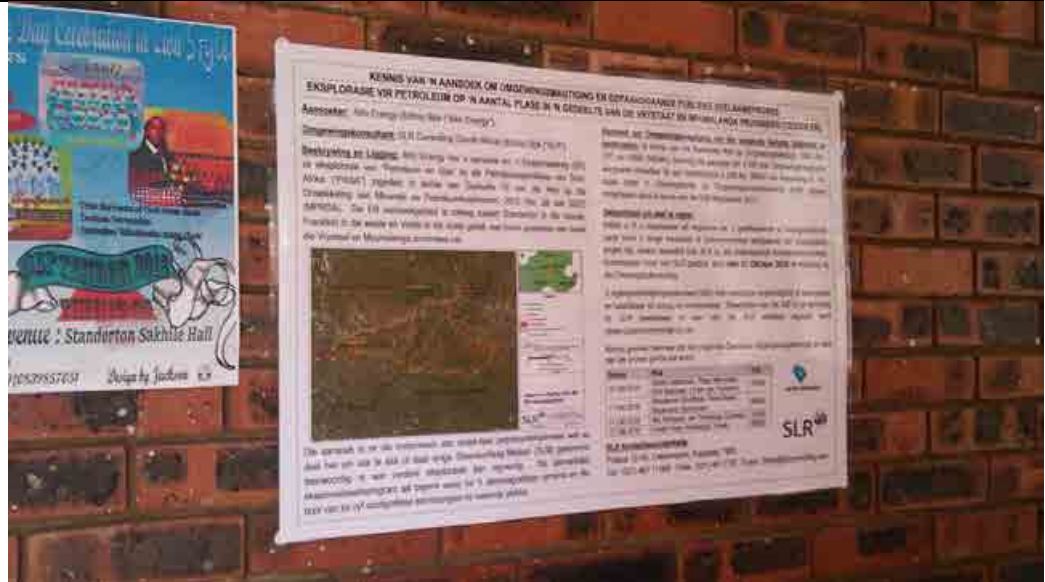
21  
September  
2016 –  
Cornelia  
municipality,  
Cornelia







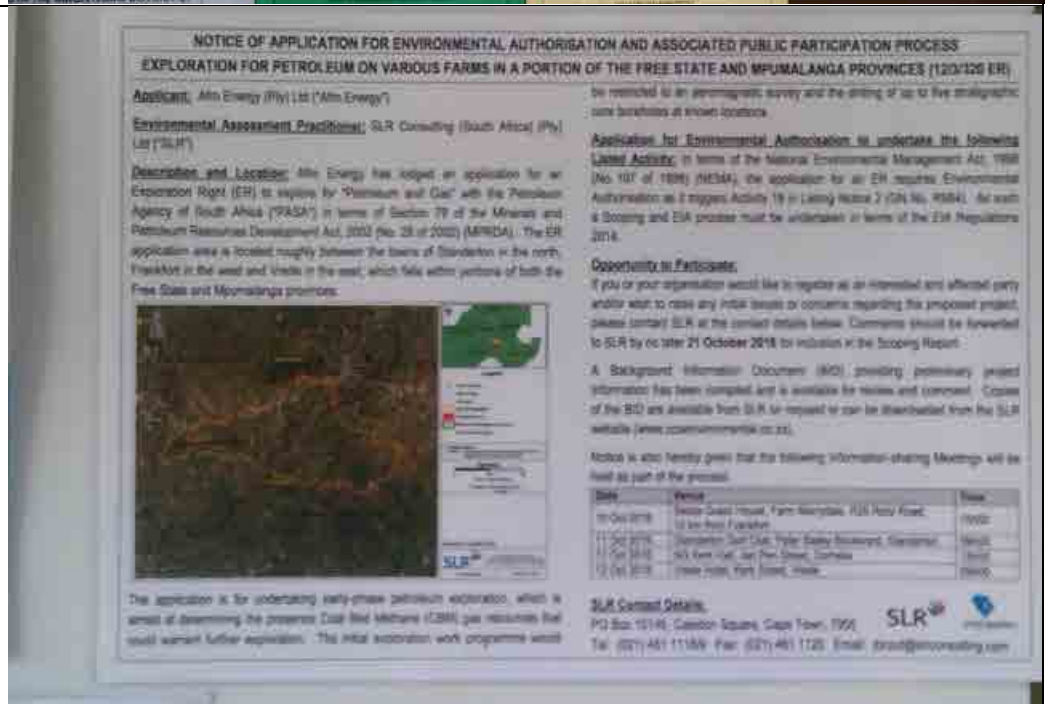
22  
September  
2016 –  
Lekwa Local  
Municipality,  
Standerton



22  
September  
2016 – Local  
Library,  
Standerton





22  
September  
2016 – Afgru  
Co-op,  
Standerton





## APPENDIX 5.6: PRESENTATION AND MINUTES OF INFORMATION-SHARING MEETINGS

**AFRO ENERGY (PTY) LTD**

**APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM  
ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND  
MPUMALANGA PROVINCES (320 ER)**


**INFORMATION-SHARING MEETING**

**October 2016**

(PASA Ref No. 12/3/320 ER)


### AGENDA

1. Introduction and Objectives of the Meeting
2. Presentations
  - Project Overview
  - Scoping and Environmental Impact Assessment (EIA) Overview
3. Question and Answer Session
4. Way Forward and Closure



### GROUND RULES


- Please turn off cell phones or silent mode
- Points of clarity only during presentations
- Please identify yourself and which organisation you represent (if applicable)
- Please stick to issue under discussion
- Please sign the Attendance Register
- Meeting is being recorded
- Notes being taken



### PURPOSE OF MEETING

- **Inform you about:**
  - > The application for an Exploration Right (ER)
  - > Proposed exploration activities
  - > Scoping and EIA process
  - > How you can participate in the process
- **Obtain input from you on:**
  - > Issues and concerns
  - > Input on environmental sensitivities & impacts






**AFRO ENERGY (PTY) LTD**

**PUBLIC CONSULTATION ON ER320/321**

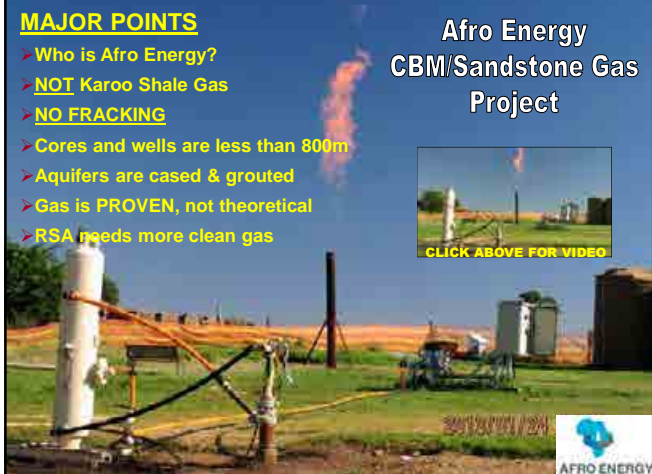

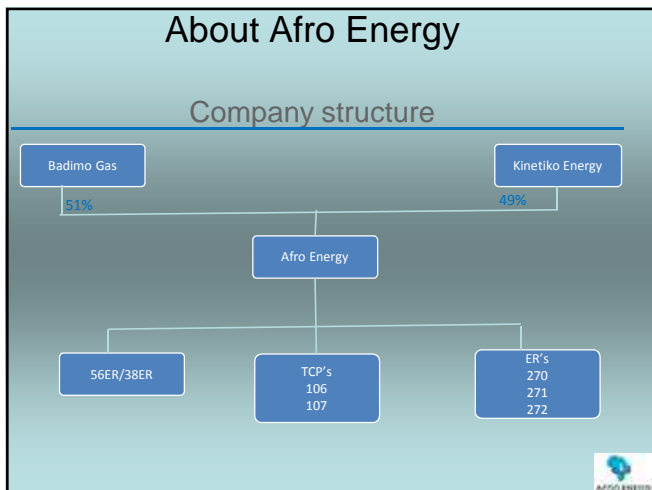
**MAJOR POINTS**

- Who is Afro Energy?
- **NOT** Karoo Shale Gas
- **NO FRACKING**
- Cores and wells are less than 800m
- Aquifers are cased & grouted
- Gas is **PROVEN**, not theoretical
- **RSA** needs more clean gas

**Afro Energy CBM/Sandstone Gas Project**



**CLICK ABOVE FOR VIDEO**

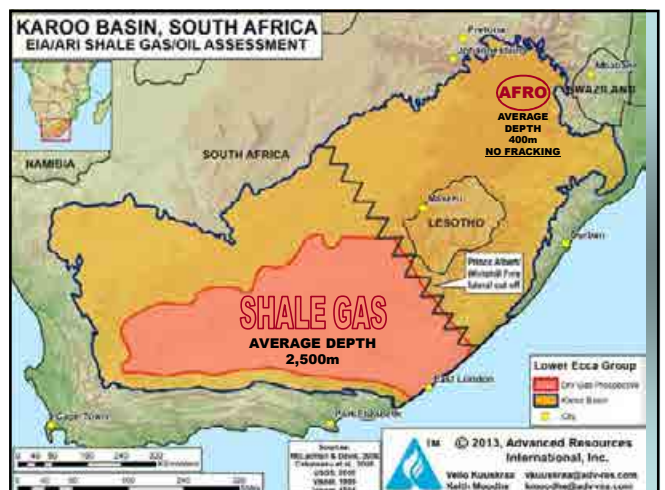
**About Afro Energy (continued)**

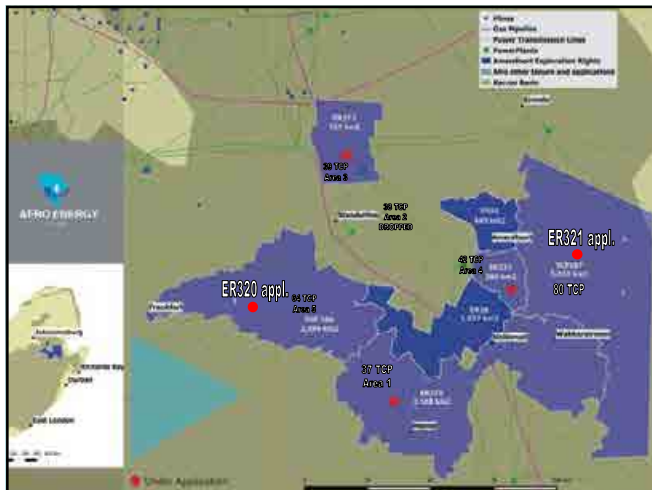
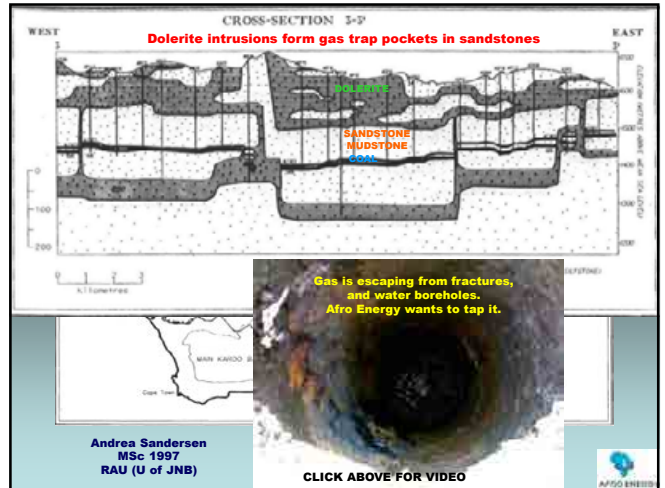
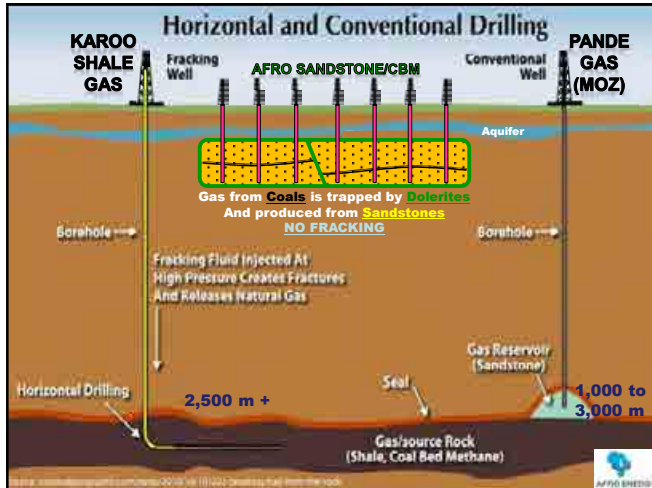
- Afro Energy is a gas exploration company incorporated in South Africa in May 2012
- The shareholders of Afro Energy are Badimo Gas (a predominantly Black owned company incorporated in South Africa in 2005) and Kinetiko Energy (a listed Australian company)
- Badimo and Kinetiko own a participating interest of 51% and 49% respectively in the company
- Currently the company holds exploration rights in Amersfoort (56ER) and in Volksrust (38ER), explored since 2011



**About Afro Energy (continued)**

- It holds TCP's 106 and 107 and ER's 270, 271 and 272
- Afro Energy is a first mover in South Africa of onshore gas exploration and development - a clean source of energy
- The company utilizes experienced and qualified technical personnel and management sourced from international markets



- ### Exploration-to-Production Process
- 1) TCP (Technical Cooperation Permit)
    - 1) Desktop study of previous work to determine prospectivity
  - 2) ER (Exploration Right)
    - 1) Drill Cores to establish gas resource
    - 2) Fly an Aeromagnetic survey to define faults and dykes
      - 1) 35m above ground (where possible), 50m line spacing
    - 3) Drill Permeability Test wells to determine gas producibility
  - 3) PR (Production Right)
    - 1) Drill gas production wells
    - 2) Produce natural gas for SA markets
      - 1) Power generation (quick-start for peak periods)
      - 2) Vehicle fuel (taxis, buses and lorries)
      - 3) Industrial use (mines, cement plants, bakeries, etc.)
      - 4) Agricultural use (greenhouses, chicken runs, processing)
      - 5) Domestic use (cooking, heating)







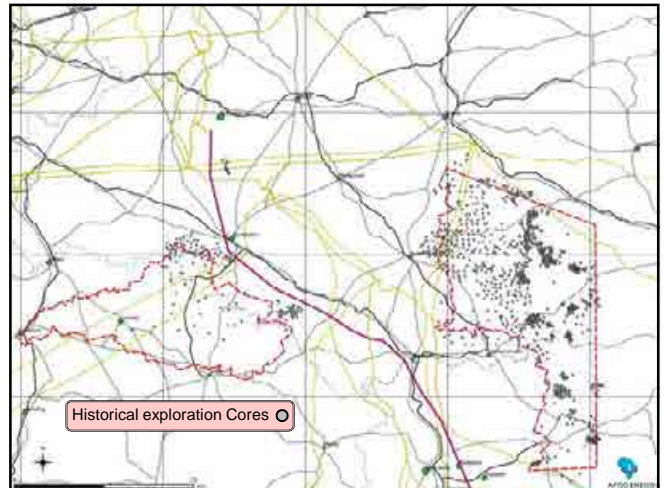
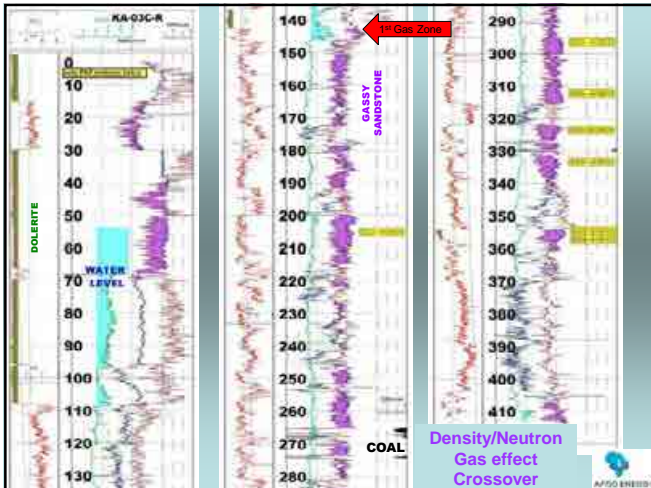
**KV-05C 196-199m**  
**Gas in Coal Core**



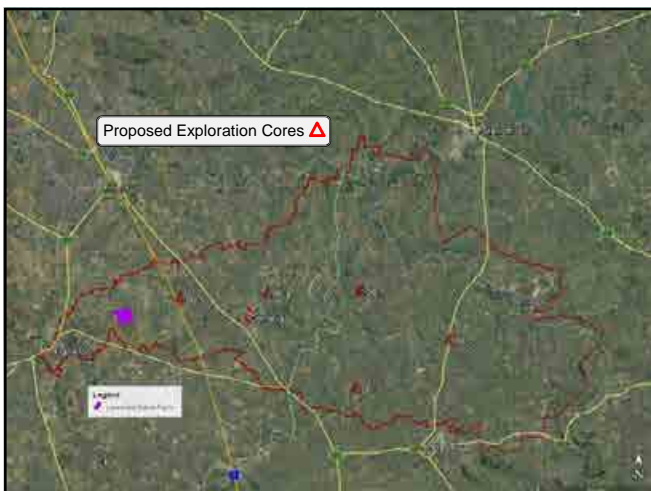
**KV-06C**

We have video-documented residual gas bubbling out of sandstones as well.  
 This has good permeability with **NO FRACKING**.

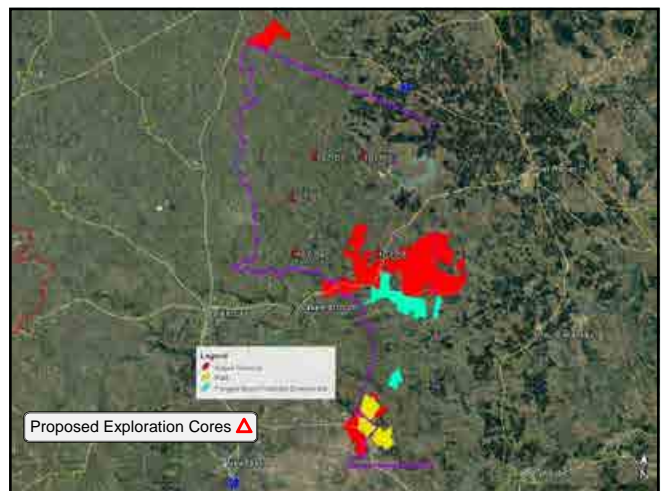
**Gas in Sandstone Core**



Historical exploration Cores ○

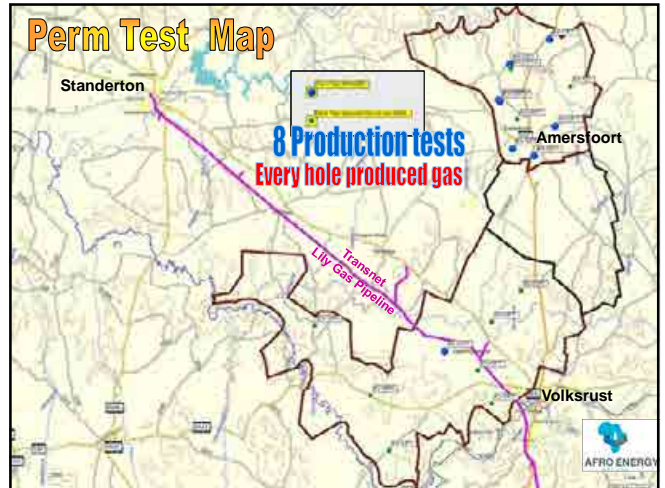


Proposed Exploration Cores ▲

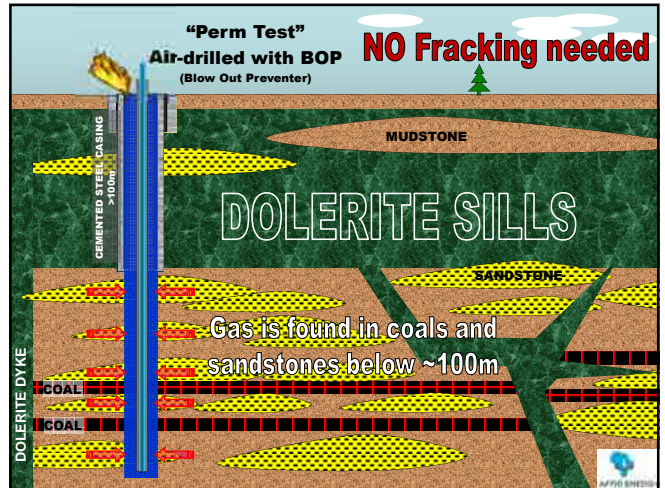


Proposed Exploration Cores ▲

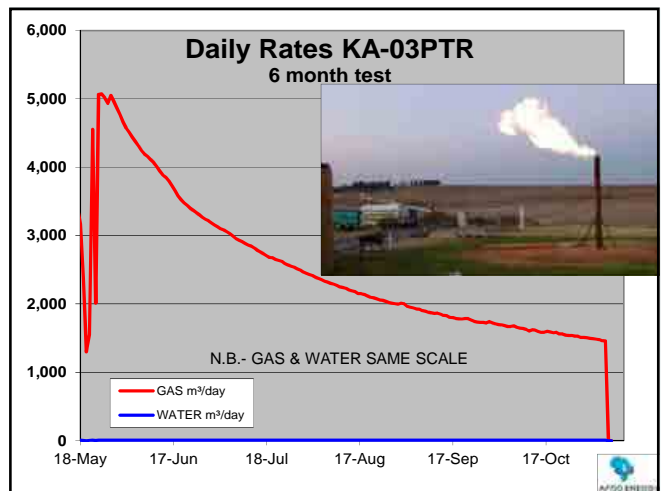
Rehabilitated core hole



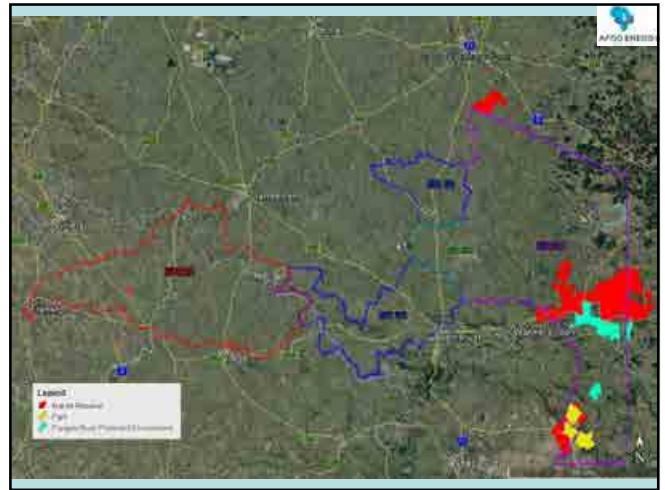
Permeability Test Drilling



Test Well









**SLR CONSULTING (SOUTH AFRICA) (PTY) LTD**

**SCOPING AND EIA OVERVIEW**

**LEGISLATIVE REQUIREMENTS**

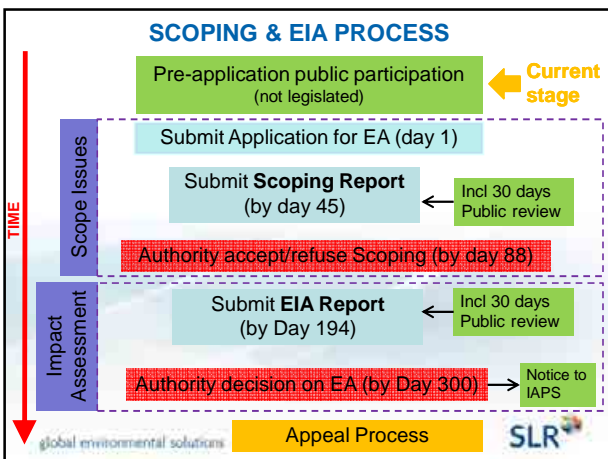
- Mineral and Petroleum Resources Development Act, 2002:
  - > The State is the custodian of all minerals and petroleum resources.
  - > Anyone can make application for a right to access minerals or petroleum, i.e. an **Exploration Right (ER)** in terms of Section 79 of the MPRDA.
  - > Afro Energy has lodged an application for an ER to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa (PASA - designated authority).
  - > PASA accepted the ER application on 13 July 2016.
  - > Requirement to comply with NEMA.

**LEGISLATIVE REQUIREMENTS**

- National Environmental Management Act, 1998 (NEMA):
  - > NEMA provides for the control of certain listed activities, which are prohibited until **Environmental Authorisation** is obtained.
  - > The application for an ER is a listed activity (Activity 18 in Listing Notice 2).
  - > A **Scoping and EIA process** is required to inform the authority as part of the decision-making process.
  - > The process and timeframes are defined in the EIA Regulations 2014.
  - > SLR has been appointed as the independent Environmental Assessment Practitioner.

**LEGISLATIVE REQUIREMENTS**

- Any ER issued under the MPRDA is specific and has limitations on the:
  - > Minerals / Petroleum;
  - > Work programme (proposed exploration activities);
  - > Extent; and
  - > Timeframe (initially issued for three years).
- The scope of the EIA is aligned to the proposed work programme.
- Any change or further work requires approval under both the MPRDA and NEMA.



**PRE-APPLICATION PUBLIC PARTICIPATION**

- Aim is to:
  - > Identify all landowners within the ER area and key stakeholders.
  - > Distribute project information to I&APs and receive initial comment.
- Landowner identification (ongoing):
  - > Deed search.
  - > Identification of contact details of trusts is still ongoing.
- Adverts, notices, letters, BID & meetings.
- Process is ongoing and will continue through the Scoping & EIA.

### SCOPING PHASE (OCT – DEC 2016)

Objective is to **identify the key issues** that need to be addressed in the assessment phase.

- Document the issues and concerns raised by I&APs.
- Detail what issues will be investigated further and how.
- I&APs will have 30 days to review the draft Scoping Report.
- **NB.** It is often not possible to address all issues at this stage.

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### KEY ISSUES IDENTIFIED TO DATE

- Land use:
  - > Preclude other land uses during drilling ( $\pm 1\ 000\ m^2$ ).
  - > Final hole location is flexible and can be adjusted to minimise disturbance.
  - > Access only with prior consent and in terms of a written landowner agreement.
- Biodiversity:
  - > Loss of vegetation and fauna habitat within footprint ( $\pm 1\ 000\ m^2$ ).
  - > Rehabilitation: re-establish the pre-exploration land use.



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### KEY ISSUES IDENTIFIED TO DATE

- Risk to water resources:
  - > Consumptive use ( $\pm 5\ 000\ l/d$ ).
  - > Groundwater contamination.
  - > Recycle water and collection of muds / cuttings using skips.
- Access and farm safety:
  - >  $\pm 5$  persons.
  - > Access only with prior consent and in terms of a written landowner agreement.
- Risks of possible future exploration and production.



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### EIA PHASE (JAN – MAY 2017)

- Objective is to **assess environmental impacts** in terms of their significance and to identify **measures to avoid, manage or mitigate** these.
  - > Define the activities and confirm potential risks/impacts.
  - > Obtain an understanding of environmental aspects & sensitivities of the area (specialist studies).
  - > Site specific impact assessments.
- Compile EIA Report, incl. Environmental Management Programme (EMPr).
- I&APs will have 30 days to review the EIA Report & EMPr.
- EIA/EMPr will inform authority decision (~ June 2017).

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### QUESTION AND ANSWER SESSION

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### WAY FORWARD

- Initial comment period closes on **21 October 2016**.
- Comments received will be included in draft Scoping Report.
- Next opportunity to participate:
  - > Draft Scoping Report comment period – **beginning of November 2016**.
  - > SLR will notify all registered I&APs.
- Please ensure you have signed the attendance register.

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**Town: Frankfort****Public Meeting Venue: Siesta Guest House****Date: 10/10/2016****Time: 15:00 PM****Attendance: See attached attendance register**

Anelle Lotter (AL) thanked everyone for attending the meeting. She introduced the project team and explained everyone's roles and responsibilities. She also provided an initial overview of the proposed project.

Don Ncube (DN) of Afro Energy gave a presentation on proposed project, including company structure, geology, exploration-to-production process, proposed core drilling and possible future activities (namely permeability test wells). Hendrik Burger (HB) provided technical input during the presentation.

Jeremy Blood (JB) of SLR provided an overview of the Scoping and EIA process focusing on the key legislative requirements, the Scoping and EIA process and the key issues identified to date.

Edwynn Louw (EL) recorded and took the minutes of the meeting.

Name	Affiliation	IAP Comment	Response
Pieter Des DuBasson	-	So there is no acid?	DN: No acid would be created during exploration or production process.
		If you come onto property, you actually do no damage? Will people live on the farm?	HB: Afro Energy would enter into a land access agreement with all directly affected landowners. Thus the landowner will have a say in access, accommodation, drill site location, etc. The staff complement usually consists of five drillers, a manager and foreman (HB). The drilling area would be fenced off to minimise impact. Once drilling is complete, the fence would be taken down and the land restored. PASA would be notified after drilling and rehabilitation is complete.
		How thick is the core?	DN: A core is about 20 cm in diameters. No blasting or mining would take place.
		Can we get a copy of the Scoping Report?	JB: All I&APs registered of the project database (including those present at the meeting) will be notified when the Scoping Report is available for review. It will be available in electronic and hard copy.
		Will you need to remove my mealies?	DN: Drilling would be undertaken in terms of a signed landowner agreement. Thus impacts to existing land uses would be minimised. Drill sites could be relocated or drilling could be delayed until after harvesting.
		Will farmers be able to use the gas?	DN: Every company needs a social and labour plan. Should Afro Energy find gas which is feasible to exploit, it would consider forming partnerships with landowners / farmers to purchase the gas.

GJ Hartman	-	Could you not find a South African company to work with instead of Australians?	DN: South African companies specialise in mining and lack the expertise in underground natural gas extraction. Kinetiko specialise in underground gas extraction.
		How did you find the farmers to allow you to do the drilling in Amersfoort? If you drill on my neighbour's farm but not on mine. Can I not get something?	DN: Afro Energy wants to build relationships with landowners. Landowners usually get paid R5 000 per core hole. However, should the project move onto permeability well drilling landowners would receive R25 000 per well per year. Afro Energy would only drill on a property where the landowner has allowed access.
		I don't believe you can drive a vehicle on gas.	DN: HB's bakkie uses gas. HB: A simple conversion can modify a petrol or diesel engine to burn gas. The vehicle is retrofitted with gas cylinders. The engine's performance is barely affected and the fuel economy is significantly increased.
Adel Mosh	-	What is the meaning of SLR?	JB: SLR is the name of the company undertaking the EIA process on behalf of Afro Energy. SLR is not an acronym.
		I thought you are going to employ many people like mining industry.	DN: CBM exploration is not mining and thus does not employ many people. Afro Energy would, however, train people to do work. Afro Energy is required to train skills for core drilling, as people with different skills are not readily available. There will not be large volumes of unskilled labour. JB: Should gas be found and the project move into the production phase, the potential for downstream industries and jobs is very big.

Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 10 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Frankfort



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
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Hendrik Burger	Afro Energy		079 719 5576	

Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 10 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Frankfort



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
JEREMY BLOOD	EAP	UNIT 39 ROELAND SQ CAPE TOWN	021 461 1118	jblood@slrconsulting.com
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G.J Hartman (Deona)	Henniesdeel	Postbus 222 Villiers 9840	0826890748	deonahartman@ vodamail.co.za
ABEL MOSH.	MAFUBE COUNCILLOR	2124 SUNRISE FRANKFORT 9830	082 787 5092	adelmosio@gmail .com.
Eduyan Louw	EAP	Cnr Rops and marbethfontein 2156	0713655538	elouw@slranguts.com

**Town: Standerton****Public Meeting Venue: Standerton Golf Club****Date: 11/10/2016****Time: 09:00 PM****Attendance: See attached attendance register**

Anelle Lotter (AL) thanked everyone for attending the meeting. She introduced the project team and explained everyone's roles and responsibilities. She also provided an initial overview of the proposed project.

Don Ncube (DN) of Afro Energy gave a presentation on proposed project, including company structure, geology, exploration-to-production process, proposed core drilling and possible future activities (namely permeability test wells). Hendrik Burger (HB) provided technical input during the presentation.

Jeremy Blood (JB) of SLR provided an overview of the Scoping and EIA process focusing on the key legislative requirements, the Scoping and EIA process and the key issues identified to date.

Edwynn Louw (EL) recorded and took the minutes of the meeting.

<b>Name</b>	<b>Affiliation</b>	<b>I&amp;AP Comment</b>	<b>Response</b>
Cellic Van der Linde	Landowner	Is there a radius that you will not drill from a river?	JB: Permeability test wells would require a Water Use Licence if they are drilled within 1 km of a river / wetland. With regard to core holes, the intention is to avoid drilling in or close to any rivers. This will be investigated in the EIA.
		How does drilling affect groundwater? Will my boreholes go dry?	HB: The first section of the hole is isolated from the aquifer by casing the hole to below the aquifer, which prevents contamination. Afro Energy is exploring for gas, not water. Thus the less water that is encountered the better. Environmentally friendly products (e.g. bentonite) are used to prevent the mixing of drilling fluids with groundwater and to seal the hole.
Casper Janse Van Rensburg	Landowner	On which farm do you flare?	DN: Farm Brakfontein (owned by the Swart family) near Amersfoort.
		How long does it take to get from the TCP to production right?	DN: The exploration phase can take six to nine years.
		The whole map you only drilling five holes. Why do you need the whole area?	JB: Exploration is a phased process. Initial exploration informs how exploration moves forward, i.e. focus areas for permeability test wells. Afro Energy may decide to relinquish areas that are not feasible, resulting in a smaller ER area. Thus initially the ER area is very large. Thereafter it may be reduced in size based on the results of exploration.  DN: One of PASA's requirements is that an applicant for an ER must apply for all the title deeds of all farms within the ER application area.



		What do you do with extracted water? What will you do with the water in future?	HB: For permeability test wells (possible future phase), water is stored in above-ground jojo tanks. Wastewater from permeability test wells drilled in the Amersfoort area is generally “clean”, only containing salt (sodium chloride). Afro Energy would consider using this water for commercial purposes. Volumes are small with 10 000 litres being extracted per month. This would could potentially be used by landowners.
		You said you will use 5 000 litres per day. But you said you extract 10 000 litres in three weeks. Where will you get that water from?	HB: 5 000 litres of water per day would be required for core hole drilling. The 10 000 litres related to the dewatering during permeability testing. Water is not used during permeability or production well drilling - air pressure is used in order to retain the sandstone's permeability.
		Where will the drillers stay?	DN: Staff would either on the farm (in accordance with a landowner agreement) or they would commute to site daily.
Roelof Van Wyk	Landowner	Anglo drilled boreholes and found gas near Amersfoort. They just sealed the hole.	AL: Anglo was more than likely exploring for coal. An ER is specific in terms of what mineral / petroleum resource can be explored. Anglo likely only had a right to explore for coal and not for gas.
		For drilling which requires water, how deep will you drill?	HB: It is estimated that approximately 5 000 litres of water per day would be required for core hole drilling. Actual volumes would depend on hole depth - drilling could be terminated after 5 m or could continue until 500 m.
		If you drill but find no gas, what do you do?	HB: The core hole would be seal with cement from the bottom of the hole to the surface. The stand pipe is normally cut off half a meter below ground (sometimes deeper as instructed by the landowner).
		If you drill during the rainy season, how will that affect the roads?	HB: Access would form part of the landowner access agreement. If damage is caused to roads, it would be Afro Energy's responsibility to repair.
		Who are the people you use for drilling. Will inspections be done?	HB: A sub-contractor would drill the core holes. HB as the site foreman will regularly inspect the site to ensure the drilling contractor complies with the land access agreement.

Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 11 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Standerfontein



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
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DAVID V.D. CINDE	Goedgefonde		082 418 1130.	
Theo Wicks	SLR	Zwattke Grove Hilton		

John Numbere





**Town: Cornelia****Public Meeting Venue: NG Church Cornelia****Date: 11/10/2016****Time: 15:00 PM****Attendance: See attached attendance register**

Anelle Lotter (AL) thanked everyone for attending the meeting. She introduced the project team and explained everyone's roles and responsibilities. She also provided an initial overview of the proposed project.

Don Ncube (DN) of Afro Energy gave a presentation on proposed project, including company structure, geology, exploration-to-production process, proposed core drilling and possible future activities (namely permeability test wells). Hendrik Burger (HB) provided technical input during the presentation.

Jeremy Blood (JB) of SLR provided an overview of the Scoping and EIA process focusing on the key legislative requirements, the Scoping and EIA process and the key issues identified to date.

Edwynn Louw (EL) recorded and took the minutes of the meeting.

<b>Name</b>	<b>Affiliation</b>	<b>I&amp;AP Comment</b>	<b>Response</b>
-	Landowner	Where does the water go that you remove? Can we use it and will we have to pay for it?	DN: For permeability test wells (possible future phase), water is stored in above-ground storage tanks. This could be made available for landowner use. No thought has been given to whether landowners would need to pay for this water.
-	Landowner	You are drilling for gas, not coal? Will you leave the coal if you find it?	HB: Coal, other than in the core, will not be removed from underground. Afro Energy has only applied for an ER to explore for gas, not coal.
-	Landowner	What do you do with the cores? Will you tell other people about the coal?	DN: Cores are stored before being submitted to the Council for Geo-sciences. It is not in Afro Energy's interest to inform other companies about any coal deposits, as Afro Energy's interest is the gas and it is the coal that creates the gas.
		Do you have the right to drill? If I say no will you still drill on my property?	DN: Afro Energy currently does not have a right to drill. Afro Energy has applied to PASA for an ER. If a directly affected landowners says 'no' to drilling, then the borehole would need to be relocated. Afro Energy is hoping to establish a partnership with the directly affected landowners.
		So that gas is not mining?	DN: CBM extraction is not mining. Afro Energy is only proposing to drill five boreholes, whereas mines would blast and remove rock.

Name	Affiliation	I&AP Comment	Response
-	Landowner	What are Rhino Oil and Gas doing? They are on the same farms as you?	DN: Rhino is a different company. Legally, two different companies cannot hold a right for the same resource over the same property. However, should Rhino have applied for an ER over the same properties this issue would need to be taken up with PASA in order to correct the issue of overlap. Afro Energy has had issues before with overlapping ER areas.
-	Landowner	Will the crime not increase?	DN: Experience from exploration undertaken in Amersfoort is that the presence of the drilling staff on site in fact provides additional security. Farmers are safer as they are not alone on their farms.
-	Landowner	What if everyone refuses to let you drill?	DN: Landowners have the right to associate as well as the right to say 'no'. If a directly affected landowners says 'no' to drilling, then the borehole would need to be relocated.
-	Landowner	How many gas bottles will I get a month?	DN: This will need to be negotiated if exploitable gas is discovered.
-	Landowner	If you find gas and get all the rights, what is the end product? Are there gas plants?	DN: If Afro Energy found a significant gas deposit and obtained a Production Right, it would identify a potential end user in order to sell the gas. Distribution to the end user can be via underground pipes, road or rail. The gas would need to be compressed for transport / transfer.
-	-	Are any gas plants set up?	DN: Production wells are small, self-contained units, which are connected to a facility for compression, before transfer to the end user.
Gert Botha	Landowner	On my farm if I have five boreholes to a depth of 3-6 m. You are proposing to drill to 300-500 m, which will impact my water. What will you do?	DN: The proposed coring would not make groundwater disappear. This is guaranteed. Afro Energy would only drill in a location that is agreed to with the landowner and in term of a land access agreement, which would ensure that existing land uses are not disrupted.
		With regard to the transportation of the gas, will you take responsibility for damaging the roads?	DN: Access routes would be discussed and agreed to with landowners in order to minimum disruptions. New roads may be created, which the landowner could utilise. Afro Energy has in the past help landowner with the fixing of gates, roads, etc.
-	Landowner	How do you seal the borehole?	HB: The boreholes would be capped and sealed with cement from the bottom of the core hole to the top.
-	Landowner	You plan to drill five boreholes in the area or per farm?	HB: Afro Energy is proposing to drill five core boreholes in the whole ER application area. Specialist input, and landowner, will inform the placement of the boreholes.

Name	Affiliation	I&AP Comment	Response
-	Landowner	Do you know the people where you are planning to drill? Are they existing boreholes?	HB: Afro Energy has discussed possible borehole locations with all directly affected landowners. All core holes would be new holes; there would be no re-drilling of historical holes.
-	Landowner	How big will the fenced off area be?	HB: Approximately 30 x 30 m.
-	Landowner	What will you do with the water? You will hit water. How much water is produced? Can the farmers use the water?	HB: Core holes would be would be cased and cemented to depths below the aquifer, thereby protecting the aquifer. During permeability testing (a possible future phase), water extracted from the well is stored in jojo tanks. The permeability well at Farm Brakfontein (near Amersfoort) for example produces 10 000 litres in three weeks. The farmers would use the water.
-	Landowner	What is the economic lifespan of the boreholes?	DN: The economic life of a well is highly variable (10 – 30 years?), e.g. a well may provide gas from the sandstone layer for three years, then the mudstone layer for a year, and then the coal layer for 10 years. Well would recharge over time.
-	Landowner	Can you guarantee the water will not be contaminated? That is what happened in America.	HB: Yes. Afro Energy would ensure the holes are properly cased and cemented to depths below the aquifer.
-	Landowner	What is the benefit to the farmers on whose farms you currently drill?	HB: Compensation would include a once off fee of R5 000 for core drilling. For permeability wells, Afro Energy currently pays R25 000 per well per year.
-	Landowner	Have there been any problems with the historical boreholes? We only hear good things.	HB: In the past drilling was undertaken not knowing there was gas present. Some historical boreholes have not been properly sealed.
Jeremy Blood	SLR	Why is the water bubbling in the historical holes? Was the drilling method different (in terms of well closure or casing through the water table)?	DN: The historical boreholes were not closed or sealed properly, and as such some farms have boreholes where gas is being emitted (some for the past 30 years). This provides evidence that the geology is saturated with gas, which wants to escape. Thus the gas can be easily extracted with drilling.
-	Landowner	How did you decide the locations for drilling?	HB: The preferred drill sites were identified based on an analysis of the data from the historical holes. Protected area were excluded. Specialist input, and landowner, will inform the final placement of the boreholes.



Name	Affiliation	I&AP Comment	Response
-	Landowner	Is the law supreme? How enforceable is it? Is money set aside for it?	<p>HB: If Afro Energy does not comply with the law, it could lose its ER.</p> <p>JB: All boreholes would need to be properly sealed and rehabilitated. As part of the ER application process, Afro Energy must provide PASA with a financial guarantee (e.g. bank guarantee) to ensure they can meet their responsibilities regarding rehabilitation.</p>
-	Landowner	Before they drill the cores will the groundwater specialist be there?	AL: A groundwater specialist study will be undertaken as part of the EIA process prior to any drilling taking place.
-	Landowner	Problems have been experienced in the past where contactors come onto site without notifying the landowner.	DN: Only five people would be on site at any time. Landowners would be notified as per the land access agreement.
-	Landowner	<p>With regard to the Transnet gas pipeline, it was promised that they would rehabilitate wetlands; which never happened.</p> <p>People still come to site, leaving open gates, damaging gates, etc. I have now refused access across my farm. Transnet can use the pipeline servitude. Promises are made, but then people are replaced and promises are never fulfilled. You never know who you are dealing with and you do not feel safe. My opinion now is to not provide access.</p>	DN: Afro Energy would not drill unless an agreement is reached with the landowner. Afro Energy uses a full time onsite foreman to ensure the drilling contractor complies with the land access agreement.

Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 11 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Cornelia



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
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Innocent Linda Mokoeneng		471 Mokaba Village	0786313927	
Neombi fuchi Cathrine Nhiapo		566 mokaba village	0712383055	-
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Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 11 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Cornelia



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
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Nkosi ZAKHELE JUNE	Looking for a job	348 Mokaba Village Bethany's Street	0843988517	
Lucky Dhadha	Looking for a job	120 Roman's Street	0747500967	
Tsotetsi William	Looking for a job	675 Rethabile	0749338912	pwtsotetsi@outlook.com
Bafana Molebete	Looking for a job	462 Phomolog	0786879378	
Mokgale Makhalemele	Looking for a job	481 Mokaba	0820922559	
Jacob Gwebu	Looking for job	7012 Magashole 258 Mokaba Village	078 361 0525 0785906168	
Karool Gwebu	Looking for job		0795172161	

Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 11 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Cornelia



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
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Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 11 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Cornelia



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
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Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 11 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Cornelia



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
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H. LOURENS	Boer	Postbus 132 FRANKFORT	0829667130	/





Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 11 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Cornelia.



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
NHLAPO NKOSANA	CORNELIA		0844767052	
MOTHA BONGANI	CORNELIA		0848048025	
MOKOENA ALICE	CORNELIA		0737656418	
Johannes Masileny	Cornelia		078 017 3568	
MUZIVAKHE NHLAPO	Cornelia		0761394555	
Cathrine Nhlapo	Cornelia		0712383255	

**Town: Vrede****Public Meeting Venue: Vrede Hotel****Date: 12/10/2016****Time: 09:00 AM****Attendance: See attached attendance register**

Anelle Lotter (AL) thanked everyone for attending the meeting. She introduced the project team and explained everyone's roles and responsibilities. She also provided an initial overview of the proposed project.

Don Ncube (DN) of Afro Energy gave a presentation on proposed project, including company structure, geology, exploration-to-production process, proposed core drilling and possible future activities (namely permeability test wells). Hendrik Burger (HB) provided technical input during the presentation.

Jeremy Blood (JB) of SLR provided an overview of the Scoping and EIA process focusing on the key legislative requirements, the Scoping and EIA process and the key issues identified to date.

Edwynn Louw (EL) recorded and took the minutes of the meeting.

Name	Affiliation	I&AP Comment	Response
-	Landowner	Why was this not properly advertised?	AL: The proposed project and EIA process were advertised in local newspapers, notices were erected at various venues in Frankfort, Standerton, Cornelia and Vrede. Letters / BID were also sent to identified landowners and key stakeholders.  EL: Adverts were placed in the Frankfort Herald, Kosmos news and Vrede Record.
Daan	Landowner	Who are the major shareholders of this company?	DN: Afro Energy shareholders include Badimo Gas (51%) and Kinetico Energy (49%).
		Is Kinetico South African company?	DN: Kinetico Energy is an Australian Listed Company.
		You are not welcome here. Do you think you are welcome here?	DN: We are here to merely provide information on the proposed project. We are not forcing you to do anything.
-	-	If we all feel we don't want you here, why are you telling us? We don't want you here.  The only clean gas is solar and wind.	DN: I am only here to explain that Afro Energy has lodged an application for and Exploration Right (ER) and provide you with the necessary information to make an informed comment. You have the right to associate or disassociate with the proposed project.
		How much water do you need to drill?	DN: During drilling an estimated 5 000 litres of water would be required per day.
		What do you do with the sodium chloride water?	DN: Wastewater from previous permeability testing was stored in jojo tanks. This water was tested before being reused / disposed of depending on the quality.

Name	Affiliation	I&AP Comment	Response
-	-	Why must you drill on our farms? Why can't you drill at coal mines?	DN: CBM is not compatible with coal mining. In fact, some of the opposition against gas exploration has been from the coal industry as gas is quick and cheaper. Coal mines have, however, approached us in the past to remove gas from coal mines due to safety issues related to the gas.
-	-	You have drilled on my farm Platberg in Amersfoort. You pay R1 000, while others pay R30 000.	DN: Afro Energy has not drilled on the Farm Platberg. If I had drilled on the farm Platberg, I would know you personally
Willem Louw	Farmer	You got permission from PASA to purchase a block?	DN: Afro Energy did not buy a "block". Afro Energy applied for and obtained a Technical Co-operation Permit (TCP) from PASA. We are now applying for an ER. Afro Energy currently has no rights for the ER application area.
		You are not a Shell or BP? Where does your money come from?	DN: All the money used in previous exploration activities in the Amersfoort and Volksrust areas has been Afro Energy's. We have used our own money.
		How did you determine that this area has gas? You have straight lines on the map.	DN: Afro Energy studied historical core hole data, which is available from the Council of Geoscience.
		Did you do an airborne survey? How will you determine where to drill the hole?	DN: Afro Energy has not undertaken an airborne survey yet. The proposed core hole sites are based on the historical data.
		Previously people have come here, told us things, and have not told us the truth. If you don't tell the truth, it will not work.	DN: I am here to tell the truth; no seismic surveys are proposed. Afro Energy currently work with numerous farmers in the area, who can confirm what is proposed. DN believes in good corporate governance.
		You show nice pictures of equipment. The farmers must understand what will be on their farms. What about security issues?	DN: Drilling would only proceed once a land access agreement has been agreed to with the landowner. This would ensure that access and drilling is undertaken in areas and in a manner that minimises the potential impact on the landowner.  DN: Five staff would be required to operate the drill rig. Landowners have previously indicated that the presence of the drilling crew in fact makes them feel safer.
-	-	We don't want to take any risks.	DN: I am not here to force anyone to do anything. It is freedom of association.
-	Farmer	I understand there must be cheaper energy. I see that Afro Energy was registered in 2012. How did Afro Energy get the right to apply for an ER? Is it corrupt? There is no info on your website.	DN: I have been involved in CBM since 2005. Afro Energy has made an application for something that has never been done before in South Africa. I need to make sure I protect the rights for this country, which is why Badimo owns 51%.

Name	Affiliation	I&AP Comment	Response
		South Africa is tired of companies not doing the right thing. Be professional. How did you get the tender?	DN: There was no tender process, as it is not a tender. Government has very little knowledge of what CBM entails. Afro Energy applied for the right.
Hillary Hill	VKB	I have a theory about why there is currently so much exploration in this area. Currently the Department of Agriculture has new legislation coming in to protect agricultural land. What is the point of having energy security, if we have no food security?	DN: Food security is very critical. Drilling would only take place on a farm were a relationship existed with the landowner. If a landowner does want drilling on their farm, Afro Energy will "walk away". Drilling would not be undertaken in areas where the landowner does not want drilling to take place.
		I am concerned we are opening the gates for future exploration. I am not concerned about you coming here, but am concerned about other companies coming in and fracking.	DN: CBM exploration is new in South Africa. Afro Energy is not proposing to frack. Afro Energy has been successful in Amersfoort; I am not here to deceive you. Afro Energy can "walk away", but it cannot be guaranteed that another company will not come thereafter and apply for an ER. Credibility is very important - I am a director of listed international companies and the Chairman of the Social and Ethics Committee in South Africa.
		In whole area, how many holes do you want to drill?	DN: Afro Energy is proposing to drill five core boreholes.
		I know SLR is undertaking an EIA process for another company. Why can't Afro Energy also do seismic surveys to narrow down the area for drilling, without undertaking an invasive process as proposed?	DN: The ER application area is extensive. Seismic surveys can be considered to be invasive. The proposal is to drill five core boreholes in order to verify the historical data. The location of these five core holes is based on the interpretation of the historical data. An aeromagnetic survey is also proposed to determine, inter alia, where dykes are located.  JB: It is important not to confuse and mix up the different exploration projects in the area, as different activities are being proposed.
		Can government force farmers to allow drilling on their farms?	AL: If the gas is identified as a strategic national asset, government could enforce it (e.g. though expropriation).
-	-	Why would farmers say yes to drilling and take the risk?	DN: Afro Energy currently pays R5 000 per core bore and R25 000 per permeability well per year. Remuneration for production wells would need to be determined if project moved onto production. Farmers could also benefit by using the gas for farming (e.g. converting tractors to gas).
		How large is the gas resource?	DN: The size of the gas resource is currently not known. Exploration (namely permeability test wells) would ultimately inform the size of the resource.

Name	Affiliation	I&AP Comment	Response
		What is the cost per well?	DN: Afro Energy can drill on onshore well for R 2 million. Onshore drilling is different to drilling an onshore well. Drilling an offshore well costs in the order of USD 500 million per well.
		How can you ensure water is safe?	DN: It is required by law. The boreholes would be cased and cemented to depths below the aquifer.
-	-	The right is only valid for nine years.	AL: Exploration can last for up to nine years, i.e. an initial three year period, with a further possible three periods of two years each. Thereafter Afro Energy could apply for a Production Right.
-	-	Will Afro Energy sell the project off to a company in Qatar?	DN: Afro Energy has no intension to sell the project. The intention is for Afro Energy to apply for the Production Right.
-	-	So water is abstracted to extract gas. What happens if it's a lot of water? The water table will drop and we will not have water. We had this issue in Bethal. People need to be careful that we do not lose our water.	HB: The freshwater table is shallow and is protected. The water that is abstract is dirty water from a deeper aquifer. The two aquifers are not linked as there is dolerite between the shallow and deep aquifers.  JB: Dewatering is a key issue that would need to be considered should the project move onto production. The results of possible future exploration (e.g. permeability testing) would inform the volume and quality of any dewatering that would be required. The assessment of potential impacts associated with any future exploration or production activities would be undertaken as part of a future EIA process, which would include investigations into possible groundwater impacts.
-	-	Do you have a guarantee that if my water disappears you will compensate me? The mines have polluted all the water and nobody looks out for the farmers. Who will take responsibly for that?	DN: Wastewater from permeability testing (not part of the current application) is stored in above-ground jojo tanks. Exploration in Amersfoort has shown the wastewater contains NaCl. It is possible to treat the water for agricultural use or aquifer replenishment. This would need to be further investigated.
-	-	If they drill and find no gas, but find good coal. What will happen? We know you will tell someone and they will mine it.	AL: Afro Energy has only applied for an ER for Petroleum and Gas, not for coal. Thus, Afro Energy would have no right to mine coal.
-	-	Can you not drill in dry areas where there is no water? Can you not do seismic surveys to find dry areas.	DN: All wells drilled in the Amersfoort and Volksrust area have produced water (but not much).
-	-	What is the risk of veld fires from these holes?	DN: Blow-out preventers (BOP) are used on permeability and production wells in order to reduce the risk of a blow-out and probability of fires.  HB: If gas is found in a well, it is sealed and capped to ensure no gas escapes from the well.

Name	Affiliation	I&AP Comment	Response
-	-	If you had your own farm? Would you take the risk and why?	DN: If I had an access agreement, which stipulated the conditions for drilling, I would allow drilling on my farm.
		What do we get out of it?	HB: Afro Energy currently pays R5 000 per core bore and R25 000 per permeability well per year. Remuneration for production wells would need to be determined if project moved onto production.
-	-	Although you are not using chemicals to break up the (fracking), the removal of water amounts to the same thing, i.e. breaking rock to release the gas	DN: The formation is not “broken” during dewatering. JB: Water is only removed to lower the pressure in the formation in order to release the gas. One of the disposal alternatives for this water is re-injection back in the formation. HB: Dewatering is not always required to release the gas, as has been experienced in Amersfoort where gas is released without the pumping water.
-	Farmer	I have four boreholes on my farm from pervious coal mining exploration. Landowners should not be so scared of these boreholes.	-
-	-	We are not allowed to irrigate using groundwater. We have to protect the groundwater, so why can you contaminate the water. How can government allow you to do this?	DN: Groundwater is protected by casing and cementing boreholes to depths below the aquifer.
-	-	If you dewater, fresh air can come into contact with the sandstone, which cause it to degrade resulting in sink holes. We are concerned of the impact in 20 years' time.	DN: It is unlikely that sinkholes would develop. Afro Energy is currently only proposing to drill five boreholes. Afro Energy has undertaken permeability tests in the Amersfoort area, and gas is flowing out with minimal dewatering. HB: Afro Energy has not experienced the creation of sinkholes in Amersfoort over the past six years.

Name	Affiliation	I&AP Comment	Response
-	-	You should have already determined what the impacts are.	<p>JB: Concerns regarding future exploration and production activities are recognised and acknowledged. However, exploration is a phased process where the findings of one phase inform the details of future phases. Thus without undertaking the initial exploration as proposed (i.e. boreholes) and possible future permeability tests, it is not possible to confidentially assess potential future impacted related to production. Only once the geology and the volumes and quality of dewatering are known can one confidently assess future production impacts. Future exploration and production activities would require further approval. If there are risks it is our obligation is identify these and assess accordingly.</p> <p>DN: All we can tell you now is what we currently know. I don't want to predict, because I don't want to be seen as having lied to you if I am wrong.</p> <p>AL: This is an introduction meeting; the impacts still need to be assessed. This EIA is focused on the initial exploration phase (core boreholes and aeromagnetic survey). Afro Energy would only be allowed to drill the core holes if they get approval. If landowners say 'no', then they would need to relocate the borehole.</p>
-	-	How can you proceed with drilling without an EIA?	JB: SLR is currently undertaking the EIA process for the proposed exploration activities.
-	-	So if you have baseline data on water table levels, and it drops in five years you will say then?	AL: Afro Energy would be required to monitor water levels and test water quality regularly.
-	-	If everyone says 'no' what will you do?	HB: If all landowners refused access, Afro Energy would consider "walking away", but it cannot be guaranteed that another company will not come thereafter and apply for an ER. It is Afro Energy's corporate decision to not force anything.
-	-	How can we get more information on the proposed project, because many people didn't even know about these meetings	<p>AL: What will help facilitate the distribution of information? Could we use the local farmers WhatsApp group?</p> <p>Hilary Hill: VKB can distribute project information if requested by the farmers.</p>
-	-	Why is only one company proposing to undertake this exploration? We have no choice. Why can't there be ten companies and we choose the best? Everything is about competition.	<p>JB: Everyone has the right to apply for an ER for a particular mineral / petroleum resource.</p> <p>DN: Afro Energy applied for the ER for gas.</p>



Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 12 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Vrede



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Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 12 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Vrede



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
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Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 12 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Vredersburg



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Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 12 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: Vredde



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
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Project: 722.01083.00003/4

SLR Company: SLR South Africa

Date: 15 October 2016

Meeting: Afro Energy Preliminary Public Meetings

Town Venue: 2012



Name and Surname	Interest in project/Affiliation	Postal address	Contact numbers	E-mail
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Frans Oederen	Ever ads	Bus 352	6722146200	janine@zippnorth.co.za







**APPENDIX 5.7: CORRESPONDENCE RECEIVED DURING THE PRE-APPLICATION PUBLIC PARTICIPATION PROCESS**

## Edwynn Louw

---

**From:** Robert Davel <robert.mpl@mweb.co.za>  
**Sent:** 20 September 2016 03:43 PM  
**To:** Jeremy Blood; Gerald Smith  
**Cc:** Nic Opperman Agri SA  
**Subject:** registration as affected party

Good day Mr. Jeremy Blood.

Mpumalanga Agriculture is one of nine provincial affiliates from Agri SA. On our side we host 35 Farmers Associations in Mpumalanga.

Our aim is to assist our members in their task of sustainable food production.

We are definitely not in favour of this application for exploration rights on such a big area without a specific goal. At this stage we already oppose the similar application from Rhino Oil and Gas.

Please note our registration as interested and affected party in this application by Afro Energy as copied below.

**AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)**

This letter provides formal notification that Afro Energy (Pty) Ltd (Afro Energy) has lodged an application for an **Exploration Right** (ER) to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa (PASA) in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA).

**Please confirm our registration as affected party by e-mail.**

Kind regards

Robert Davel  
Hoofbestuurder / General Manager  
Mpumalanga Landbou/Agriculture  
Tel: 017 - 819 1295  
Fax: 017 - 819 1297  
Postnet Suite 1869  
Privaatsak X9013  
Ermelo  
2350



## Edwynn Louw

---

**From:** Jack Armour <jack@vslandbou.co.za>  
**Sent:** 22 September 2016 08:30 AM  
**To:** Edwynn Louw  
**Cc:** Jacobus Stroebel; Gernie Botha  
**Subject:** FW: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)  
**Attachments:** 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH.pdf

Dear Edwynn

Could you kindly send us a .KZM of the area for which the EA is registered? As well as any further documentation – i.e. please register us a an IAP.

Regards,  
Jack

**JACK ARMOUR** (*PhD, Ag.Econ. UFS 2007*)  
Operations Manager – Land Reform, Natural Resources, Farm Management & Infrastructure  
*Bedryfsbestuurder – Grondhervorming, Natuurlike Hulpbronne, Boerderybestuur & Infrastruktuur*  
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---

**From:** Sandy La Marque [mailto:sandy@kwanalu.co.za]  
**Sent:** 21 September 2016 08:58 AM  
**To:** Jack Armour; Robert Davel  
**Subject:** FW: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

FYI

---

**From:** Edwynn Louw [mailto:elouw@slrconsulting.com]  
**Sent:** Tuesday, September 20, 2016 11:46 AM  
**Subject:** AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

## Edwynn Louw

---

**From:** Bradley Gibbons <bradleyg@ewt.org.za>  
**Sent:** 26 September 2016 06:11 PM  
**To:** Edwynn Louw  
**Subject:** RE: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

Dear Edwynn

Please also register me as an interested and affected party for this application

What is the latest news of the AfroEnergy application that Matthew Hemming was involved with in the Memel area in 2013?

Can I please have a .kml file or .shp file of this area?

Regards  
Bradley

**Bradley Gibbons**  
**Senior Field Officer, Threatened Grassland Species Programme**  
**Endangered Wildlife Trust**  
T + 27 34 312 9302 | C + 27 82 566 5803 | F + 27 86 517 8872  
Email: bradleyg@ewt.org.za | Web: www.ewt.org.za | Skype: gibbons.za  
Postal Address: P O Box 8800, Newcastle, KwaZulu-Natal, 2940, South Africa



Physical Address: Building K2, Pinelands Office Park, Antelope Road, Modderfontein, 1609  
Postal Address: Private Bag X11, Modderfontein, 1645, Johannesburg, South Africa

*This E-mail message and its attachments are subject to the disclaimer published at <http://www.ewt.org.za>*

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**From:** Edwynn Louw [mailto:[elouw@slrconsulting.com](mailto:elouw@slrconsulting.com)]  
**Sent:** 23 September 2016 10:23  
**To:** Edwynn Louw <[elouw@slrconsulting.com](mailto:elouw@slrconsulting.com)>  
**Subject:** AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

## Edwynn Louw

---

**Subject:** FW: IUCN calls for sacred lands to be No Go for destructive industries

---

**From:** Judy Bell [<mailto:judybell@mweb.co.za>]

**Sent:** 27 September 2016 01:14 PM

**To:** Matthew Hemming; Stella Moeketse; [ERSungu@eims.co.za](mailto:ERSungu@eims.co.za); William Berry; Ntsako Baloyi; [KZNMotuoane@eims.co.za](mailto:KZNMotuoane@eims.co.za); [mail@eims.co.za](mailto:mail@eims.co.za); [brian@eims.co.za](mailto:brian@eims.co.za); [FSMotuoane@eims.co.za](mailto:FSMotuoane@eims.co.za); [nobuhle@eims.co.za](mailto:nobuhle@eims.co.za); Theo Wicks

**Cc:** [Seashalegas@csir.co.za](mailto:Seashalegas@csir.co.za); 'Frack Free SA'; 'Bobby Peek'; 'Catherine Horsfield'; Nicole Loser; 'Robyn Hugo'; [robs@groundwork.org.za](mailto:robs@groundwork.org.za); [rico@groundwork.org.za](mailto:rico@groundwork.org.za); [sviljoen@wwf.org.za](mailto:sviljoen@wwf.org.za); 'Sissie Matela'; 'Bradley Gibbons'; [samsonp@ewt.org.za](mailto:samsonp@ewt.org.za); 'Cobus Theron'; 'Doug Burden'; 'Jenny Longmore'; [act@frackfreesa.org.za](mailto:act@frackfreesa.org.za); [health@frackfreesa.org.za](mailto:health@frackfreesa.org.za); [films@frackfreesa.org.za](mailto:films@frackfreesa.org.za); [vanreenen@frackfreesa.org.za](mailto:vanreenen@frackfreesa.org.za); [water@frackfreesa.org.za](mailto:water@frackfreesa.org.za); [zululand@frackfreesa.org.za](mailto:zululand@frackfreesa.org.za); [ashburton@frackfreesa.org.za](mailto:ashburton@frackfreesa.org.za); [cheryl@threetreehill.co.za](mailto:cheryl@threetreehill.co.za); [geluksberg@frackfreesa.org.za](mailto:geluksberg@frackfreesa.org.za); [umzimvubu@frackfreesa.org.za](mailto:umzimvubu@frackfreesa.org.za); [durban@frackfreesa.org.za](mailto:durban@frackfreesa.org.za); [eia@frackfreesa.org.za](mailto:eia@frackfreesa.org.za); [education@frackfreesa.org.za](mailto:education@frackfreesa.org.za); [greytown@frackfreesa.org.za](mailto:greytown@frackfreesa.org.za); [northernkzn@frackfreesa.org.za](mailto:northernkzn@frackfreesa.org.za); [mpophomeni@frackfreesa.org.za](mailto:mpophomeni@frackfreesa.org.za); [youth@frackfreesa.org.za](mailto:youth@frackfreesa.org.za); [health@frackfreesa.org.za](mailto:health@frackfreesa.org.za); [amampondo@frackfreesa.org.za](mailto:amampondo@frackfreesa.org.za); [cleanair@frackfreesa.org.za](mailto:cleanair@frackfreesa.org.za); [letters@frackfreesa.org.za](mailto:letters@frackfreesa.org.za); [archaeology@frackfreesa.org.za](mailto:archaeology@frackfreesa.org.za); [durban@frackfreesa.org.za](mailto:durban@frackfreesa.org.za); [elandslaagte@frackfreesa.org.za](mailto:elandslaagte@frackfreesa.org.za); [verkykerskop@frackfreesa.org.za](mailto:verkykerskop@frackfreesa.org.za); [curryspost@frackfreesa.org.za](mailto:curryspost@frackfreesa.org.za); [farming@frackfreesa.org.za](mailto:farming@frackfreesa.org.za); [fracking@dws.gov.za](mailto:fracking@dws.gov.za); [muira@dws.gov.za](mailto:muir@frackfreesa.org.za); [muthraparsadN@dws.gov.za](mailto:muthraparsadN@dws.gov.za); [plu@petroleumagency.com](mailto:plu@petroleumagency.com); [kevanzunckel@gmail.com](mailto:kevanzunckel@gmail.com); [eia@frackfreesa.org.za](mailto:eia@frackfreesa.org.za); [eia@kznwildlife.com](mailto:eia@kznwildlife.com); 'Coastwatch'; 'Rob Crankshaw'

**Subject:** IUCN calls for sacred lands to be No Go for destructive industries

Dear EAP's

This IUCN notice below has reference to your fracking applications for exploration in our special places.

Please make sure you delineate all the sacred sites, which includes sacred waters (previous request) when you are doing the exclusion maps (not just the protected areas) for us – we still are waiting for all the other legally protected areas (water courses, heritage sites, etc.) to be delineated in the maps which so many IAP's have requested you share with us.

Please record this in your registers.

Thanks  
Judy

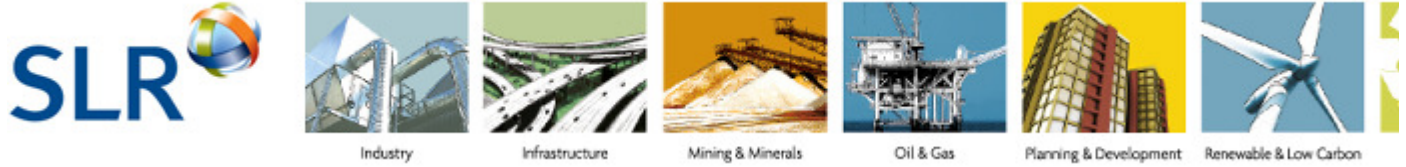
Sacred natural sites and protected areas should be No-Go for destructive industrial activities, declares world's largest conservation group as struggles to protect indigenous lands intensify.

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Tel: +27 33 343 5826  
Fax: +27 11 467 0978

SLR Consulting (Fourways office)  
Block 7 Fourways Manor Office Park  
Cnr Roos and Macbeth Streets  
Fourways, Johannesburg, 2060  
South Africa



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---

**From:** Bradley Gibbons [<mailto:bradleyg@ewt.org.za>]  
**Sent:** 27 September 2016 07:49 AM  
**To:** Matthew Hemming  
**Subject:** Afro Energy

Hi Matthew

I've had a few people ask me about the new Afro Energy application and how it compares to the Afro Energy application, in the Memel area, that you were involved with before you joined SLR. You are the best person to ask and I am not sure what to say.

Regards  
Bradley

**Bradley Gibbons**  
**Senior Field Officer, Threatened Grassland Species Programme**  
**Endangered Wildlife Trust**  
T + 27 34 312 9302 | C + 27 82 566 5803 | F + 27 86 517 8872  
Email: [bradleyg@ewt.org.za](mailto:bradleyg@ewt.org.za) | Web: [www.ewt.org.za](http://www.ewt.org.za) | Skype: gibbons.za  
Postal Address: P O Box 8800, Newcastle, KwaZulu-Natal, 2940, South Africa



Physical Address: Building K2, Pinelands Office Park, Ardler Road, Modderfontein, 1609  
Postal Address: Private Bag X11, Modderfontein, 1645, Johannesburg, South Africa

*This E-mail message and its attachments are subject to the disclaimer published at <http://www.ewt.org.za>*

## Edwynn Louw

---

**From:** Muir Anet <MuirA@dws.gov.za>  
**Sent:** 28 September 2016 10:38 AM  
**To:** Jeremy Blood  
**Cc:** Muthraparsad Namisha; Khosa Tsunduka; Reddy Jay (DBN); Grobbelaar Rachalet  
**Subject:** Requirement for a water use license for exploration -Coal Bed Methane  
**Attachments:** RE: AFRO ENERGY - NOTICE OF (ANOTHER ) APPLICATION (12/3/320 ER)!! AND OTHERS!!!; Declaration of unconventional gas 2015 10 16.pdf

**Importance:** High

Dear Jeremy

As per attached emails you represent Afro Energy and your background document indicates the application for exploration for CBM (MPRDA) and environmental Authorisation.

Please note the department declared unconventional gas exploration and production including CBM as a controlled activity and therefore your client requires a water use authorisation as well prior to commencing with any exploration activities. Please ensure you advise your client accordingly to ensure compliance.

Kind Regards  
Anet

Anet Muir  
Acting Chief Director: Compliance Monitoring  
Department of Water and Sanitation  
Sed 433a  
185 Francis Baard Street  
PTA 0001  
(t) 012 336 8806  
(e) [muira@dws.gov.za](mailto:muira@dws.gov.za)  
(c) 082 611 3036




BEFORE PRINTING THIS E-MAIL  
*please consider the environment*

60<sup>th</sup> Anniversary  
**WOMEN'S MONTH**  
**2016**

WATER IS LIFE - SANITATION IS DIGNITY

WOMEN UNITED IN MOVING SOUTH AFRICA FORWARD

 **water & sanitation**  
Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA





**Eastern Region**

S8 Van Eck Place, Mkhondeni, Pietermaritzburg, 3200  
PO Box 100410, Scottsville, South Africa, 3209  
Tel +27 (0) 33 3928100 Fax +27 (0) 33 3863365

Offices in Val de Grace – Pretoria (Head Office), Cape Town, Port Elizabeth

**Reference:** CN3 11/5/3 – 090 – 03      **Your Ref:** 722.01083.00003  
**Date:** 28 September 2016      **Direct Line:** 033 3928123  
**Email:** marxj@nra.co.za      **Website:** [www.nra.co.za](http://www.nra.co.za)

SLR  
P O Box 1596  
CRAMERVIEW  
2060

**Attention: Edwynn Louw**

Dear Sir

**NATIONAL ROUTE 3/9**

**SA NATIONAL ROADS AGENCY LIMITED AND NATIONAL ROADS ACT, ACT 7 OF 1998 – AFRO ENERGY – APPLICATION FOR ENVIRONMENTAL AUTHORISATION FOR AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES**

The area under investigation for your application extends over national route N3 which falls under SANRAL's jurisdiction.

Should the application be successful SANRAL will not allow any new access off its National Road and SANRAL must also be advised which existing accesses will be utilised to gain entry to the proposed areas.

If any activity falls within SANRAL's area of jurisdiction which is defined in the SA National Roads Agency Act as being within 500 metres of any intersection with the National Road and within 60 metres of any national road reserve boundary formal application must be made to this office via normal or couriered mail.

Yours sincerely

for L Sewnarain  
**Regional Manager: Eastern Region**  
**SA National Roads Agency SOC Limited**

Copy      Douglas Judd      N3TC

## Edwynn Louw

---

**From:** Werner <eensgevonden@gmail.com>  
**Sent:** 30 September 2016 09:28 AM  
**To:** Jeremy Blood  
**Subject:** Afro energy - registrasie as belanghebbende party  
**Attachments:** Afro\_Energy320\_BID\_Afr\_Sept16 7\_01.pdf

Goeie dag Jeremy

Sien asb my vorm vir registrasie as belanghebbende party by die Afro Energy aansoek

Groete  
Werner Krugel  
083 275 9151

## Afro Energy (Edms) Bpk

# AANSOEK OM 'N EKSPLORASIEREG VIR PETROLEUM OP 'N AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN MPUMALANGA PROVINSIES (12/3/320 ER)

### REGISTRASIE EN KOMMENTAARVORM VIR BELANGHEBBENDE PARTYE

NAAM	Werner Krugel namens Eensgevonden Trust IT955/04			
PLAAS / EIENDOM of ORGANISASIE	Eensgevonden 647 en Klippie Alleen 436			
POSADRES	Posbus 6, Heidelberg, Gauteng, 1438			
POSKODE	1438	FAKSNOMMER		
TELEFOONNOMMER	083 275 9151	SELFOONNOMMER	083 275 9151	
E-POS	eensgevonden@gmail.com			
VOORKEUR KORRESPONDENSIE (merk)	POS	FAKS	<b>E-POS</b>	SMS
DATUM	2016.09.30	HANDTEKENING		

#### ANDER GRONDEIENAARS IN DIE AREA OF PARTYE WAT U VOEL IN KENNIS GESTEL MOET WORD:

atmir@robvaal.co.za, andries.cilliers@gmail.com, casper@cut.ac.za, cilliers777@gmail.com, cmia@vodamail.co.za, corliabeyers@gmail.com, corrie@lantic.net, dejagermp@yahoo.com, eensgevonden@gmail.com, flip@woodworks.co.za, greying@netactive.co.za, iw.zzznguni@gmail.com, jcd@lantic.net, jcd8272@gmail.com, jhurter@vodamail.co.za, jsreyneke@hotmail.com, liefgekosen@vodamail.co.za, myramuiler@lantic.net, Paulpetrokruger@gmail.com, paulskruger1@gmail.com, renckb@vodamail.co.za, rykersvr@gmail.com, sjungerer@gmail.com, swroeland22@gmail.com, sweeterhuizen@telkomsa.net, swu@vodamail.co.za, tafeikop@zipppnorth.co.za, vanwyklaetitia@yahoo.com, vanwykmj@yahoo.com, wolf@coewes.co.za, info@coewes.co.za, hndp@autocity.co.za, elsmeat@gmail.com, mooimeisiesfontein@zipppnorth.co.za, stephan@internetsa.co.za

#### VERDUIDELIK ASSEBLIEF U BELANG IN DIE VOORGESTELDE PROJEK:

Veeboer en grondeienaar

#### VERSKAF ASSEBLIEF U KOMMENTAAR EN VRAE HIER:

Die potensiele invloede wat genoem word in die aansoek van Afro Energy het direk impak om my en enige ander boer en grondeienaar. Plaasveiligheid is 'n brandende kwessie alreeds, so enige aktiwiteit soos toegang van vreemde persone wat addisionele veiligheidsrisiko skep is onaanvaarbaar. Dit verhoog ook die risiko van diefstal. Boerdery en veral veeboerdery is totaal afhanklik van skoon waterbronne. Die risiko van waterbesoedeling is onaanvaarbaar. Besoedeling sal lei daartoe dat ons besighede nie meer ekonomies lewensvatbaar is nie en dit sal 'n direkte negatiewe invloed he op die waarde van ons grond. Dan is daar ook die realiteit dat wanneer sulke tipe aktiwiteite plaasvind daar nooit voldoende rehabilitasie geskied nie.

(gebruik addisionele bladsye indien nodig)

Stuur asseblief voltooide vorms aan SLR:

Aandag: Jeremy Blood

Tel: (021) 461 1119 of Faks: (021) 461 1120 of

E-pos: jblood@slrconsulting.com

## Edwynn Louw

---

**Subject:** FW: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

**From:** Dimakatso Mokoena [<mailto:mokoena@detea.fs.gov.za>]

**Sent:** 30 September 2016 10:22 AM

**To:** Edwynn Louw

**Subject:** RE: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

Good Morning Mr. Louw,

Please be informed that the National Department of Mineral Resources is the Competent Authority for the Mining Projects, therefore the Free State Department of Environmental Affairs will be the commenting authority for the above-mentioned reference developments. Therefore, you should submit reports to this Department of which will be subjected to 30 days commenting period.

Regards,

Ms. D. Mokoena

**Environmental Officer: Environmental Impact Management**

Tel no: 051 400 4771

34 C/NR Markgraff & Zastron Street Westdene

Bloemfontein

9300



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## Edwynn Louw

---

**From:** Johann van Heerden <johannvh@autocity.co.za>  
**Sent:** 03 October 2016 05:02 PM  
**To:** Jeremy Blood  
**Cc:** hndp@autocity.co.za  
**Subject:** REGISTRATION OF INTERESTED AND EFFECTED PARTIES  
**Attachments:** doc09389420161003170119.pdf


Please find attached required registration form.

Regards  
Johann van Heerden.

Afro Energy (Pty) Ltd

APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM  
ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND  
MPUMALANGA PROVINCES (12/3/320 ER)

REGISTRATION AND RESPONSE FORM FOR INTERESTED AND AFFECTED PARTIES

NAME	JOHANN VAN HEERDEN		
FARM / PROPERTY or ORGANISATION	Uitroek 223, Wandaal 1082, Oriëntiek 1058, Hipkins Valley 1083.		
POSTAL ADDRESS	P.O. Box 761 Heidelberg		
POSTAL CODE	1438	FAX NUMBER	016-3491504
TELEPHONE NUMBER	016-3491333	CELL PHONE NUMBER	0824488644
E-MAIL	hndpp@autocity.co.za		
PREFERRED CORRESPONDENCE (circle)	<input type="checkbox"/> POST	<input type="checkbox"/> FAX	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> SMS
DATE	3-10-16	SIGNATURE	

DETAILS OF OTHER PEOPLE WHO OWN LAND IN THE AREA OR YOU FEEL SHOULD BE INFORMED:

Mr. Johann de Kock  
Mr. M.P. de Jager  
Mr. Willem Betels

PLEASE IDENTIFY YOUR INTEREST IN THE PROPOSED PROJECT:

Land owner.

PLEASE WRITE YOUR COMMENTS AND QUESTIONS HERE:

I AM NOT INTERESTED IN ANY EXPLORATION ANY DRILLING ON MY LAND  
IT IS NOT GOOD FOR THE ENVIRONMENT AND PSES DANGER TO WATER  
RECURRES AND PEOPLE.

(use additional pages if required)

Please return completed forms to SLR:

Attention: Jeremy Blood

Tel: (021) 461-1118 or Fax: (021) 461-1120 or

E-mail: jblood@slrconsulting.com



## Edwynn Louw

---

**Subject:** FW: SA Human Rights Commission on Mining and implications for Applications for Oil & Gas Exploration

**From:** Judy Bell [<mailto:judybell@mweb.co.za>]

**Sent:** 06 October 2016 11:22 AM

**To:** Matthew Hemming; Stella Moeketse; [ERSungu@eims.co.za](mailto:ERSungu@eims.co.za); William Berry; Ntsako Baloyi; [KZNMotuoane@eims.co.za](mailto:KZNMotuoane@eims.co.za); [mail@eims.co.za](mailto:mail@eims.co.za); [brian@eims.co.za](mailto:brian@eims.co.za); [FSMotuoane@eims.co.za](mailto:FSMotuoane@eims.co.za); [nobuhle@eims.co.za](mailto:nobuhle@eims.co.za); Theo Wicks

**Cc:** [Seashalegas@csir.co.za](mailto:Seashalegas@csir.co.za); 'Frack Free SA'; 'Bobby Peek'; 'Catherine Horsfield'; Nicole Loser; 'Robyn Hugo'; [robs@groundwork.org.za](mailto:robs@groundwork.org.za); [rico@groundwork.org.za](mailto:rico@groundwork.org.za); [sviljoen@wwf.org.za](mailto:sviljoen@wwf.org.za); 'Sissie Matela'; 'Bradley Gibbons'; [samsonp@ewt.org.za](mailto:samsonp@ewt.org.za); 'Cobus Theron'; 'Doug Burden'; 'Jenny Longmore'; [act@frackfreesa.org.za](mailto:act@frackfreesa.org.za); [health@frackfreesa.org.za](mailto:health@frackfreesa.org.za); [films@frackfreesa.org.za](mailto:films@frackfreesa.org.za); [vanreenen@frackfreesa.org.za](mailto:vanreenen@frackfreesa.org.za); [water@frackfreesa.org.za](mailto:water@frackfreesa.org.za); [zululand@frackfreesa.org.za](mailto:zululand@frackfreesa.org.za); [ashburton@frackfreesa.org.za](mailto:ashburton@frackfreesa.org.za); [cheryl@threetreehill.co.za](mailto:cheryl@threetreehill.co.za); [geluksberg@frackfreesa.org.za](mailto:geluksberg@frackfreesa.org.za); [umzimvubu@frackfreesa.org.za](mailto:umzimvubu@frackfreesa.org.za); [durban@frackfreesa.org.za](mailto:durban@frackfreesa.org.za); [eia@frackfreesa.org.za](mailto:eia@frackfreesa.org.za); [education@frackfreesa.org.za](mailto:education@frackfreesa.org.za); 'Nora Choveaux'; [greytown@frackfreesa.org.za](mailto:greytown@frackfreesa.org.za); [northernkzn@frackfreesa.org.za](mailto:northernkzn@frackfreesa.org.za); [mpophomeni@frackfreesa.org.za](mailto:mpophomeni@frackfreesa.org.za); [youth@frackfreesa.org.za](mailto:youth@frackfreesa.org.za); [health@frackfreesa.org.za](mailto:health@frackfreesa.org.za); [amampondo@frackfreesa.org.za](mailto:amampondo@frackfreesa.org.za); [cleanair@frackfreesa.org.za](mailto:cleanair@frackfreesa.org.za); [letters@frackfreesa.org.za](mailto:letters@frackfreesa.org.za); [archaeology@frackfreesa.org.za](mailto:archaeology@frackfreesa.org.za); [durban@frackfreesa.org.za](mailto:durban@frackfreesa.org.za); [elandslaagte@frackfreesa.org.za](mailto:elandslaagte@frackfreesa.org.za); [verkykerskop@frackfreesa.org.za](mailto:verkykerskop@frackfreesa.org.za); [curryspos@frackfreesa.org.za](mailto:curryspos@frackfreesa.org.za); [farming@frackfreesa.org.za](mailto:farming@frackfreesa.org.za); [fracking@dws.gov.za](mailto:fracking@dws.gov.za); [muir@dws.gov.za](mailto:muir@dw.gov.za); [muthraparsadN@dws.gov.za](mailto:muthraparsadN@dws.gov.za); [plu@petroleumagencysa.com](mailto:plu@petroleumagencysa.com); [kevanzunckel@gmail.com](mailto:kevanzunckel@gmail.com); [eia@frackfreesa.org.za](mailto:eia@frackfreesa.org.za); [eia@kznwildlife.com](mailto:eia@kznwildlife.com); 'Coastwatch'; 'Rob Crankshaw'; Jeremy Ridl; 'Niven Reddy'

**Subject:** SA Human Rights Commission on Mining and implications for Applications for Oil & Gas Exploration

Dear EAPs

What a wonderful, but heart-breaking FrackFreeFest we had in Matatiele! Your collective ears must have been burning! I am sure you saw our FaceBook posts and tweets, but in case you missed them, it was a gathering of communities from all over South Africa at which we heard stories first hand of the brutality they face living with extractive industries on their doorsteps. Those who have not been exposed to the impacts of mining but whose lives and livelihoods are now threatened by the extraction of unconventional gas were adamant that the **struggle continues** and fracking will not be allowed anywhere, anytime!

We also watched with tears in our eyes, the documentary made by Joseph Oesi called "Black Lives Matter" which shows how the promises of jobs and development in the platinum belt lead to poverty, despair and even murder. Joseph was so moved by the stories told at the FrackFreeFest that he started filming! He was in exile and on his return feels the betrayal of the struggle. This came through very clearly from all the communities living with the impacts of extractive industries – the freedom we fought for has been lost.

We also saw with our own eyes how people are using renewable to power their lives and livelihoods. We do not need any new sources of fossil fuels – we cannot afford the true costs, which your clients and the companies to which they hope to sell the data, will **not** bear. We have the renewable sources and technologies, just need the legal framework to be developed through **meaningful** public participation and then to be implemented to improve our lives and livelihoods and protect the ecosystems which support us all.

Please would you:

1. Send us the authorisations received from PASA for **all** the phases of the applications for exploration for oil and gas with which you are working on behalf of **all** of your clients. We need to see for ourselves.
2. Note (and record this in your comments documentation) that dividing up the application for approval into phases without dealing with the whole exploration's impacts is illegal. The National Environmental Management Act's regulations for assessing environmental impacts is very clear – all phases of the project need to be assessed up front! Applying for approval of the first phase with



the invasive activities removed for assessing later is thus **unacceptable and unethical** in my view. It **will** be challenged.

Much appreciated  
Judy Bell

[www.frackfreesa.org.za](http://www.frackfreesa.org.za)

[www.facebook.com/frackfreesouthafrica](https://www.facebook.com/frackfreesouthafrica)

Twitter: frackfreekzn



## Edwynn Louw

---

**From:** Muzi Mkhize <mwmkhize@mpg.gov.za>  
**Sent:** 06 October 2016 08:24 AM  
**To:** Edwynn Louw  
**Subject:** Re: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

Good morning

Thank you very much for the informing.

We will try to have representation in at least one of the sessions.

Kind regards,

### Muzi W. Mkhize

**Head: Economic Development and Tourism**



Mpumalanga Provincial Government

Building No. 4, 1st Floor, No.7 Government Boulevard; Riverside Park Extension 2, Mbombela, 1201

Private Bag X 11215, Mbombela, 1200

Tel: +2713 766 4585/4179; Fax: +2713 766 4613; Mobile: +2782 447 3561; Email: mwmkhize@mpg.gov.za

*For what is a man profited, if he shall gain the whole world, and lose his own soul? or what shall a man give in exchange for his soul?*

>>> Edwynn Louw <elouw@slrconsulting.com> 09/20/16 12:25 PM >>>



722.01083.00003

Project Reference:

File Ref. 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH

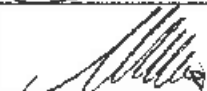
20 September 2016

ATTENTION: LANDOWNER/STAKEHOLDER

AFRO ENERGY - Notice of application for environmental authoriSation in support of an exploration right for petroleum ON VARIOUS FARMS IN A PORTION OF THE Free State and Mpumalanga Provinces (12/3/320 ER)

07 OCT 2016

**Afro Energy (Pty) Ltd**  
**APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM**  
**ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND**  
**MPUMALANGA PROVINCES (12/3/320/ER)**  
**REGISTRATION AND RESPONSE FORM FOR INTERESTED AND AFFECTED PARTIES**

NAME	Dr S R Koller		
FARM / PROPERTY or ORGANISATION	Aarley 176		
POSTAL ADDRESS	Box 310 Wendelberg		
POSTAL CODE	4638	FAX NUMBER	0163492222
TELEPHONE NUMBER	0163414121	CELL PHONE NUMBER	
E-MAIL	SRKOLLER@inweb.co.za		
PREFERRED CORRESPONDENCE (circle)	POST	FAX	<input checked="" type="radio"/> EMAIL
DATE	7/10/16	SIGNATURE	

**DETAILS OF OTHER PEOPLE WHO OWN LAND IN THE AREA OR YOU FEEL SHOULD BE INFORMED:**

N/A      ↓      e mail  
 SRKOLLER@inweb.co.za

**PLEASE IDENTIFY YOUR INTEREST IN THE PROPOSED PROJECT:**

N/A

**PLEASE WRITE YOUR COMMENTS AND QUESTIONS HERE:**

1/ Impact on the groundwater systems  
 2/ Pollution of the groundwater  
 and Nature in general  
 3/ Safety / Security on farms  
 4/ I strongly oppose to this project

(use additional pages if required)

Please return completed forms to SLR  
 Attention: Jeremy Blood  
 Tel: (021) 461 4118 or Fax: (021) 461 4120 or  
 E-mail: jblood@slrconsulting.com

## Edwynn Louw

---

**From:** Albe Swart <albes@vkb.co.za>  
**Sent:** 10 October 2016 09:20 AM  
**To:** Imraan Banderker  
**Cc:** Jeremy Blood; Edwynn Louw  
**Subject:** RE: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

Good morning Imraan  
Thank you for the said application. I will contact you as soon as possible.

Yours faithfully.

 **Albe Swart**  
Eiendomme Beampte  
Property Official  
Sel/Cel: +27 72 136 5601  
Tel: +27 87 358 8519  
Faks/Fax: +27 86 743 3673  
Posbus/P.O. Box 100, Reitz 9810

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Gemagtigde Kredietverskaffer/Authorised Credit Supplier NCRCP 7107  
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**From:** Imraan Banderker [mailto:ibanderker@slrconsulting.com]  
**Sent:** 05 October 2016 15:51  
**To:** Albe Swart <albes@vkb.co.za>  
**Cc:** Jeremy Blood <jblood@slrconsulting.com>; Edwynn Louw <elouw@slrconsulting.com>  
**Subject:** AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

722.01083.00003

Project Reference:

File Ref. 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH

5 October 2016

**ATTENTION: ALBE SWART**

**AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)**

This letter provides formal notification that Afro Energy (Pty) Ltd (Afro Energy) has lodged an application for an **Exploration Right** (ER) to explore for "Petroleum and Gas" with the Petroleum Agency of South Africa (PASA) in terms of Section 79 of the Minerals and Petroleum Resources Development Act, 2002 (No. 28 of 2002) (MPRDA).

## Edwynn Louw

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**Subject:** FW: Core Drilling - mining waste = hazardous waste

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**From:** Judy Bell [<mailto:judybell@mweb.co.za>]

**Sent:** 11 October 2016 07:24 AM

**To:** Matthew Hemming; Stella Moeketse; [ERSungu@eims.co.za](mailto:ERSungu@eims.co.za); William Berry; Ntsako Baloyi; [KZNMotuoane@eims.co.za](mailto:KZNMotuoane@eims.co.za); [mail@eims.co.za](mailto:mail@eims.co.za); [brian@eims.co.za](mailto:brian@eims.co.za); [FSMotuoane@eims.co.za](mailto:FSMotuoane@eims.co.za); [nobuhle@eims.co.za](mailto:nobuhle@eims.co.za); Theo Wicks

**Cc:** [Seashalegas@csir.co.za](mailto:Seashalegas@csir.co.za); 'Frack Free SA'; 'Bobby Peek'; 'Catherine Horsfield'; Nicole Loser; 'Robyn Hugo'; [robs@groundwork.org.za](mailto:robs@groundwork.org.za); [rico@groundwork.org.za](mailto:rico@groundwork.org.za); [sviljoen@wwf.org.za](mailto:sviljoen@wwf.org.za); 'Sissie Matela'; 'Bradley Gibbons'; [samsonp@ewt.org.za](mailto:samsonp@ewt.org.za); 'Cobus Theron'; 'Doug Burden'; 'Jenny Longmore'; [act@frackfreesa.org.za](mailto:act@frackfreesa.org.za); [health@frackfreesa.org.za](mailto:health@frackfreesa.org.za); [films@frackfreesa.org.za](mailto:films@frackfreesa.org.za); [vanreenen@frackfreesa.org.za](mailto:vanreenen@frackfreesa.org.za); [water@frackfreesa.org.za](mailto:water@frackfreesa.org.za); [zululand@frackfreesa.org.za](mailto:zululand@frackfreesa.org.za); [ashburton@frackfreesa.org.za](mailto:ashburton@frackfreesa.org.za); [cheryl@threetreehill.co.za](mailto:cheryl@threetreehill.co.za); [geluksberg@frackfreesa.org.za](mailto:geluksberg@frackfreesa.org.za); [umzimvubu@frackfreesa.org.za](mailto:umzimvubu@frackfreesa.org.za); [durban@frackfreesa.org.za](mailto:durban@frackfreesa.org.za); [eia@frackfreesa.org.za](mailto:eia@frackfreesa.org.za); [education@frackfreesa.org.za](mailto:education@frackfreesa.org.za); 'Nora Choveaux'; [greytown@frackfreesa.org.za](mailto:greytown@frackfreesa.org.za); [northernkzn@frackfreesa.org.za](mailto:northernkzn@frackfreesa.org.za); [mpophomeni@frackfreesa.org.za](mailto:mpophomeni@frackfreesa.org.za); [youth@frackfreesa.org.za](mailto:youth@frackfreesa.org.za); [health@frackfreesa.org.za](mailto:health@frackfreesa.org.za); [amampondo@frackfreesa.org.za](mailto:amampondo@frackfreesa.org.za); [cleanair@frackfreesa.org.za](mailto:cleanair@frackfreesa.org.za); [letters@frackfreesa.org.za](mailto:letters@frackfreesa.org.za); [archaeology@frackfreesa.org.za](mailto:archaeology@frackfreesa.org.za); [durban@frackfreesa.org.za](mailto:durban@frackfreesa.org.za); [elandslaagte@frackfreesa.org.za](mailto:elandslaagte@frackfreesa.org.za); [verkykerskop@frackfreesa.org.za](mailto:verkykerskop@frackfreesa.org.za); [curryspost@frackfreesa.org.za](mailto:curryspost@frackfreesa.org.za); [farming@frackfreesa.org.za](mailto:farming@frackfreesa.org.za); [fracking@dws.gov.za](mailto:fracking@dws.gov.za); [muira@dw.gov.za](mailto:muir@dw.gov.za); [muthraparsadN@dws.gov.za](mailto:muthraparsadN@dws.gov.za); [plu@petroleumagency.com](mailto:plu@petroleumagency.com); [kevanzunckel@gmail.com](mailto:kevanzunckel@gmail.com); [eia@frackfreesa.org.za](mailto:eia@frackfreesa.org.za); [eia@kznwildlife.com](mailto:eia@kznwildlife.com); 'Coastwatch'; 'Rob Crankshaw'; Jeremy Ridl; 'Niven Reddy'; 'Penny Rees'; 'Mark Gordon'

**Subject:** Core Drilling - mining waste = hazardous waste

Dear EAPs

Please record this comment formally in your various registers for all the application with which you are currently working for exploration for oil and gas.

According to the legislation, all mining waste is classified as hazardous. I have not seen any mention of how you all intend to handle and safely dispose of this waste from the core drilling in compliance with the National Waste Act and its regulations.

Please advise us as to why this has been excluded from the documentation (maybe I have missed it) and how it will be addressed.

Many thanks

Judy Bell

[www.frackfreesa.org.za](http://www.frackfreesa.org.za)

[www.facebook.com/frackfreesouthafrica](https://www.facebook.com/frackfreesouthafrica)

Twitter: frackfreekzn






Afro Energy (Edms) Bpk

**AANSOEK OM 'N EKSPLORASIEREG VIR PETROLEUM OP 'N AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN MPUMALANGA PROVINSIES (12/3/320 ER)**

REGISTRASIE EN KOMMENTAARVORM VIR BELANGHEBBENDE PARTYE

NAAM	P. Skouper		
PLAAS / EIENDOM of ORGANISASIE	Laduma		
POSADRES	Postbus 3 Denneliet		
POSKODE	9850	FAKSNOMMER	
TELEFOONNOMMER		SELFOONNOMMER	
E-POS	paulskouper1@gmail.com		
VOORKEUR KORRESPONDENSIE (merk)	<input type="checkbox"/> POS	<input type="checkbox"/> FAKS	<input checked="" type="checkbox"/> E-POS <input type="checkbox"/> SMS
DATUM	11 Okt 16	HANDTEKENING	

ANDER GRONDEIENAARS IN DIE AREA OF PARTYE WAT U VOEL IN KENNIS GESTEL MOET WORD:

VERDUIDELIK ASSEBLIEF U BELANG IN DIE VOORGESTELDE PROJEEK:

Grondseker	Reelms 417	Kaolna
Witbank	Kington 870	Kington
	Middeelpaas	middeelpaas

VERSKAF ASSEBLIEF U KOMMENTAAR EN VRAE HIER:

Uitend op grond al 3 plase

(gebruik addisionele bladsye indien nodig)

Stuur asseblief voltooide vorms aan SLR:

Aandag: Jeremy Blood  
 Tel: (021) 461 1119 of Faks: (021) 461 1120 of  
 E-pos: jblood@slrconsulting.com

Afro Energy (Edms) Bpk

**AANSOEK OM 'N EKSPLORASIEREG VIR PETROLEUM OP 'N  
AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN  
MPUMALANGA PROVINSIES (12/3/320 ER)**

REGISTRASIE EN KOMMENTAARVORM VIR BELANGHEBBENDE PARTYE

NAAM	JAD CILLIERS		
PLAAS / EIENDOM of ORGANISASIE	TAAIBOSCHSPRUIT		
POSADRES	53 CORNELIA		
POSKODE	9850	FAKSNOMMER	0865706168
TELEFOONNOMMER		SELFOONNOMMER	0828765382
E-POS	andries.cilliers@gmail.com		
VOORKEUR KORRESPONDENSIE (merk)	POS	FAKS	<u>E-POS</u> SMS
DATUM	11 OKT 2016	HANDTEKENING	<i>Jad Cilliers</i>

ANDER GRONDEIENAARS IN DIE AREA OF PARTYE WAT U VOEL IN KENNIS GESTEL MOET WORD:

VERDUIDELIK ASSEBLIEF U BELANG IN DIE VOORGESTELDE PROJEK:

GROND EIENAAR TAAIBOSCHSPRUIT 217 (1)  
 DONKER POORT 320 (1)  
 Klyskopje 1135 HIPKINS HOPE 1064

VERSKAF ASSEBLIEF U KOMMENTAAR EN VRAE HIER:

VLEILAND OP GROND

(gebruik addisionele bladsye indien nodig)

Stuur asseblief voltooide vorms aan SLR:

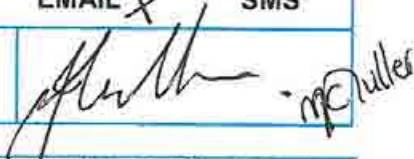
Aandag: Jeremy Blood  
 Tel: (021) 461 1119 of Faks: (021) 461 1120 of  
 E-pos: jblood@slrconsulting.com



Afro Energy (Pty) Ltd

APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM  
ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND  
MPUMALANGA PROVINCES (12/3/320 ER)

REGISTRATION AND RESPONSE FORM FOR INTERESTED AND AFFECTED PARTIES

NAME	(J.L.) JOHNNY MULLER & MYKA MULLER (M.C.)		
FARM / PROPERTY or ORGANISATION	UITZIEN <sup>?</sup> ; UITZICHT <sup>(313)</sup> ; GEWUK(325)		
POSTAL ADDRESS	POSBUS 551 VREDE		
POSTAL CODE	9835	FAX NUMBER	
TELEPHONE NUMBER	0589132146	CELL PHONE NUMBER	0828295699
E-MAIL	mcmuller@internet-sa.co.za		
PREFERRED CORRESPONDENCE (circle)	POST	FAX	EMAIL <input checked="" type="checkbox"/> SMS
DATE	11/10/2016	SIGNATURE	 mcmuller

DETAILS OF OTHER PEOPLE WHO OWN LAND IN THE AREA OR YOU FEEL SHOULD BE INFORMED:

PLEASE IDENTIFY YOUR INTEREST IN THE PROPOSED PROJECT:

LANDOWNERS IN AFFECTED ~~AREA~~ AREA

PLEASE WRITE YOUR COMMENTS AND QUESTIONS HERE:

DID ATTEND THE MEETING IN CORNELIA ON 11 OCTOBER 2016 AT 15H00.

~~PLA~~ PLEASE CORRESPOND IN AFRIKAANS WITH US IN FUTURE WITH REGARDS TO EMAIL CORRESPONDENCE.

WE ARE CONCERNED ABOUT THE WATER THAT WILL BE USED BECAUSE SOUTH AFRICA ARE NOT WEALTHY IN WATER.

(use additional pages if required)

Please return completed forms to SLR:

Attention: Jeremy Blood

Tel: (021) 461 1118 or Fax: (021) 461 1120 or

E-mail: jblood@slrconsulting.com



Afro Energy (Edms) Bpk

**AANSOEK OM 'N EKSPLORASIEREG VIR PETROLEUM OP 'N AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN MPUMALANGA PROVINSIES (12/3/320 ER)**

REGISTRASIE EN KOMMENTAARVORM VIR BELANGHEBBENDE PARTYE

NAAM	P. B DE WET.		
PLAAS / EIENDOM of ORGANISASIE	DEWETSHOOP		
POSADRES	BUS 43 VILLIERS		
POSKODE	9840	FAKSNOMMER	
TELEFOONNOMMER		SELFOONNOMMER	0824948063
E-POS	flip@woodworks.co.za.		
VOORKEUR KORRESPONDENSIE (merk)	POS	FAKS	<input checked="" type="checkbox"/> E-POS <input type="checkbox"/> SMS
DATUM	11/10/2016	HANDTEKENING	P B de Wet

ANDER GRONDEIENAARS IN DIE AREA OF PARTYE WAT U VOEL IN KENNIS GESTEL MOET WORD:

VERDUIDELIK ASSEBLIEF U BELANG IN DIE VOORGESTELDE PROJEK:

BESORG OOR GRONDWATER

VERSKAF ASSEBLIEF U KOMMENTAAR EN VRAE HIER:

Hoe veilig is my grondwater?

(gebruik addisionele bladsye indien nodig)

Stuur asseblief voltooide vorms aan SLR:

Aandag: Jeremy Blood  
Tel: (021) 461 1119 of Faks: (021) 461 1120 of  
E-pos: jblood@slrconsulting.com



Afro Energy (Edms) Bpk

**AANSOEK OM 'N EKSPLORASIEREG VIR PETROLEUM OP 'N  
AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN  
MPUMALANGA PROVINSIES (12/3/320 ER)**

REGISTRASIE EN KOMMENTAARVORM VIR BELANGHEBBENDE PARTYE

NAAM	JACOBUS LOURENS		
PLAAS / EIENDOM of ORGANISASIE	JJ LOURENS TRUST		
POSADRES	89 FRANKFORT 9830		
POSKODE	9830	FAKSNOMMER	_____
TELEFOONNOMMER	_____	SELFOONNOMMER	082 944 7131
E-POS	jlourens@lantic.net		
VOORKEUR KORRESPONDENSIE (merk)	POS	FAKS	<input checked="" type="checkbox"/> E-POS <input type="checkbox"/> SMS
DATUM	11/10/2016	HANDTEKENING	

ANDER GRONDEIENAARS IN DIE AREA OF PARTYE WAT U VOEL IN KENNIS GESTEL MOET WORD:

VERDUIDELIK ASSEBLIEF U BELANG IN DIE VOORGESTELDE PROJEK:

Die grond waarop die Trusters van J.J. LOURENS TRUST Bepaal hulle die voorgestelde gebied. Die plaas DUNDEE vir Kernboring is deel van die eendans.

VERSKAF ASSEBLIEF U KOMMENTAAR EN VRAE HIER:

Gas produksie is in 'n nuwe fases en ontginning in ons land. Niemand weet wat die reëllose langtermyn gevolge van die ontginning van gas gaan wees op h.w. ondergrond water en nie ek is weder bekend by die ekstra mensel wat toegang gaan by tot die gebied, waar ons alreeds baie druk ervaar is v. veiligheid en diefstal. Die eendans van J.J. LOURENS TRUST sal ook in die aansoek van Rhino Gas (gebruik addisionele bladsye indien nodig)

Stuur asseblief voltooide vorms aan SLR:

Aandag: Jeremy Blood

Tel: (021) 461 1119 of Faks: (021) 461 1120 of

E-pos: jblood@sirconsulting.com

## Jeremy Blood

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**From:** Rikus Lamprecht <rikus@enviroworks.co.za>  
**Sent:** 12 October 2016 09:00 AM  
**To:** Jeremy Blood  
**Subject:** 12-3-318 ER - I & AP registration form required

Good day Jeremy

Hope all is well.

As per my telephonic request can you kindly please provide me with a Microsoft Word version of the 320 ER registration form in order to enable digital completion and submission.

I would require this by Friday please if possible.

Thanks.

Have a safe day.

Regards

www.enviroworks.co.za

**enviroworks**  
Today's Impact | Tomorrow's Legacy

**Rikus Lamprecht**  
M.Env.Sci Ecological Remediation and Sustainable Utilisation  
(NWU:PUK)  
**Senior Environmental Consultant**  
C +27(0)72 230 9598  
E rikus@enviroworks.co.za  
T +27(0)86 198 8895

BRANCHES: Bloemfontein | Johannesburg | Cape Town  
Upington | Knysna | Somerset West | Springbok

Part of the **SHE** GROUP

## Edwynn Louw

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**From:** Rikus Lamprecht <rikus@enviroworks.co.za>  
**Sent:** 12 October 2016 04:42 PM  
**To:** Jeremy Blood  
**Cc:** Elbi Bredenkamp; Johan Botes; Hilary Hill (hilaryh@vkb.co.za); jack@vslandbou.co.za  
**Subject:** Afro Energy Project 12/3/320 ER - Completed I & AP registration form  
**Attachments:** 12-3-320 I & AP Registration.pdf

**Importance:** High

Good day Jeremy

Hope all is well.

Enviroworks, an independent environmental consultancy, has been appointed by VKB Agriculture and all its stakeholders and members as well as Free State Agriculture, to comment on the Scoping and Environmental Impact Assessment process for the proposed project on their behalf.

Please find attached our completed I & AP registration form.  
Have a safe day.

Regards




The image shows a business card for Enviroworks. On the left, there is a vertical green bar with the website address [www.enviroworks.co.za](http://www.enviroworks.co.za). The main part of the card features the Enviroworks logo, which consists of the word "enviro" in a grey, lowercase, sans-serif font with a green leaf-like shape above the 'i', and "works" in a smaller, grey, lowercase, sans-serif font below it. Below the logo is a green horizontal bar with the tagline "Today's Impact | Tomorrow's Legacy" in white text. To the right of the logo, the name "Rikus Lamprecht" is printed in a large, bold, black font. Below the name, his qualifications "M.Env.Sci Ecological Remediation and Sustainable Utilisation (NWU:PUK)" are listed in a smaller black font. Underneath that, his title "Senior Environmental Consultant" is written in a green font. His contact information is provided in black text: "C +27(0)72 230 9598", "E rikus@enviroworks.co.za", and "T +27(0)86 198 8895". At the bottom of the card, there is a dark horizontal bar. On the left side of this bar, the text "BRANCHES: Bloemfontein | Johannesburg | Cape Town | Upington | Knysna | Somerset West | Springbok" is written in white. On the right side, it says "Part of the" followed by the SHE GROUP logo, which includes a stylized white triangle and the letters "SHE" in a bold, white, sans-serif font, with "GROUP" in a smaller font below it.



## Afro Energy (Pty) Ltd

### APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

#### REGISTRATION AND RESPONSE FORM FOR INTERESTED AND AFFECTED PARTIES

<b>NAME</b>	Enviroworks consulting		
<b>FARM / PROPERTY or ORGANISATION</b>	Enviroworks, an independent environmental consultancy, has been appointed by VKB Agriculture and all its stakeholders and members as well as Free State Agriculture, to comment on the Scoping and Environmental Impact Assessment process for the proposed project on their behalf.		
<b>POSTAL ADDRESS</b>	Suite 116, Private Bag X01, Brandhof		
<b>POSTAL CODE</b>	9324	<b>FAX NUMBER</b>	051 436 0791
<b>TELEPHONE NUMBER</b>	051 436 0793	<b>CELL PHONE NUMBER</b>	072 230 9598
<b>E-MAIL</b>	rikus@enviroworks.co.za		
<b>PREFERRED CORRESPONDENCE (circle)</b>			<b>EMAIL</b>
<b>DATE</b>	2016/10/12	<b>SIGNATURE</b>	

#### DETAILS OF OTHER PEOPLE WHO OWN LAND IN THE AREA OR YOU FEEL SHOULD BE INFORMED:

#### PLEASE IDENTIFY YOUR INTEREST IN THE PROPOSED PROJECT:

Enviroworks, an independent environmental consultancy, has been appointed by VKB Agriculture and all its stakeholders and members as well as Free State Agriculture, to comment on the Scoping and Environmental Impact Assessment process for the proposed project on their behalf.

#### PLEASE WRITE YOUR COMMENTS AND QUESTIONS HERE:

I would like to be informed of the availability of the Scoping Report and commencement of the Public Participation Process in order to provide comments.

Please return completed forms to SLR:

Attention: Jeremy Blood  
Tel: (021) 461 1118 or Fax: (021) 461 1120 or  
E-mail: jblood@slrconsulting.com

## Edwynn Louw

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**From:** Maryke Kruger <kruger.maryke@gmail.com>  
**Sent:** 17 October 2016 10:12 AM  
**To:** Jeremy Blood  
**Subject:** Att Jeremy blood /  
**Attachments:** 2016-10-17\_10953.pdf

Goeie dag


Vind aangeheg asb



Afro Energy (Pty) Ltd

APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM  
ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND  
MPUMALANGA PROVINCES (12/3/320 ER)

REGISTRATION AND RESPONSE FORM FOR INTERESTED AND AFFECTED PARTIES

NAME	P. S. KRUSER		
FARM / PROPERTY or ORGANISATION	Ruwimsmede / Christoffelsrust		
POSTAL ADDRESS	Bus. 170 CORNWALLIA		
POSTAL CODE	9850	FAX NUMBER	
TELEPHONE NUMBER		CELL PHONE NUMBER	0829676924
E-MAIL	rnm.psk1@gmail.com		
PREFERRED CORRESPONDENCE (circle)	POST	FAX	<input checked="" type="radio"/> EMAIL <input type="radio"/> SMS
DATE	13/10/2016	SIGNATURE	

DETAILS OF OTHER PEOPLE WHO OWN LAND IN THE AREA OR YOU FEEL SHOULD BE INFORMED:

C. MORRIS Chris@hallreal.co.za  
BRAKSPANTEL & MANCHESTER No. 109 & No. 268

PLEASE IDENTIFY YOUR INTEREST IN THE PROPOSED PROJECT:

GROND-GEENBAAR No. 197 & No. 253

PLEASE WRITE YOUR COMMENTS AND QUESTIONS HERE:

- ① AFHANKLIK VAN SKOON - ONBESOGDELEDE ONDERGRONDSE WATER VIR ABRIATTOIR EN HUISHOUDELIKE GEBRUIK!!
- ② HOOFSAKLIK AFHANKLIK VAN ONDERGRONDSE WATER EN FONTEINE VIR VEE-SUIPTINGS EN HOENDER (BRAAKKUIKENS) BOERDERY!!
- ③ ARSIOLOSIES EN GEOLOGIESE SENSITIEWE GEBIED!

(use additional pages if required)

Please return completed forms to SLR:

Attention: Jeremy Blood

Tel: (021) 461 1118 or Fax: (021) 461 1120 or

E-mail: jblood@slrconsulting.com



Attachment A: List of properties in the Exploration Right area

*BRACKSPRUIT No. 109,  
MANCHESTER No. 268,  
SEBUCU No. 259,*

*Ruimsig No. 197,  
CHARLES DEEL'S RUST No. 253.*

Farm Name	Farm No.	Portion No.	LPI Code
<b>Registration Division: Frankfort Rd</b>			
AANGENAAM	675	0	F01400000000067500000
AANLEG	76	0	F01400000000007600000
ADRIANA	1317	0	F014000000000131700000
AFVAL	948	0	F01400000000094800000
ALBERTA	1426	0	F01400000000142600000
ALPHA	1359	0 (RE)	F014000000000135900000
ANNASDEEL	1399	1	F014000000000139900001
BARENDINA	1291	0	F014000000000129100000
BERSEBA	1368	0	F014000000000136800000
BETHANY	1230	0	F014000000000123000000
BETTAS RUST	1232	0	F014000000000123200000
BETTY'S DEEL A	533	0	F01400000000053300000
BIESJESPAN	361	0	F01400000000036100000
BIESJESPAN A	303	0	F01400000000030300000
BLOENTUIN	357	0	F01400000000035700000
BOOMPLAATS	366	0 (RE)	F01400000000036600000
BRADAM	304	0	F01400000000030400000
<del>BRACKSPRUIT</del>	109	0	F01400000000010900000
BRISTOL	1370	0 (RE)	F014000000000137000000
BUFFELS VLEU	360	1	F014000000000360000001
BURGERS RUST	107	0	F01400000000010700000
CANOSA	1116	0	F014000000000111600000
CATHARINAS VLEY	71	0	F01400000000007100000
CHALKFARM	85	0	F01400000000008500000
CHRISTIANA	679	0	F01400000000067900000
CRISTOFFEL'S RUST	253	0	F01400000000025300000
DAMPPLAATS	1178	0	F014000000000117800000
DAMPPLAATS 'A'	1179	0	F014000000000117900000
DASKLP	1371	0 (RE)	F014000000000137100000

Farm Name	Farm No.	Portion No.	LPI Code
DE HOEK	389	0	F014000000000389000000
DE RUST	616	0	F014000000000616000000
DE WETS HOOP	62	0	F014000000000062000000
DEUSZAM	126	0	F014000000000012600000
DONATIO	904	0 (RE)	F01400000000090400000
DORP FRANKFORT	74	0 (RE)	F01400000000007400000
DRIEHOEK	97	0	F01400000000009700000
DRIEHOEK	1058	0	F01400000000105800000
DRIEHOEK	1334	0	F014000000000133400000
DRIEHOEK A	905	0	F01400000000090500000
DUBLIN	879	0	F014000000000879000000
DUCKVALLEY	96	0	F01400000000009600000
DUNDEE	1233	0 (RE)	F014000000000123300000
ELEM	391	0 (RE)	F014000000000391000000
ELENORA	877	0	F01400000000087700000
ERFDEEL	385	0	F01400000000038500000
F.E.	1186	0	F014000000000118600000
FVIE	579	0	F01400000000057900000
GEDULD	259	0	F01400000000025900000
GELDERLAND	428	0	F01400000000042800000
GELUK	1039	0	F014000000000103900000
GESCHENK	689	0 (RE)	F01400000000068900000
GLASGOW	137	0	F014000000000013700000
GOEDEMOED	1333	0	F014000000000133300000
GOEDGELEGEN	677	0	F01400000000067700000
GOEDGENOEG	603	0 (RE)	F01400000000060300000
GOEDVERWACHT	1095	0	F014000000000109500000
GRANPUNT A	1098	0	F014000000000109800000
GRANPUNT B	1099	0	F014000000000109900000
GRONPLAATS	1384	0 (RE)	F014000000000138400000

Farm Name	Farm No.	Portion No.	LPI Code
GROOTVLEY	136	0 (RE)	F014000000000013600000
GRUIFSOENTEN	514	0	F01400000000051400000
HAMPSTEAD	143	0 (RE)	F014000000000014300000
HELPMIEKAAR	763	0	F01400000000076300000
HENNI'S DEEL	803	0	F01400000000080300000
HERDERDAL	84	0	F01400000000008400000
HIPKINS HOPE	1064	0	F014000000000106400000
HIPKINS VALLEY	1083	0	F014000000000108300000
HOLLAND	808	0	F01400000000080800000
HOLPAN	423	0	F01400000000042300000
HOOGGELEGEN	89	0	F01400000000008900000
JANNESDEEL	666	0 (RE)	F0140000000006660000
JOHANNA	1067	0	F014000000000106700000
JOHANNA	1097	0	F014000000000109700000
KATSPRUIT	147	0 (RE)	F014000000000014700000
KOELFONTEN	1094	0	F014000000000109400000
KRONENDAL	581	0	F01400000000058100000
LAASTERUS	130	0	F01400000000013000000
LENIES DEEL	1292	1	F014000000000129200001
LIBAU	1114	0 (RE)	F0140000000000111400000
LONDON	161	0	F014000000000016100000
LOUIS RUST A	927	0	F01400000000092700000
LOUIS RUST B	928	0	F01400000000092800000
LOUIS RUST C	929	0	F01400000000092900000
MAAGDALENA	1180	0	F014000000000118000000
MAHEM	289	0	F01400000000028900000
<del>MANCHESTER</del>	288	0 (RE)	F01400000000028800000
MARGARETHAS DEEL	1150	0	F014000000000115000000
MARTINUS RUST	764	0	F01400000000076400000
MATHILDE	450	0	F014000000000045000000

## Edwynn Louw

---

**From:** Jaco Hurter <deugsaam@gmail.com>  
**Sent:** 18 October 2016 12:41 PM  
**To:** Jeremy Blood  
**Subject:** Registrasie van belanghebbendes  
**Attachments:** Afro\_Energy320\_BID\_Afr\_Sept16 \_JJH.pdf; Afro\_Energy320\_BID\_Afr\_Sept16\_PSH.pdf

Goeiedag,

Ek heg hierby twee aansoeke van twee verskillende grondeienaars, met die versoek dat u hulle as belanghebbendes registreer in die eksplorasië aansoek (12/3/320 ER).

Dankie

Jaco Hurter

**Afro Energy (Edms) Bpk**

**AANSOEK OM 'N EKSPLORASIEREG VIR PETROLEUM OP 'N  
AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN  
MPUMALANGA PROVINSIES (12/3/320 ER)**

**REGISTRASIE EN KOMMENTAARVORM VIR BELANGHEBBENDE PARTYE**

NAAM	Jaco Hurter		
PLAAS / EIENDOM of ORGANISASIE	Plase: Blydskap en Kleindeel		
POSADRES	Hurter Farming Enterprises		
	Posbus 8, Cornelia		
POSKODE	9850	FAKSNOMMER	
TELEFOONNOMMER		SELFOONNOMMER	0825411640
E-POS	deugzaam@gmail.com		
VOORKEUR KORRESPONDENSIE (merk)	POS	FAKS	E-POS <input checked="" type="checkbox"/> SMS
DATUM	18/10/2016	HANDTEKENING	

**ANDER GRONDEIENAARS IN DIE AREA OF PARTYE WAT U VOEL IN KENNIS GESTEL MOET WORD:**

.....  
.....  
.....

**VERDUIDELIK ASSEBLIEF U BELANG IN DIE VOORGESTELDE PROJEK:**

Grondeienaar  
.....  
.....  
.....

**VERSKAF ASSEBLIEF U KOMMENTAAR EN VRAE HIER:**

Registreer as belanghebbende  
.....  
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.....  
.....  
.....  
.....

(gebruik addisionele bladsye indien nodig)

**Stuur aseblief voltooide vorms aan SLR:**

**Aandag: Jeremy Blood**  
Tel: (021) 461 1119 of Faks: (021) 461 1120 of  
E-pos: jblood@slrconsulting.com

**Afro Energy (Edms) Bpk**

**AANSOEK OM 'N EKSPLORASIENEG VIR PETROLEUM OP 'N  
AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN  
MPUMALANGA PROVINSIES (12/3/320 ER)**

**REGISTRASIE EN KOMMENTAARVORM VIR BELANGHEBBENDE PARTYE**

NAAM	Piet Hurter			
PLAAS / EIENDOM of ORGANISASIE	Plase: Deugszaam en Elim			
POSADRES	Posbus 107			
	Cornelia			
POSKODE	9850	FAKSNOMMER		
TELEFOONNOMMER		SELFOONNOMMER	0827303761	
E-POS				
VOORKEUR KORRESPONDENSIE (merk)	POS	FAKS	E-POS	SMS <input checked="" type="checkbox"/>
DATUM	18/10/2016	HANDTEKENING	PS Hurter	

**ANDER GRONDEIENAARS IN DIE AREA OF PARTYE WAT U VOEL IN KENNIS GESTEL MOET WORD:**

.....  
.....  
.....

**VERUIDELIK ASSEBLIEF U BELANG IN DIE VOORGESTELDE PROJEK:**

Grondeienaar  
.....  
.....  
.....

**VERSKAF ASSEBLIEF U KOMMENTAAR EN VRAE HIER:**

Registreer as belanghebbende .  
.....  
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.....  
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.....  
.....  
.....

(gebruik addisionele bladsye indien nodig)

**Stuur asseblief voltooide vorms aan SLR:**

**Aandag: Jeremy Blood**  
Tel: (021) 461 1119 of Faks: (021) 461 1120 of  
E-pos: jblood@slrconsulting.com

## Edwynn Louw

---

**From:** Ben Travers <bentravers13@gmail.com>  
**Sent:** 19 October 2016 11:18 AM  
**To:** Jeremy Blood  
**Subject:** Afro Energy proposals

Hi Jeremy,

Is there a way to track the progress of the following two proposals or be alerted to changes or acceptance?

Many thanks

Ben

AFRO ENERGY: PROPOSED EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

AFRO ENERGY: PROPOSED EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN THE MPUMALANGA AND KWAZULU-NATAL PROVINCES (12/3/321 ER)

## Edwynn Louw

---

**From:** Ben Travers <bentravers13@gmail.com>  
**Sent:** 19 October 2016 11:29 AM  
**To:** Jeremy Blood  
**Subject:** RE: Afro Energy proposals

Thanks Jeremy

I am a private investor and whilst not based in SA, I have an interest in Afro

Cheers

On 19 Oct 2016 8:23 PM, "Jeremy Blood" <[jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)> wrote:

Dear Ben

Your email below refers.

We will include you on the project databases, and as such will be kept informed of when reports are available for comment and EIA progress.

Please could you send me the organisation you represent (if any), postal address and contact numbers.

Regards

Jeremy

**From:** Ben Travers [mailto:[bentravers13@gmail.com](mailto:bentravers13@gmail.com)]  
**Sent:** 19 October 2016 11:18 AM  
**To:** Jeremy Blood  
**Subject:** Afro Energy proposals

Hi Jeremy,

Is there a way to track the progress of the following two proposals or be alerted to changes or acceptance?


Many thanks



Afro Energy (Pty) Ltd

APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM  
ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND  
MPUMALANGA PROVINCES (12/3/320 ER)

REGISTRATION AND RESPONSE FORM FOR INTERESTED AND AFFECTED PARTIES

NAME	GAYBLACK / PB van Wyk & M van Wyk		
FARM / PROPERTY or ORGANISATION	ZAMENKOMST 400 VR		
POSTAL ADDRESS	P.O. Box 121 DE RUST		
POSTAL CODE	6650	FAX NUMBER	-
TELEPHONE NUMBER	0844417287	CELL PHONE NUMBER	0823589151
E-MAIL	vanwykoo-bgskloof@gmail.com		
PREFERRED CORRESPONDENCE (circle)	POST	FAX	EMAIL SMS
DATE	24/10/16	SIGNATURE	

DETAILS OF OTHER PEOPLE WHO OWN LAND IN THE AREA OR YOU FEEL SHOULD BE INFORMED:

PLEASE IDENTIFY YOUR INTEREST IN THE PROPOSED PROJECT:

PLEASE WRITE YOUR COMMENTS AND QUESTIONS HERE:

Please send information about above project.

(use additional pages if required)

Please return completed forms to SLR:

Attention: Jeremy Blood

Tel: (021) 461 1118 or Fax: (021) 461 1120 or

E-mail: jblood@slrconsulting.com

**APPENDIX 5.8: DRAFT SCOPING REPORT NOTIFICATION LETTERS**

**Draft Scoping report: Notification of Organs of State Authorities**



Project Reference: 722.01083.00003

File Ref. 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR PASA

8 November 2016

General Manager: Regulation Division  
Petroleum Agency SA  
7 Mispel Road  
Tygerpoort Building  
BELLVILLE, 7530

**ATTENTION: MS PHUMLA NGESI**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

Our previous correspondence of 20 September 2016 regarding above-mentioned project refers. This letter provides information on the availability for comment of the Scoping Report prepared for the above-mentioned project.

Notice is also hereby given, in terms of the National Environmental Management Act, 1998 (No. 107 of 1998), as amended, that a Scoping Report has been made available for a 30-day public review and comment period from **9 November to 9 December 2016**. Enclosed please find a hard copy of the Scoping Report for your consideration.

Please do not hesitate to contact the undersigned should you have any queries in this regard.

Yours sincerely

Jeremy Blood Pr.Sci.Nat., CEAPSA

**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**

SLR Consulting (South Africa) (Proprietary) Limited

[www.slrc consulting.com](http://www.slrc consulting.com)

Registered Address: Unit 7 Fourways Manor Office Park, 1 Abchurch Avenue, Fourways, 2198

Postal address: PO Box 1596, Craemerweg, 2060, South Africa

Reg. No.: 2007/005517/07 VAT No.: 463042156

Fourways Office: Physical address: Unit 7 Fourways Manor Office Park, 1 Abchurch Ave., Fourways / Postal address: P.O. Box 1596, Craemerweg, 2060 / T: +27 11 467 0945 / F: +27 11 467 0978

Cape Town Office: Unit 35, Riebel Square, 30 Oude Linn, Cape Town / Postal address: P.O. Box 10115, Cathedral Square, 7905 / T: +27 21 401 1115 / F: +27 21 461 1120

Somerat West Office: Unit D1, Building 5, Fairways Office Park, Nilock Way, Somerat West / T: +27 71 857 3348

**SABS**  
1 5 0 9 0 0 1

Directors: B. Stewart, F. Fredericks, K. Pretorius

PLEASE SIGN AND FAX OR EMAIL TO 021 461 1120 OR  
[lsolomons@slrconsulting.com](mailto:lsolomons@slrconsulting.com)

## ACKNOWLEDGEMENT OF RECEIPT

AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION  
OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

APPLICATION FOR ENVIRONMENTAL AUTHORISATION

1 HARD COPY AND 1 CD

AND

NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT

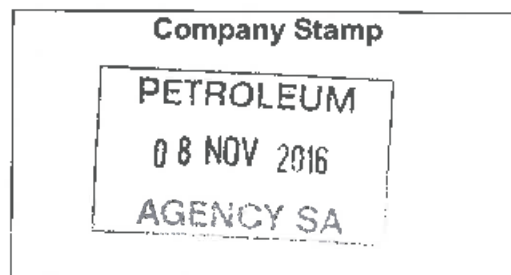
1 HARD COPY

Received by (print name): I. ABDULLAH for Petroleum Agency

SA  
(Ms Phumla Ngesi)

Signature: 

Date: 8/11/2016



8 November 2016

Municipal Manager  
Mafube Local Municipality  
64 JJ Hadebe Street  
FRANKFORT, 9830

**ATTENTION: MR ANDREW HLUBI**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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Any comments on the Scoping report should be forwarded to SLR at the address, telephone/fax numbers or e-mail address shown below. For comments to be included in the updated Scoping Report, comments should reach SLR by **no later than 9 December 2016**.

**SLR Consulting (South Africa) (Pty) Ltd**

Attention: Jeremy Blood

PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**



Track this shipment: [dhl.com](http://dhl.com)  
**Shipment Waybill**  
(Not negotiable)

**DHL** Express

0417  
**30 3514 2596**

ORIGIN

DESTINATION CODE  
 5115

**1 Payer account number and insurance details**

Charge to  Shipper  Receiver  3rd party

Payer Account No. \_\_\_\_\_

Shipment Insurance: see reverse

Yes Insured value (in local currency) \_\_\_\_\_

Not all payment options are available in all countries. GO services.com

**2 From (Shipper)**

Shipper's account number \_\_\_\_\_ Contact name \_\_\_\_\_

Shipper's reference (up to 32 characters - first 12 will be shown on invoice) \_\_\_\_\_

Company name \_\_\_\_\_

Address \_\_\_\_\_

Postcode/Zip Code (required) \_\_\_\_\_ Phone, Fax or E-mail (required) \_\_\_\_\_

**3 Products & Services**

Domestic:  International Document   
 International Non-Domestic

Products listed are available for use on all services and packages and always bear the restriction only and are not binding on DHL.

EXPRESS 9.00   
 EXPRESS 10.00   
 EXPRESS 12.00

EXPRESS / WORKFLOW   
 EXPRESS ENVELOPE   
 ECONOMY SELECT   
 OTHER

Special Services (extra charges may apply):  
 Saturday Delivery  Hold for Collection   
 Delivery Notification  Returnable Packaging   
 Other

GlobalSend Business   
 Priority  Standard  Other

**4 Shipment details** gross weight is calculated from total weight and dimensions

Total number of packages	Total Weight	Dimensions in cm		
		Length	Width	Height
1	1.5 kg	22	12	5
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**5 Full description of contents**

Give content and quantity

1 copy of invoice

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a Proforma or Commercial invoice

Receiver's VAT/GST or Shipper's EIN/SSN \_\_\_\_\_

Declared Value for Customs (as on commercial/proforma invoice) \_\_\_\_\_

Harmonised Commodity Code if applicable \_\_\_\_\_

TYPE OF EXPORT  Permanent  Repair/Return  Temporary

Destination duties/taxes if not billed receiver pays duties/taxes

Receiver  Shipper  Other \_\_\_\_\_

**7 Shipper's agreement (Signature required)**

Unless otherwise agreed in writing, I/We agree that DHL's Terms and Conditions of Carriage are all the terms of the contract between us and DHL and I/We such Terms and Conditions and, where applicable, the Warsaw or Montreal Convention limits and/or excludes DHL's liability for loss, damage or delay and I/We this shipment does not contain cash or dangerous goods (see reverse).

Signature \_\_\_\_\_ Date \_\_\_\_\_

**3 To (Receiver)**

Company name \_\_\_\_\_

Delivery address (DHL cannot deliver to a PO Box)

Country \_\_\_\_\_

Postcode/Zip Code (required) \_\_\_\_\_

Contact person \_\_\_\_\_ Phone, Fax or E-mail (required) \_\_\_\_\_

**8 Charges**

Other \_\_\_\_\_

Insurance \_\_\_\_\_

VAT \_\_\_\_\_

CURRENCY TOTAL \_\_\_\_\_

PAYMENT DETAILS (Cheque, Card No.) \_\_\_\_\_

No. : \_\_\_\_\_

Type \_\_\_\_\_ Expires \_\_\_\_\_

Picked up by \_\_\_\_\_

Route No. \_\_\_\_\_

Time \_\_\_\_\_ Date \_\_\_\_\_



8 November 2016

Municipal Manager  
Lekwa Local Municipality  
C/o Mbonani Mayisela and Dr Bayers Naude Streets  
STANDERTON, 2430

**ATTENTION: MR LINDA TSHABALALA**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

Our previous correspondence of 20 September 2016 regarding above-mentioned project refers. This letter provides information on the availability for comment of the Scoping Report prepared for the above-mentioned project.

Notice is hereby given, in terms of the National Environmental Management Act, 1998 (No. 107 of 1998), as amended, that a Scoping Report has been made available for a 30-day public review and comment period from **9 November to 9 December 2016**. Enclosed please find a hard copy of the Scoping Report for your consideration.

Any comments on the Scoping report should be forwarded to SLR at the address, telephone/fax numbers or e-mail address shown below. For comments to be included in the updated Scoping Report, comments should reach SLR by **no later than 9 December 2016**.

**SLR Consulting (South Africa) (Pty) Ltd**  
Attention: Jeremy Blood  
PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**



DHL Express

Track this shipment: [dhl.com](http://dhl.com)

Shipment Waybill

(Non-refundable)**1 Payer account number and insurance details**

Charge to  Shipper  Receiver  3rd party  Cash

Payer Account No.  Cheque

Credit Card

Shipment Insurance see reverse

Yes Insured value Not all payment options are available in all countries. CC reference code

No in local currency

**2 From (Shipper)**

Shipper's account number: \_\_\_\_\_

Contact name: \_\_\_\_\_

Shipper's reference (up to 32 characters - first 12 will be shown on invoice): \_\_\_\_\_

Company name: *PLAZA INTERNATIONAL EUROPE*

Address: *LAURENCE KALBETH STR. 1175  
FRANKFURT AM MAIN - 60528 FRANKFURT  
GERMANY*

Postcode/Zip Code (required): \_\_\_\_\_

Phone, Fax or E-mail (required): \_\_\_\_\_

**3 To (Receiver)**

Company name: \_\_\_\_\_

Delivery address (DHL cannot deliver to a PO Box): \_\_\_\_\_

Postcode/Zip Code (required): \_\_\_\_\_

Country: \_\_\_\_\_

Contact person: \_\_\_\_\_

Phone, Fax or E-mail (required): \_\_\_\_\_

ORIGIN

10417

30 3514 2622

**4 Shipment details** Rated weight is calculated from total weights and dimensions.

Total number of packages	Total Weight	Dimensions in cm		
		Length	Width	Height
1	1 kg	@	@	@
	gr.	X	X	X
		@	X	X
		@	X	X
		@	X	X

**5 Full description of contents**

Give content and quantity

*Copying report 81*

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a Proforma or Commercial Invoice

Receiver's VAT/GST number: \_\_\_\_\_

Receiver's VAT/GST or Shipper's EIN/SSN: \_\_\_\_\_

Declared Value for Customs (as on commercial/proforma invoice): \_\_\_\_\_

Harmonised Commodity Code if applicable: \_\_\_\_\_

TYPE OF EXPORT

Permanent  Repair/Return  Temporary

Destination duties/taxes if left blank receiver pays duties/taxes

Receiver  Shipper  Other

IS 9507-2000/01 account number

**7 Shipper's agreement (Signature required)**

Use only when shipping. I agree that DHL's Terms and Conditions of Carriage are all the terms of the contract between me/us and DHL and (1) such terms and conditions and, where applicable, the Warsaw or Montreal Convention limits and/or excludes DHL's liability for loss, damage or delay and (2) this shipment does not contain cash or dangerous goods (see reverse).

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

DESTINATION CODE

03

**8 Products & Services**

Domestic  International Document

Insured  Non-Document

Products and services are available only for certain countries and delivery services are not available in all countries.

EXPRESS 9000

EXPRESS 9030

EXPRESS 1200

EXPRESS / WORLDWIDE

EXPRESS ENVELOPE

ECONOMY SELECT

OTHER

Official Services (extra charges may apply)

Saturday Delivery  Hold for Collection

Delivery Notifications  Payable Packaging

Other \_\_\_\_\_

Global Business

Priority  Standard  Other

kg • gr

DIMENSIONAL/CHARGEABLE WEIGHT

kg • gr

CHARGES Services

Other

Insurance

VAT

CURRENCY TOTAL

PAYMENT DETAILS (Cheque, Card No.)

No.:

Type Expires

Picked up by

Route No.

Time

Date

Time

Date

Date

Date

Date

Date

Date

Date

Date

Date

Date

Date

Date

Date

Date

Date

8 November 2016

Acting Chief Director: Compliance Monitoring  
Department of Water and Sanitation  
Sedibeng Building,  
185 Francis Baard Street  
PRETORIA, 0001

**ATTENTION: MS ANET MUIR**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

Our previous correspondence of 20 September 2016 regarding above-mentioned project refers. This letter provides information on the availability for comment of the Scoping Report prepared for the above-mentioned project.

Notice is hereby given, in terms of the National Environmental Management Act, 1998 (No. 107 of 1998), as amended, that a Scoping Report has been made available for a 30-day public review and comment period from **9 November to 9 December 2016**. Enclosed please find a hard copy of the Scoping Report for your consideration.

Any comments on the Scoping report should be forwarded to SLR at the address, telephone/fax numbers or e-mail address shown below. For comments to be included in the updated Scoping Report, comments should reach SLR by **no later than 9 December 2016**.

**SLR Consulting (South Africa) (Pty) Ltd**  
Attention: Jeremy Blood  
PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**





8 November 2016

Regional Manager  
Department of Mineral Resources  
Province House  
C/o Paul Kruger & Botha Street  
EMALAHLENI, 1035

**ATTENTION: MR AUBREY TSHIVHANDEKANO****AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

Our previous correspondence of 20 September 2016 regarding above-mentioned project refers. This letter provides information on the availability for comment of the Scoping Report prepared for the above-mentioned project.

Notice is hereby given, in terms of the National Environmental Management Act, 1998 (No. 107 of 1998), as amended, that a Scoping Report has been made available for a 30-day public review and comment period from **9 November to 9 December 2016**. Enclosed please find a copy of the Executive Summary and an electronic copy of the Scoping Report for your consideration. It should be noted that a copy of the Scoping Report has also been sent to the Petroleum Agency of South Africa (PASA).

Any comments on the Scoping report should be forwarded to SLR at the address, telephone/fax numbers or e-mail address shown below. For comments to be included in the updated Scoping Report, comments should reach SLR by **no later than 9 December 2016**.

**SLR Consulting (South Africa) (Pty) Ltd**

Attention: Jeremy Blood

PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA

**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**

Track this shipment: **dhl.com**  
**30 3514 2670** [0417]

ORIGIN  
 DESTINATION CODE  
 266

**1 Payer account number and insurance details**

Charge to  Shipper  Receiver  3rd party

Payer Account No. \_\_\_\_\_

Payment Method:  Cash  Cheque  Credit Card

Shipment Insurance: see reverse

Yes *Insured value*  No *all payment obligations are assumed by the sender in all countries.*

**2 From (Shipper)**

Shipper's account number: 26619136

Contact name: F. ...

Shipper's reference (up to 32 characters - first 12 will be shown on invoice):

Company name: 1810 ENVIRONNEMENTAL SHIPPING

Address: 695 AVENUE DE LA MAISONNEURIE, 11010  
 FERRIERES, 54000, FRANCE

Postcode/Zip Code (required): 54000

Phone, Fax or E-mail (required): 03 83 67 01 00

**3 To (Receiver)**

Company name: ...

Delivery address (DHL cannot deliver to a PO Box):  
 1810 ENVIRONNEMENTAL SHIPPING  
 695 AVENUE DE LA MAISONNEURIE  
 FERRIERES, 54000, FRANCE

Country: FRANCE

Postcode/Zip Code (required): 54000

Contact person: ...

Phone, Fax or E-mail (required): 03 83 67 01 00

**4 Shipment details**  *billed weight is calculated from total weight and dimensions*

Total number of packages	Total Weight	Pieces	Length	Width	Height
1	kg	①	X	X	X
		gr	X	X	X
		②	X	X	X
		③	X	X	X
		④	X	X	X

**5 Full description of contents**

Give content and quantity

Grouping boxset (D XI)

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a Proforma or Commercial Invoice

Receiver's VAT/GST or Shipper's EIN/SSN

Declared Value for Customs (as on commercial/proforma invoice):

Harmonised Commodity Code if applicable:

Destination duties/taxes: If left blank receiver pays duties/taxes

Receiver  Shipper  Other

**TYPE OF EXPORT**

Permanent  Repair/Return  Temporary

**7 Shipper's agreement (Signature required)**

Unless otherwise agreed in writing, I/We agree that DHL's Terms and Conditions of Carriage apply to all the terms of the contract between me and DHL and I/11 such terms and conditions and, where applicable, the Warsaw or Montreal Convention limits and/or excludes DHL's liability for loss, damage or delay and I/11 this shipment does not contain cash or dangerous goods (see reversal).

Signature: \_\_\_\_\_ Date: 04/17/2011

**8 Products & Services**

Domestic:  International Document  International Non-Docum

Other services (see DHL website for details):  Signature Required  Insured  Fragile  Restricted  Priority  Collect  Return  Signature  Signature  Signature  Signature

EXPRESS 3000  EXPRESS 10.30  EXPRESS 12.00

EXPENSE: WORK/LIVE  EXPRESS INVOLVE  ECONOMY SELECT  OTHER

Optional Services (extra charges may apply):  Saturday Delivery  Held for Collection  Delivery Reiteration  Insurable Packaging  Other

GlobalPost Business:  Priority  Standard  Other

DIMENSIONAL/CHARGEABLE WEIGHT

kg

**CHARGES SERVICES**

Other: \_\_\_\_\_

Insurance: \_\_\_\_\_

VAT: \_\_\_\_\_

CURRENCY: \_\_\_\_\_ TOTAL: \_\_\_\_\_

**PAYMENT DETAILS** (Cheque, Card No. \_\_\_\_\_)

No.:

Type: \_\_\_\_\_ Expires: \_\_\_\_\_

Picked up by: \_\_\_\_\_

Route No. \_\_\_\_\_

Time: \_\_\_\_\_ Date: \_\_\_\_\_

8 November 2016

Regional Manager  
Department of Mineral Resources  
The Strip, 314  
c/o Stateway and Bok Street  
WELKOM, 9459

**ATTENTION: MR ZINDELA NDLELENDHLE****AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

Our previous correspondence of 20 September 2016 regarding above-mentioned project refers. This letter provides information on the availability for comment of the Scoping Report prepared for the above-mentioned project.

Notice is hereby given, in terms of the National Environmental Management Act, 1998 (No. 107 of 1998), as amended, that a Scoping Report has been made available for a 30-day public review and comment period from **9 November to 9 December 2016**. Enclosed please find a copy of the Executive Summary and an electronic copy of the Scoping Report for your consideration. It should be noted that a copy of the Scoping Report has also been sent to the Petroleum Agency of South Africa (PASA).

Any comments on the Scoping report should be forwarded to SLR at the address, telephone/fax numbers or e-mail address shown below. For comments to be included in the updated Scoping Report, comments should reach SLR by **no later than 9 December 2016**.

**SLR Consulting (South Africa) (Pty) Ltd**

Attention: Jeremy Blood

PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA

**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**



Track this shipment: [dhl.com](http://dhl.com)  
**Shipment Waybill**  
(Non negotiable)

30 3514 2655

ORIGIN

DESTINATION CODE

**1 Payer account number and insurance details.**

Charge to:  Shipper  Receiver  3rd party  Cash  Cheque  Credit Card

Payer Account No. \_\_\_\_\_

Not all payment options are available in all countries. © 2009 dhl.com

Shipment Insurance see reverse.  
 Yes (insured value)  No

**2 From (Shipper)**

Shipper's account number: 30300120

Contact name: FERRARIS

Shipper's reference (up to 32 characters - first 12 will be shown on invoice): 72000000000000000000

Company name: INDUSTRIAL ENVIRONMENTAL ENGINEERS

Address: 2000 HILLS & MOUNTAINS ETH. UNIT 2000 HILLS & MOUNTAINS ETH. UNIT 2000 HILLS & MOUNTAINS ETH. UNIT 2000 HILLS & MOUNTAINS ETH. UNIT

Postcode/Zip Code (required): 2152

Phone, Fax or E-mail (required): 011 457 0941

**3 To (Receiver)**

Company name: Dept - Personal Receiver (26)

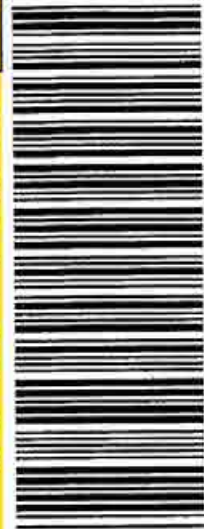
Delivery address (DHL cannot deliver to a PO Box): The Silver World, c/o Goldway Pty and Pk attached walkway, 7

Postcode/Zip Code (required): 2152

Country: S.A

Contact person: 2000 HILLS & MOUNTAINS ETH. UNIT 2000 HILLS & MOUNTAINS ETH. UNIT 2000 HILLS & MOUNTAINS ETH. UNIT 2000 HILLS & MOUNTAINS ETH. UNIT

Phone, Fax or E-mail (required): 011 457 0941



**4 Shipment details** - billed weight is calculated from total weight and dimensions

Total number of packages	Pieces	Length	Width	Height
1	1	50	30	30
kg	gf			

**5 Full description of contents**

Give content and quantity

50000000000000000000 (D X 1)

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a Proforma or Commercial Invoice

Shipper's VAT/GST number: Receiver's VAT/GST or Shipper's EIN/SSN

Declared Value for Customs (as on commercial/proforma invoice)

Harmonised Commodity Code if applicable

TYPE OF EXPORT  
 Permanent  Repair/Return  Temporary

Destination duties/taxes (if left blank receiver pays duties/taxes)  
 Receiver  Shipper  Other

**7 Shipper's agreement (Signature required)**

I, the undersigned, hereby agree to the terms and conditions of carriage set out in the terms of the contract between me/us and DHL and (if) such terms and conditions and, where applicable, the Warsaw or Montreal Convention limits and/or excludes DHL's liability for loss, damage or delay and (2) this shipment does not contain cash or dangerous goods (see reverse).

Signature: [Signature]

Date: 2011/11/20

**8 Products & Services**

Domestic  International Document  International Non-Domestic

Products that are suitable for air freight are subject to applicable regulations and subject to delivery times in remote areas and are not loading on ABL.

EXPRESS 8-00  EXPRESS 10-30  EXPRESS 12-00  EXPRESS / WORLDWIDE  ECONOMY SELECT  OTHER

Optional Services (extra charges may apply):  
 Saturday Delivery  Hold for Collection  Delivery Notification  Fragile Packaging  Other

Globalmail Business:  Priority  Standard  Other

DIMENSIONAL/CHARGEABLE WEIGHT

kg • gf

CHARGES:

Services

Other

Insurance

VAT

CURRENCY TOTAL

PAYMENT DETAILS (Cheque, Card No.)

No.:

Type Expires

Picked up by

Route No.

Time Date

8 November 2016

Department of Agriculture, Forestry and Fisheries  
Omni Building, 1<sup>st</sup> Floor  
73 Aliwal Street  
BLOEMFONTEIN, 9301

**ATTENTION: MR PAUL MAZWI**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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Any comments on the Scoping report should be forwarded to SLR at the address, telephone/fax numbers or e-mail address shown below. For comments to be included in the updated Scoping Report, comments should reach SLR by **no later than 9 December 2016**.

**SLR Consulting (South Africa) (Pty) Ltd**

Attention: Jeremy Blood

PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**

30 3514 2530

ORIGIN

DESTINATION CODE

**1 Payer account number and insurance details**Charge to  Shipper  Receiver  3rd partyPayer Account No.  Cash  Cheque  Credit Card

Shipment Insurance see reverse

 Yes (insured value for local consignment)  No (all payment available in all countries) EU reference code**2 From (Shipper)**

Shipper's account number

Contact name

Shipper's reference (up to 32 characters - first 12 will be shown on invoice)

Company name

Address

Postcode/Zip Code (required)

Phone, Fax or E-mail (required)

**3 To (Receiver)**

Company name

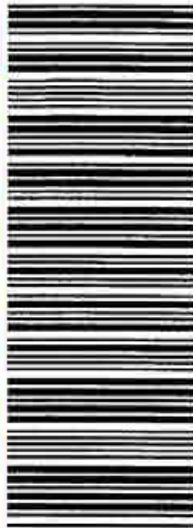
Delivery address (DHL cannot deliver to a PO Box)

Postcode/Zip Code (required)

Country

Contact person

Phone, Fax or E-mail (required)

**4 Shipment details**  billed weight is calculated from total weight and dimensions

Total number of packages	Total Weight	Dimensions in cm		
		Pieces	Length	Width
1	kg	@	@	@
	gr			

**5 Full description of contents**

Give content and quantity

Copying machine X1

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a Proforma or Commercial invoice

Shipper's VAT/GST number

Receiver's VAT/GST or Shipper's EIN/SSN

Declared Value for Customs (as on commercial/proforma invoice)

Harmonised Commodity Code if applicable

Destination duties/taxes if left blank receiver pays duties/taxes

TYPE OF EXPORT

 Permanent  Repair/Return  Temporary Receiver  Shipper  Other Specify appropriate account number**7 Shipper's agreement (Signature required)**

Unless otherwise agreed in writing, I/we agree that DHL's Terms and Conditions of Carriage are all the terms of the contract between me/us and DHL and I/1 such Terms and Conditions and, where applicable, the Warsaw or Montreal Convention limits and/or excludes DHL's liability for loss, damage or delay and I/1 this shipment does not contain cash or dangerous goods (see reverse).

Signature

Date

Time

**8 Products & Services**

- Domestic  International Document
- International Mail Documents
- Products not all available in all parts of Europe and not available in all countries. See DHL website for full details.
- EXPRESS 200
- EXPRESS 10:30
- EXPRESS 12:00
- EXPRESS WORLDWIDE
- EXPRESS ENVELOPE
- ECONOMY SELECT
- OTHER:

- Optional Services (extra charges may apply)
- Saturday Delivery  Holds for Collection
- Delivery Notification  Package Packaging
- Other
- Globalmail Business
- Priority  Standard  Other

DIMENSIONAL/CHARGEABLE WEIGHT

kg • gr

CHARGES

Services

Other

Insurance

VAT

CURRENCY

TOTAL

PAYMENT DETAILS (Cheque, Card No.)

No.:

Type

Expires

Picked up by

Route No.

Time

Date

8 November 2016

Municipal Manager  
Thabo Mofutsanyana District Municipality  
1 Mampoi Street  
Old Parliament Building  
PHUTHADITJHABA, 9869

**ATTENTION: TAKATSO LEBENYA**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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**SLR Consulting (South Africa) (Pty) Ltd**  
Attention: Jeremy Blood  
PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**



Track this shipment: **dhl.com**  
**Shipment Waybill**  
(Non-Regulatory)

30 3514 2644  
(From Regulatory)

ORIGIN

DESTINATION CODE

**1 Payer account number and insurance details**

Charge to:  Shipper  Receiver  3rd party

Payer Account No.  Cash  Cheque  Credit Card

Shipment Insurance see reverse. Net all payment options are available in all countries. © 2000 DHL

Yes Insured Value (in local currency)

**2 From (Shipper)**

Shipper's account number

Contact name

Shipper's reference (up to 32 characters - first 12 will be shown on invoice)

Company name

METALCO ENVIRONMENTAL SOLUTIONS

Address

6000 ROUTE 11 MADISON ST. UNIT 100  
 FARMWAY HANCOCK OFFICE PARK  
 FARMWAY

Postcode/Zip Code (required)

Phone, Fax or E-mail (required)

**3 To (Receiver)**

Company name

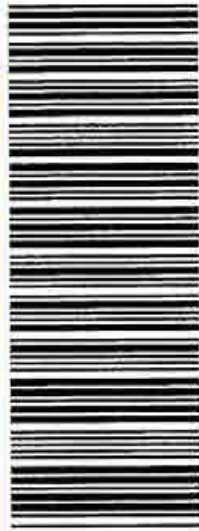
Delivery address (DHL cannot deliver to a PO Box)

Postcode/Zip Code (required)

Country

Contact person

Phone, Fax or E-mail (required)



**4 Shipment details**

Applied weight is calculated from total weight and dimensions.

Total number of packages	Total Weight	Pieces	Length	Width	Height
1	1 kg	1	30	35	14

**5 Full description of contents**

Give content and quantity

one DHL waybill 1

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a Proforma or Commercial Invoice

Shipper's VAT/GST number Receiver's VAT/GST or Shipper's EIN/SSN

Declared Value for Customs (as on commercial proforma invoice)

Harmonised Commodity Code if applicable

Destination duties/taxes if left blank receiver pays duties/taxes

TYPE OF EXPORT  Permanent  Repair/Return  Temporary

Receiver  Shipper  Other (shipper approved account number)

**7 Shipper's agreement (Signature required)**

Under the terms of the contract between me/us and DHL and (1) such terms and conditions and, where applicable, the Warsaw or Montreal Convention limits and/or excludes DHL's liability for loss, damage or delay and (2) this shipment does not contain cash or dangerous goods (see reverse).

Signature

Date

11/1/2004

**8 Products & Services**

Document  International Document

International Non Document

For details of the weight and volume of contents and applicable additional charges, see the applicable rate card and the applicable rate DML

EXPRESS 949

EXPRESS 1030

EXPRESS 1230

EXPRESS / WORLDWIDE

EXPRESS ENVELOPE

ECONOMY SELECT

OTHER

Global Services (extra charges may apply)

Saturday Delivery  Hold for Collection

Delivery Modification  Payable Packaging

Other

GlobalMail Business

Priority  Standard  Other

DIMENSIONAL/CHARGEABLE WEIGHT

kg • gr

CHARGES Services

Other

Insurance

VAT

CURRENCY TOTAL

PAYMENT DETAILS (Cheque, Card No.)

No.:

Type Expires

Picked up by

Route No.

Time Date



Project Reference: 722.01083.00003

File Ref. 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR DWS MP

8 November 2016

Acting Chief Director  
Department of Water and Sanitation  
Prorum Building  
C/o Brown and Paul Kruger Streets  
NELSPRUIT, 1200

**ATTENTION: MR M MULAUDZI**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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Any comments on the Scoping report should be forwarded to SLR at the address, telephone/fax numbers or e-mail address shown below. For comments to be included in the updated Scoping Report, comments should reach SLR by **no later than 9 December 2016**.

**SLR Consulting (South Africa) (Pty) Ltd**  
Attention: Jeremy Blood  
PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely

Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**

SLR Consulting (South Africa) [Proprietary] Limited

[www.slrconsulting.com](http://www.slrconsulting.com)

Registered Address: Unit 7 Fourways Manor Office Park, 1 Macbeth Avenue, Fourways, 2191  
Postal address: PO Box 1596, Cramerville, 2060, South Africa  
Reg. No.: 2007/005517/07 VAT No.: 4630242198

Fourways Office: Physical address: Unit 7 Fourways Manor Office Park, 1 Macbeth Ave, Fourways / Postal address: P O Box 1596, Cramerville, 2060 / T: +27 11 467 0945 / F: +27 11 467 0978  
Cape Town Office: Unit 39, Roeland Square, 30 Drury Lane, Cape Town / Postal address: P O Box 10145, Caledon Square, 7905 / T: +27 21 461 1118 / F: +27 21 461 1120  
Somerset West Office: Unit D3, Building 5, Fairways Office Park, Niblick Way, Somerset West / T: +27 21 851 3348

**SABS**  
ISO 9001

Directors: B Stobart, F Fredericks, K Pieterse

Track this shipment: [dhl.com](http://dhl.com)**DHL Express****Shipment Waybill**  
(non-negotiable)**1 Payer account number and insurance details**

Charge to  Shipper  Receiver  3rd party  Cash  Cheque  Credit Card

Payer Account No. \_\_\_\_\_

Shipment Insurance see reverse  
 Yes (insured value in local currency)  No (all payment available in all countries) EE - electronic funds

**2 From (Shipper)**

Shipper's account number 3035142471 Contact name Estimote

Shipper's reference (up to 32 characters - first 12 will be shown on invoice)

772 0123 00003

Company name  
METALAB ENVIRONMENTAL ENGINEERING

Address  
ONE HOUSE & MARLBETH STR, UNIT  
FOURWAYS MANOR OFFICE PARK  
FOURWAYS

Postcode/Zip Code (required) 2145 Phone, Fax or E-mail (required) 011 957 0000**3 To (Receiver)**

Company name Metasploit

Delivery address (DHL cannot deliver to a PO Box)  
PO Box 101, 1st Floor, 1st Floor, 1st Floor  
1st Floor, 1st Floor, 1st Floor, 1st Floor  
1st Floor, 1st Floor, 1st Floor, 1st Floor  
1st Floor, 1st Floor, 1st Floor, 1st Floor

Postcode/Zip Code (required) 1200 Country USA

Contact person M. Ruben Phone, Fax or E-mail (required) 001 212 777 7777

ORIGIN

**DHL**  
**30 3514 2471**DESTINATION CODE  
EE**3 Shipment details** *Bill of lading is extracted from total weight and dimensions*

Total number of packages	Total Weight kg	Dimensions in cm	Pieces	Length	Width	Height
1	1		0	X	X	X
			0	X	X	X
			0	X	X	X
			0	X	X	X

**3 Full description of contents**

Give content and quantity

2 copies laptop + X1**6 Non-Document Shipments Only (Customs Requirement)**Attach the original and two copies of a Proforma or Commercial Invoice  
Shipper's VAT/GST number \_\_\_\_\_ Receiver's VAT/GST or Shipper's EIN/SSN \_\_\_\_\_

Declared Value for Customs (as on commercial/proforma invoice) \_\_\_\_\_ Harmonised Commodity Code if applicable \_\_\_\_\_

Destination duties/taxes if left blank receiver pays duties/taxes  
 Receiver  Shipper  Other \_\_\_\_\_TYPE OF EXPORT  
 Permanent  Repair/Return  Temporary

Special attention, account number \_\_\_\_\_

**7 Shipper's agreement (Signature required)**

Unless otherwise agreed in writing (We agree that DHL's Terms and Conditions of Carriage set out the terms of the contract between meta and DHL and (1) such Terms and Conditions and, where applicable, the Warsaw or Montreal Convention limits and/or excludes DHL's liability for loss, damage or delay and (2) this shipment does not contain cash or dangerous goods (see reverse).

Signature \_\_\_\_\_ Date 11/11/2016**8 Products & Services** Domestic  International Document  International Non-Docume

This bill of lading is subject to the terms and conditions of carriage set out in the contract of carriage for air, surface and sea transport and in the applicable DHL

EXPRESS 940

EXPRESS 1030

EXPRESS 1200

EXPRESS / HOME CHARGE

EXPRESS ENVELOPE

ECONOMY SELECT

Other \_\_\_\_\_

Optional Services (extra charges may apply)

Saturday Delivery  Hold for Collection Delivery Not Location  Pallet Packaging 

Other \_\_\_\_\_

Global Mail Business Priority  Standard  Other \_\_\_\_\_

DIMENSIONAL/CHARGEABLE WEIGHT

kg \_\_\_\_\_

CHARGES

Services \_\_\_\_\_

Other \_\_\_\_\_

Insurance \_\_\_\_\_

VAT \_\_\_\_\_

CURRENCY TOTAL \_\_\_\_\_

PAYMENT DETAILS (Cheque, Card No.) \_\_\_\_\_

No. 1 \_\_\_\_\_

Type \_\_\_\_\_ Expires \_\_\_\_\_

Picked up by \_\_\_\_\_

Route No. \_\_\_\_\_

Time \_\_\_\_\_ Date \_\_\_\_\_



8 November 2016

Municipal Manager  
Fezile Dabi District Municipality  
John Vorster Road  
SASOLBURG, 1947

**ATTENTION: LM MOLIBELI**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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**SLR Consulting (South Africa) (Pty) Ltd**  
Attention: Jeremy Blood  
PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**



8 November 2016

Municipal Manager  
Gert Sibande District Municipality  
C/o Joubert and Oosthuise Streets  
ERMELO, 2350

**ATTENTION: CA HABILE**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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Attention: Jeremy Blood  
PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**

\*Track this shipment: [dhl.com](http://dhl.com)

**1 Payer account number and insurance details**

Charge to  Shipper  Receiver  3rd party  Cash  Cheque  Credit Card

Payer Account No. \_\_\_\_\_

Shipment insurance  see reverse  Not all payment methods are available in all countries. See reverse for details.

Yes Insured value  No

**2 From (Shipper)**

Shipper's account number \_\_\_\_\_ Contact name *F. M. ...*

Shipper's reference (up to 32 characters - first 12 will be shown on invoice) *7221054 00003*

Company name *RETAPO SPVTRUMENTAL EMIS TRAD*

Address *GENS MOYS A MACBETH STR UNIT 101  
 FULLWAYS PARADISE OFFICE PARK  
 FULLWAYS*

Postcode/Zip Code (required) \_\_\_\_\_ Phone, Fax or E-mail (required) *011 667 687*

**3 To (Receiver)**

Company name \_\_\_\_\_

Delivery address (DHL cannot deliver to a PO Box)  
*Coast Esplanade, Port of Spain  
 No. 70000001  
 Douglas Adams  
 FERMELO*

Postcode/Zip Code (required) \_\_\_\_\_ Country *SA*

Contact person *ERMELO* Phone, Fax or E-mail (required) *07601700*

ORIGIN **0417**  
**30 3514 2633**



**4 Shipment details** Billed weight is calculated from total weight and dimensions

Total number of packages	Total Weight	Dimensions in cm	Prices	Length	Width	Height
1	1.0 kg	gr	@	X	X	X
			@	X	X	X
			@	X	X	X
			@	X	X	X

**5 Full description of contents**

Give content and quantity  
*Accessories report XI*

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a *Proforma* or *Commercial Invoice*

Receiver's VAT/GST or Shipper's EIN/SSN \_\_\_\_\_

Declared Value for Customs (as on commercial/proforma invoice) \_\_\_\_\_

Harmonised Commodity Code if applicable \_\_\_\_\_

**7 Shipper's agreement (Signature required)**

Unless otherwise agreed in writing, I/we agree that DHL's Terms and Conditions of Carriage, as of the terms of the contract between me/us and DHL and (2) such Terms and Conditions and where applicable, the Warsaw or Montreal Convention limits and/or exclude DHL's liability for loss, damage or delay and (3) this shipment does not contain cash or dangerous goods (see reverse).

Destination duties/taxes if left blank, receiver pays duties/taxes

Receiver  Shipper  Other

TYPE OF EXPORT  
 Permanent  Repair/Return  Temporary

Signature \_\_\_\_\_ Date *08/11/2008*

DESTINATION CODE *20*

**8 Products & Services**

Domestic  International Document  International Non-Documents

For details, see all services available in your country and with applicable restrictions on the reverse side of this waybill.

EXPRESS 9.00  EXPRESS 11.30  EXPRESS 12.00  EXPRESS / NORMALIZE  EXPRESS ENVELOPE  ECONAMY SELECT  OTHER

Optional Services (extra charges may apply)  
 Saturday Delivery  Hold for Collection  Delivery Notification  Payable Packaging  Other

Global Mail Business  Priority  Standard  Other

**9 DIMENSIONAL/CHARGEABLE WEIGHT**

kg • g

CHARGES  
 Services  Other

Insurance

VAT

CURRENCY TOTAL

**PAYMENT DETAILS (Cheque, Card No.)**

No. : \_\_\_\_\_

Type Expires

Picked up by \_\_\_\_\_  
 Route No. \_\_\_\_\_  
 Terms \_\_\_\_\_



8 November 2016

Municipal Manager  
Phumelela Local Municipality  
52 Khun Street  
VREDE, 9835

**ATTENTION: MR BRUCE KANNEMEYER**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

Our previous correspondence of 20 September 2016 regarding above-mentioned project refers. This letter provides information on the availability for comment of the Scoping Report prepared for the above-mentioned project.

Notice is hereby given, in terms of the National Environmental Management Act, 1998 (No. 107 of 1998), as amended, that a Scoping Report has been made available for a 30-day public review and comment period from **9 November to 9 December 2016**. Enclosed please find a hard copy of the Scoping Report for your consideration.

Any comments on the Scoping report should be forwarded to SLR at the address, telephone/fax numbers or e-mail address shown below. For comments to be included in the updated Scoping Report, comments should reach SLR by **no later than 9 December 2016**.

**SLR Consulting (South Africa) (Pty) Ltd**  
Attention: Jeremy Blood  
PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**

30 3514 2600 [04/17]

ORIGIN

DESTINATION CODE

**1 Payer account number and insurance details**

Charge to  Shipper  Receiver  3rd party

Payer Account No.  Cash  Check  Credit Card

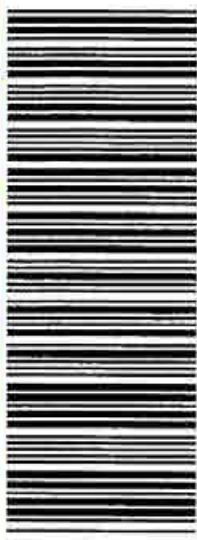
Shipment Insurance see reverse  
 Yes Insured value on four corners  No: all payment conditions apply in all countries.

**2 From (Shipper)**

Shipper's account number: 1051113126  
 Contact name: E. C. ...  
 Shipper's reference (up to 32 characters - first 12 will be shown on invoice): ...  
 Company name: ...  
 Address: ...  
 Postcode/Zip Code (required): ...  
 Phone, Fax or E-mail (required): ...

**3 To (Receiver)**

Company name: ...  
 Delivery address (DHL cannot deliver to a PO Box): ...  
 Postcode/Zip Code (required): ...  
 Country: ...  
 Contact person: ...  
 Phone, Fax or E-mail (required): ...



**4 Shipment details** - *Weight is calculated from total weight and dimensions*

Total number of packages	kg	Plates	Length	Width	Height
1	1	@	X	X	X
		@	X	X	X
		@	X	X	X
		@	X	X	X

**5 Full description of contents**

Give content and quantity:  
 1 copy report X1

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a **Proforma or Commercial invoice**  
 Shipper's VAT/GST number: ...  
 Receiver's VAT/GST or Shipper's EIN/SSN: ...  
 Declared Value for Customs (as on commercial/proforma invoice): ...  
 Harmonised Commodity Code if applicable: ...

**7 Shipper's agreement (Signature required)**

Destination duties/taxes (if left blank receiver pays def. duties):  
 Receiver  Shipper  Other

TYPE OF EXPORT:  
 Permanent  Repair/Return  Temporary

*Unless otherwise agreed to writing, I agree to the DHL terms and Conditions of Carriage as all the terms of the contract between me/us and DHL and I) such terms and conditions are applicable, the Warsaw or Montreal Conventions limits and/or excludes DHL's liability for loss, damage or delay and I) the shipment does not contain cash or dangerous goods (see reverse).*

Signature: ... Date: ...

**8 Products & Services**

Domestic  International Document  
 International Non-Document

Products that are available in all flows of business and packages (availability may vary for certain countries or ZIP):  
 EXPRESS 9:00  
 EXPRESS 12:30  
 EXPRESS 12:00  
 EXPRESS / WORLDWIDE  
 EXPRESS ENVELOPE  
 ECONOMY SELECT  
 OTHER

Optional Services (extra charges may apply):  
 Saturday Delivery  Hold for Collection  
 Delivery Notification  Pliable Packaging  
 Other

Global Business:  
 Priority  Standard  Other

**DIMENSIONAL/CHARGEABLE WEIGHT**

kg • gr

**CHARGES Services**

Other: ...  
 Insurance: ...  
 VAT: ...  
 CURRENCY: ...  
 TOTAL: ...

**PAYMENT DETAILS (Cheque, Card No.)**

No.: ...  
 Type: ...  
 Expires: ...  
 Picked up by: ...  
 Route No.: ...  
 Time: ...



8 November 2016

Municipal Manager  
Dr Pixley ka Isaka Seme Local Municipality  
C/o Dr Nelson Mandela Drive and Adelaide Tambo Street  
VOLKSRUST, 2470

**ATTENTION: PB MALEBYE**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

Our previous correspondence of 20 September 2016 regarding above-mentioned project refers. This letter provides information on the availability for comment of the Scoping Report prepared for the above-mentioned project.

Notice is hereby given, in terms of the National Environmental Management Act, 1998 (No. 107 of 1998), as amended, that a Scoping Report has been made available for a 30-day public review and comment period from **9 November to 9 December 2016**. Enclosed please find a hard copy of the Scoping Report for your consideration.

Any comments on the Scoping report should be forwarded to SLR at the address, telephone/fax numbers or e-mail address shown below. For comments to be included in the updated Scoping Report, comments should reach SLR by **no later than 9 December 2016**.

**SLR Consulting (South Africa) (Pty) Ltd**

Attention: Jeremy Blood

PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**





Project Reference: 722.01083.00003

File Ref. 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR DAFF MP

8 November 2016

Department of Agriculture, Forestry and Fisheries  
Permanent Building, 2<sup>nd</sup> floor  
27 Brown Street  
NELSPRUIT, 1200

**ATTENTION: MR LOVE SHABANE**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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Attention: Jeremy Blood  
PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely

Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**

Track this shipment at: [dhl.com](http://dhl.com)

**DHL** Express

**Shipment Waybill**  
(When negotiable)

04/17  
**30 351 4 2541**

ORIGIN

DESTINATION CODE  
*266*

**1 Payer account number and insurance details**

Charge to  Shipper  Receiver  3rd party

Payer Account No.  Cash  Cheque  Credit Card

Shipment Insurance see reverse  Not all payment options are available in all countries.

Yes  No *insured value*

**2 From (Shipper)**

Shipper's account number  
*315009106*

Contact name  
*F. de Groot*

Shipper's reference (up to 32 characters - first 12 will be shown on invoice)  
*222-01023-0003*

Company name  
*MICHAEL ENVIRONMENTAL ENGINEERING*

Address  
*DE WEG 10 1111 1111*

Postcode/Zip Code (required)  
*1111 1111*

Phone, Fax or E-mail (required)  
*011 452 0945*

**3 To (Receiver)**

Company name  
*Michael Environmental Engineering*

Delivery address (DHL cannot deliver to a PO Box)  
*De Weg 10 1111 1111*

*27 boulevard de la Paix*

*Nantes 44000*

Country  
*FR*

Postcode/Zip Code (required)  
*44000*

Contact person  
*Michel de Groot*

Phone, Fax or E-mail (required)  
*011 452 0945*

**4 Shipment details** *Billed weight is calculated from total weight and dimensions.*

Total number of packages	Total Weight	Dimensions in cm		
		Length	Width	Height
1	1.0 kg	30	35	14

Pieces Length Width Height

① 30 35 14

**5 Full description of contents**

Give content and quantity

*Computer report 1*

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a Proforma or Commercial Invoice

Receiver's VAT/GST or Shipper's EIN/SSN

Declared Value for Customs (as on commercial/proforma invoice)

Harmonised Commodity Code if applicable

TYPE OF EXPORT  
 Permanent  Re-export  Temporary

Destination duties/taxes if flat blank receiver pays duties/taxes  
 Receiver  Shipper  Other

**7 Shipper's agreement (Signature required)**

Unless otherwise agreed in writing, I/we agree that DHL's Terms and Conditions of Carriage are all the terms of the contract between me/us and DHL and I/1 such terms and conditions and, where applicable, the Warsaw or Montreal Convention limits and/or excludes DHL's liability for loss, damage or delay and I/1 this shipment does not contain cash or dangerous goods (see reverse).

Signature *[Signature]* Date *04/17/2004*

**8 Products & Services**

Domestic  International Document

International Non Document

Products: See all available services and conditions and additional conditions on our website [www.dhl.com](http://www.dhl.com) and our brochures.

EXPRESS 9:00  EXPRESS 10:30  EXPRESS 12:00

EXPRESS WORLDWIDE

EXPRESS ENVELOPE

ECONOMY SELECT

OTHER

Optional Services (extra charges may apply)  
 Saturday Delivery  Hold for Collection

Delivery Notification  Postable Packaging

Other

GlobalMail Business  Priority  Standard  Other

**9 Payment Details (Cheque, Card No.)**

No.

Type

Expires

Picked up by *[Signature]*

Route No.

Time

**9 DIMENSIONAL/CHARGEABLE WEIGHT**

kg  •  gr

**10 CHARGES**

Services

Other

Insurance

VAT

CURRENCY TOTAL



8 November 2016

Head of Department  
Department of Economic Development and Tourism  
Building No. 4, 1st Floor  
No.7 Government Boulevard  
Riverside Park Extension 2  
MBOMBELA, 1201

**ATTENTION: MR MW MKIZE**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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**SLR Consulting (South Africa) (Pty) Ltd**

Attention: Jeremy Blood

PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA

**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**





8 November 2016

Head of Department  
Department of Economic Development, Tourism, Environmental Affairs & Small Business  
Bojanala Building  
34 Markgraaf Street  
BLOEMFONTEIN, 9300

**ATTENTION: MS MATILDA GASELA**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**



8 November 2016

Department of Water and Sanitation  
Bloem Plaza, 2nd Floor  
C/o Charlotte Maxeke & East Burger Streets  
BLOEMFONTEIN, 9300

**ATTENTION: DR TP NTILI**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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**SLR Consulting (South Africa) (Pty) Ltd**  
Attention: Jeremy Blood  
PO Box 10145, CALEDON SQUARE, 7905  
Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
Tel: (021) 461 1118/9 Fax: (021) 461 1120  
E-mail: jblood@slrconsulting.com

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA  
**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**



Track this shipment: [dhl.com](http://dhl.com)  
**Shipment Waybill**  
Non-registered

**30 3514 2504**

ORIGIN

DESTINATION CODE  
*222*

**1 Payer account number and insurance details**

Charge to  Shipper  Receiver  3rd party  Cash  Cheque  Credit Card

Payer Account No. \_\_\_\_\_

Shipment Insurance  see reverse  Not all payment options are available in all countries.

Yes Insured value  No Insured value  (in local currency)

**2 From (Shipper)**

Shipper's account number *3035142504*

Contact name *Ed*

Shipper's reference (up to 32 characters - first 12 will be shown on invoice)

*777-01003-00005*

Company name

*METHOD ENVIRONMENTAL INSANILAS*

Address

*QMR HIGH 6 MUMMETH STR. 4111*

*FOURDAYS HANDBY OFFICE PARK*

*5 DUMDAYS*

Postcode/Zip Code (required)

*11 657 0920*

**3 To (Receiver)**

Company name

*Ed*

Delivery address (DHL cannot deliver to a PO Box)

*Wisma No. 21 2nd Floor*

*Fourdays Handby Warehouse*

*Five Dumsdays*

Country

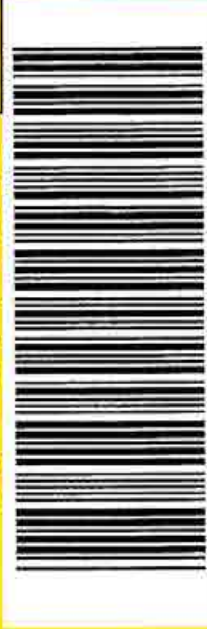
*SA*

Postcode/Zip Code (required)

*9100*

Contact person

*T.P. Ntaly*



**4 Shipment details** Billied weight is calculated from total weight and dimensions

Total number of packages	Total Weight	Pieces	Dimensions in cm	Height
	kg	@	Length - Width	
1	1	@	X X	X
	gr	@	X X	X
		@	X X	X
		@	X X	X

**5 Full description of contents**

Give content and quantity

*600 pieces waybill x1*

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a *Proforma or Commercial Invoice*

Receiver's VAT/GST or Shipper's EIN/SSN

Declared Value for Customs (as on commercial/proforma invoice)

Harmonised Commodity Code if applicable

**TYPE OF EXPORT**

Permanent  Repair/Return  Temporary

Destination duties/taxes if left blank receiver pays duties/taxes

Receiver  Shipper  Other

**7 Shipper's agreement (Signature required)**

Unless otherwise agreed in writing, I/We accept that DHL's Terms and Conditions of Carriage are all the terms of the contract between me/ us and DHL, and (1) such Terms and Conditions and, where applicable, the *Warsaw or Montreal Convention limits and/or excludes DHL's liability for loss, damage or delay and (2) this shipment does not contain cash or dangerous goods (see reverse).*

Signature *Ed*

Date *28/11/2011*

**8 Products & Services**

- Domestic
- International Document
- International Mail Non-Documents

Products not all available in all areas. DHL locations and collection and delivery times are maximum only and are not binding on DHL.

- EXPRESS 5000
- EXPRESS 1030
- EXPRESS 1200
- EXPRESS 1 WORLDWIDE
- EXPRESS ENVELOPE
- ECONOMY SELECT
- SPECIAL

Optional Services (extra charges may apply)

- Saturday Delivery
- Hold for Collection
- Delivery Notification
- Proforma Invoice
- Other

Global Mail Business

- Priority
- Standard
- Other

**DIMENSIONAL/CHARGEABLE WEIGHT**

kg • gr

CHARGES Services

Other

Insurance

VAT

CURRENCY TOTAL

PAYMENT DETAILS (Cheque, Card No.)

No.:

Type

Expires

Picked up by *Ed*

Route No.

Time

Date

**Draft Scoping Report: General I&AP Notification**



8 November 2016

**ATTENTION: LANDOWNER/STAKEHOLDER**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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Name of Facility	Physical Address
Frankfort Public Library	JJ Hadebe Street, Frankfort
Standerton Public Library	Corner Mbonani Mayisela & Beyers Naude Street, Standerton
Cornelia Public Library	Richter Street, Cornelia (next to old school)
Vrede Public Library	Kuhn Street, Vrede

Any comments on the Scoping Report should be forwarded to SLR at the address, telephone/fax numbers or e-mail address shown below. For comments to be included in the updated Scoping Report, comments should reach SLR by **no later than 9 December 2016**.

**SLR Consulting (South Africa) (Pty) Ltd**  
 Attention: Jeremy Blood  
 PO Box 10145, CALEDON SQUARE, 7905  
 Unit 39 Roeland Square, 30 Drury Lane, CAPE TOWN, 8001  
 Tel: (021) 461 1118/9 Fax: (021) 461 1120  
 E-mail: [jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)

Should you have any queries on the above, or require any further information, please do not hesitate to contact the undersigned.

Yours Sincerely



Jeremy Blood Pr.Sci.Nat., CEAPSA

**SLR CONSULTING (SOUTH AFRICA): CAPE TOWN OFFICE**



8 November 2016

**AANDAG: GRONDEIENAAR/BELANGHEBBENDE PARTY**

**AFRO ENERGY – EKSPLORASIE VIR PETROLEUM OP 'N AANTAL PLASE IN 'N GEDEELTE VAN DIE VRYSTAAT EN MPUMALANGA PROVINSIES (12/3/320 ER): KENNIS VAN BESKIKBAARHEID VAN 'N OMVANGSVERSLAG VIR OORSIG EN KOMMENTAAR**

Ons vorige korrespondensie van 20 September 2016 aangaande die bogenoemde projek verwys. Hierdie brief verskaf inligting aangaande die beskikbaarheid vir kommentaar van 'n Omvangsverlag saamgestel vir die bogenoemde projek.

Kennis geskied hiermee, in terme van die Nasionale Wet op Omgewingsbestuur, 1998 (No. 107 van 1998), soos aangepas, dat 'n Omvangsverlag beskikbaar is vir 'n 30-dae publieke oorsig en kommentaarperiode van **9 November tot 9 Desember 2016**. 'n Eksemplaar van die Bestuursoorsig tot die Omvangsverlag is vir u verwysing hierby ingesluit (beskikbaar in Engels of Afrikaans). Eksemplare van die volle Omvangsverlag sal op die SLR webblad ([www.ccaenvironmental.co.za](http://www.ccaenvironmental.co.za)) en by die volgende plekke beskikbaar wees vanaf 9 November 2016:

Naam van Plek	Fisiese Adres
Frankfort Dorpsbiblioteek	JJ Hadebestraat, Frankfort
Standerton Dorpsbiblioteek	Hoek van Mbonani Mayisela & Beyers Naude Straat, Standerton
Cornelia Dorpsbiblioteek	Richterstraat, Cornelia (langs die ou skool)
Vrede Dorpsbiblioteek	Kuhnstraat, Vrede

Alle kommentaar op die Omvangsverlag moet aan SLR gestuur word by die onderstaande adres, foon/faksnummer of e-posadres. Vir kommentaar om ingesluit te word by die opgedateerde Omvangsverlag moet dit SLR **teen 9 Desember 2016** bereik.

**SLR Consulting (South Africa) (Edms) Bpk**  
 Aandag: Jeremy Blood  
 Posbus 10145, CALEDONPLEIN, 7905  
 Eenheid 39, Roelandplein, Drurylaan 30, KAAPSTAD, 8001  
 Tel: (021) 461 1118/9 Faks: (021) 461 1120  
 E-pos: [jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)

Indien u enige vrae aangaande bostaande het of enige verdere inligting verlang, is u welkom om met die ondergetekende te skakel.

Vriendelike groete



Jeremy Blood Pr.Sci.Nat., CEAPSA

**SLR CONSULTING (SOUTH AFRICA): KAAPSTAD KANTOOR**

Afro Energy 320 ER Notification of Draft Scoping Report - Message (HTML)


From: Edwynn Louw  
 To: Edwynn Louw  
 Sent: Tue 08/11/2016 10:24 AM

Subject: Afro Energy 320 ER Notification of Draft Scoping Report

Message: 2016-11-08\_Afro Energy 320 ER DSR Notification ENGLISH.pdf (110 KB) 2016-11-08 Afro Energy 320 ER DSR Notification AFRIKAANS.pdf (1 MB)

Project Reference:  
722.01083.00003

File Ref: 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR General ENGLISH



8 November 2016

**ATTENTION: LANDOWNER/STAKEHOLDER**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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Name of Facility	Physical Address
[REDACTED]	[REDACTED]

See more about: Edwynn Louw.

Afro Energy 320 ER Notification of Draft Scoping Report - Message (HTML)

From: Edwynn Louw  
 To: Edwynn Louw  
 Sent: Tue 08/11/2016 10:24 AM


Subject: Afro Energy 320 ER Notification of Draft Scoping Report

Message: 2016-11-08\_Afro Energy 320 ER DSR Notification ENGLISH.pdf (110 KB) 2016-11-08 Afro Energy 320 ER DSR Notification AFRIKAANS.pdf (1 MB)

Project Reference:  
722.01083.00003

File name: 2016-11-08\_Afro Energy 320 ER DSR Notification ENGLISH.pdf  
 File type: PDF file  
 File size: 110 KB

File Ref: 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR General ENGLISH



8 November 2016

**ATTENTION: LANDOWNER/STAKEHOLDER**

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 To: Edwynn Louw  
 Sent: Tue 08/11/2016 10:24 AM

Project Reference: 722.01083.00003

File Ref: 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR General ENGLISH



8 November 2016

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Name of Facility	Physical Address


See more about: Edwynn Louw.

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From: Edwynn Louw  
 To: Edwynn Louw  
 Sent: Tue 08/11/2016 10:24 AM

Project Reference: 722.01083.00003

File Ref: 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR General ENGLISH



8 November 2016

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Name of Facility	Physical Address

See more about: Edwynn Louw.




Afro Energy 320 ER Notification of Draft Scoping Report - Message (HTML)

From: Edwynn Louw  
 To: Edwynn Louw  
 Cc: Sarahmarie@miller@gmail.com; yannes.radley@dpi.gov.za; jcoventer@discovermail.co.za; jcoventer@discovermail.co.za; amroff@telkomsa.net; yimari@imweb.co.za; anete@jaws.co.za; amachanga@gmail.com; hule02@gmail.com; dudu@lemba0219@gmail.com; Sean.coobus@son@gmail.com; geonsharman@vodanet.co.za; adeelmosa@gmail.com; cutrondave@edwynn.co.za; calvel@imweb.co.za; mdeloyon5@gmail.com; amroff1@vodanet.co.za; hooommas@ntelnet@vodanet.co.za; trayer@net-ye@gmail.com; TTMu24@gmail.com; yaphari@ntelnet-sa.co.za; vhanvethaboo@gmail.com; gwtoleta@outlook.com; pww@vodanet.co.za; birtle.birtle@zopnorth.co.za; tefoloh@zopnorth.co.za; hntab763@gmail.com; douiskruzer1@gmail.com; dliars@gmail.com  
 Subject: Afro Energy 320 ER Notification of Draft Scoping Report

Message 2016-11-08\_Afro Energy 320 ER DSR Notification ENGLISH.pdf (410 KB) 2016-11-08 Afro Energy 320 ER DSR Notification AFRIKAANS.pdf (1 MB)

Project Reference: 722.01083.00003

File Ref: 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR General ENGLISH



8 November 2016

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**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/0/320 ER); NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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Name of Facility	Physical Address

See more about: Edwynn Louw.


Afro Energy 320 ER Notification of Draft Scoping Report - Message (HTML)

From: Edwynn Louw  
 To: Edwynn Louw  
 Cc: jrouers@lanitc.net; yannies.dliars@gmail.com; sub770@gmail.com; herducoeter@gmail.com; yaubies@zopnorth.co.za; jacquesjvr168@gmail.com; tobias168@gmail.com; jacquesprome@gmail.com; duptrust@zopnorth.co.za; onarus@zopnorth.co.za; wilspodaus@gmail.com; hnt@internet-sa.co.za; kristelleloen@gmail.com; hina.mitchell@yahoo.com; hina.mitchell@yahoo.com; zisobem@hotmail.com; atwicko@gmail.com; doeterled@gmail.com; torres@lanitc.net; toud@imbelgra.co.za; vjg.eyling@lanitc.net; Tilar.yh@4u.co.za; janneederstad@hotmail.com; jud@janook.co.za; immb@afrika.com; touwkriz@gmail.com; boovsen\_r@gmail.com; cviloen@telkomsa.net; teleneconze@gmail.com; takkaloester@gmail.com; alfeestronp@yahoo.com; rikel\_els@gmail.com; doeteerdend01@gmail.com  
 Subject: Afro Energy 320 ER Notification of Draft Scoping Report

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8 November 2016

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Name of Facility	Physical Address

See more about: Edwynn Louw.

Afro Energy 320 ER Notification of Draft Scoping Report - Message (HTML)

From: Edwynn Louw  
 To: Edwynn Louw  
 Cc: [doorewessels@gmail.com]; [yfo@bhcarriers.co.za]; [SS@apoorth.co.za]; [d.oon9@gmail.com]; [yredbeverding@gmail.com]; [Janie.Croome@bhb.co.za]; [Janie@apoorth.co.za]; [wrebeland22@gmail.com]; [addressy@gmail.com]; [hdattee@gmail.com]; [wenti@rentonmail.co.za]; [mmp@scorden@gmail.com]; [edren@robusta.co.za]; [andrew\_rillers@gmail.com]; [copper@cuti.ac.za]; [diers777@gmail.com]; [cusa@vodanet.co.za]; [loribeyers@gmail.com]; [corie@blanc.net]; [delagerino@yahoo.com]; [flp@woodwicks.co.za]; [greyling@netas.live.co.za]; [w.azarpur@gmail.com]; [yud@blanc.net]; [yud8272@gmail.com]; [yurter@vodanet.co.za]; [jreymoks@hotmail.com]; [lofp@kassen@vodanet.co.za]; [myramulder@lantic.net]; [monulor@internet.za.co.za]; [Paulpetrolruiger@gmail.com]; [boubkruger1@gmail.com]

Subject: Afro Energy 320 ER Notification of Draft Scoping Report

Message: 2016-11-08\_Afro Energy 320 ER DSR Notification F#GL15H.pdf (410 KB) 2016-11-08 Afro Energy 320 ER DSR Notification AFRIKAANS.pdf (1 MB)

Project Reference: 723.01083.00003

File Ref: 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR General ENGLISH

**SLR**  
8 November 2016

**ATTENTION: LANDOWNER/STAKEHOLDER**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/0/20 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

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See more about: Edwynn Louw.

Afro Energy 320 ER Notification of Draft Scoping Report - Message (HTML)

From: Edwynn Louw  
 To: Edwynn Louw  
 Cc: [yrenck@vodanet.co.za]; [ykersv@gmail.com]; [slungerer@gmail.com]; [wrebeland22@gmail.com]; [svesterhuizen@telkomsa.net]; [wvu@vodanet.co.za]; [lafelap@apoorth.co.za]; [vanvyk@ae05a@yahoo.com]; [vanvyk@yaho.com]; [wof@news.co.za]; [info@coopers.co.za]; [hnd@autocty.co.za]; [infomat@gmail.com]; [moolmeis@foron@opnorth.co.za]; [stephon@intermts.co.za]; [hndp@autocty.co.za]; [abes@nb.co.za]; [kust@enviroek.co.za]; [hnm.p@sigmail.com]; [kruger.marthe@gmail.com]; [dits@lalreal.co.za]; [Geysam@gmail.com]; [benbravers12@gmail.com]; [juutens@blanc.net]; [lenhof@envco.co.za]; [Marin@vab.co.za]; [ycoock@vodanet.co.za]; [hgoap@petroleumagency.co.za]; [khumalon@petroleumagency.co.za]; [matshusa@geoscience.org.za]; [shavase@geoscience.org.za]

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 Sent: Tue 08/11/2016 10:24 AM


Cc: meryn@esab.co.za; ylodner@car.co.za; info@vessa.co.za; lungenivaley@vessa.co.za; traskrige@telkom.net; j1zmbelonakhuri@940@gmail.com; advocacy@indife.org.za; aboms@rmi.org.za; egoproject@web.co.za; rstone@rmi.org.za; bradley@ent.org.za; Max@igmsa.co.za; totah@res.co.za; wambob@res.co.za; Mena.janoe@panahel.net; inspeco.mba@panahel.net; Sibusandla.sibiv@panahel.net; joraham.deal@essure@telkom.co.za; yresearch@essure@telkom.co.za; ian@merlon@ack@vessa.org.za; ksa@ack@vessa.org.za; vfd@aburgu@vtdvlekaeme.gov.za; berodeaan@laric.net; ioms@lu.co.za; wLunie@web.co.za; robert.mpl@web.co.za; cheln@ura@gmail.com; jack@vstansbos.co.za; denriek@vodmail.co.za; vsl@web.co.za

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From: Edwynn Louw  
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Cc: meryn@esab.co.za; Ndleleni.Zindele@dm.gov.za; Tshapho.Makgoba@dm.gov.za; Aubrey.Tshvhandekano@dm.gov.za; Samuel.Mabavhele@dm.gov.za; Beluel.Mabozo@dm.gov.za; brockla.donini@mdandord.gov.za; zac.ahosa@kmdandord.gov.za; shumbule.mheshu@kmdandord.gov.za; csangweni@mpg.gov.za; Nait@des.gov.za; Muisur@dm.gov.za; Muzome.Tshowane@drk.gov.za; sanni.moo@dr.gov.za; yuslem@desa.fs.gov.za; izunongu@desa.fs.gov.za; Nkavov@desa.fs.gov.za; motoenel@desa.fs.gov.za; hoddedt@mpg.gov.za; MWH@desa.gov.za; Thoko.Maboso@kmdtransport.gov.za; d@kambule@mpg.gov.za; kmh@desa@mpg.gov.za; yengw@desa.gov.za; phino@esab.org.za; Lovus@dsff.gov.za; PaulMAZ@dsff.gov.za

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Name of Facility	Physical Address
[REDACTED]	[REDACTED]

See more about: Edwynn Louw.



Afro Energy 320 ER Notification of Draft Scoping Report - Message (HTML)

---

Message

Ignore Reply Reply All Forward Meeting Message Tracking Archive Team E-mail Reply & Delete To Manager Done Create New Rules OneNote Mark Unread Category Follow Up Translate Find Related Select Zoom

---

**From:** Edwynn Louw  
**To:** Edwynn Louw  
**Sent:** Tue 08/11/2016 10:24 AM

**Cc:**
[vann@gabande.gov.za](mailto:vann@gabande.gov.za); [abongile@psibardin.gov.za](mailto:abongile@psibardin.gov.za); [yvonne@gabande.gov.za](mailto:yvonne@gabande.gov.za); [ezemeyiv@mdm.gov.za](mailto:ezemeyiv@mdm.gov.za); [tsaatsa@mdm.gov.za](mailto:tsaatsa@mdm.gov.za); [thembu@mdm.gov.za](mailto:thembu@mdm.gov.za); [ceeliam@frsidedala.gov.za](mailto:ceeliam@frsidedala.gov.za); [nelson@frsidedala.gov.za](mailto:nelson@frsidedala.gov.za); [suresh@frsidedala.gov.za](mailto:suresh@frsidedala.gov.za); [mariso@frsidedala.gov.za](mailto:mariso@frsidedala.gov.za); [tdlavini@ekwuleni.gov.za](mailto:tdlavini@ekwuleni.gov.za); [tsalulala@ekwuleni.gov.za](mailto:tsalulala@ekwuleni.gov.za); [thota@ekwuleni.gov.za](mailto:thota@ekwuleni.gov.za); [andrewfr@valdube.gov.za](mailto:andrewfr@valdube.gov.za); [motokungti@gmail.com](mailto:motokungti@gmail.com); [oriblendaki@gmail.com](mailto:oriblendaki@gmail.com); [lundilelu@gmail.com](mailto:lundilelu@gmail.com); [records@pivleykaaseme.gov.za](mailto:records@pivleykaaseme.gov.za); [records@pivleykaaseme.gov.za](mailto:records@pivleykaaseme.gov.za); [records@pivleykaaseme.gov.za](mailto:records@pivleykaaseme.gov.za); [records@pivleykaaseme.gov.za](mailto:records@pivleykaaseme.gov.za); [whanyole@pivleykaaseme.gov.za](mailto:whanyole@pivleykaaseme.gov.za); [edwynn.louw@gmail.com](mailto:edwynn.louw@gmail.com); [webmaster@mpa.co.za](mailto:webmaster@mpa.co.za); [info@mpa.co.za](mailto:info@mpa.co.za)


**Subject:** Afro Energy 320 ER Notification of Draft Scoping Report

Message 2016-11-08\_Afro Energy 320 ER DSR Notification ENGLISH.pdf (410 KB) 2016-11-08 Afro Energy 320 ER DSR Notification AFRIKAANS.pdf (1 MB)

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**Project Reference:**  
 722.01088.00003

File Ref: 2016-11-08\_Afro Energy 320 ER notica\_01\_058 General INWZ.DR



8 November 2016

**ATTENTION: LANDOWNER/STAKEHOLDER**

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Name of Facility	Physical Address

[See more about: Edwynn Louw](#)

MARTHINUS JOHANNES ZIETSMAN

1 VAN DE MERWE ST

VREDE

9835

MIDDELPUNT 773 BOERDERY CC

11 BLOUBOKKIESTRAAT

KOEDOESPOORT 0186

G P DEALE CC

1139 KISMET FARM

VREDE

FREE STATE 9835

GOEDGEVONDEN EIENDOMME CC

12 PRINSES STREET

STANDERTON

MPUMALANGA 2430

HENTIQ 2669 PTY LTD

1247 JUSTICE MOHAMED STREET

MENLO PARK 0081

CHRISTINA MAGDALENA DU TOIT

16 MELKHOUT CRESCENT

PAROW

7500

VERONICA NICOLA JONKER

168MIDDENWATER PLASS

FRANKFORT

9830

CAREL CHRISTIAAN VAN DER MERWE

1854

STANDERTON

2430

JACOBUS JOHANNES GERHARDUS VAN

ROOYEN

1NS RUS

VREDE

9835

JACOBUS JOHANNES PETRUS PRINSLOO

217

VREDE

9835

GOLDEN POND TRADING 693 PTY LTD

22 12TH STREET

MENLO PARK

81

RICHARD SCHALK JANSE VAN RENSBURG

25 BISHOPSCOURT DR

BISHOPSCOURT

CLAREMONT 7250

JOHANNES JACOBUS NEL

28 STE

377 LAAN

PRETORIA 0186

IZAK DANIEL DREYER

414 VREDE

VREDE

9835

KIMBRASTAX PTY LTD

47 CALVINIA ROAD

BRENTWOOD PARK

GAUTENG 1501

HIKMA PROPERTIES CC

54 SAAIPLAAS

CORNELIA

FREE STATE

NEVADA FARMING CC

58 MILNER AVENUE

NIGEL

1490

EHSAN MUHAMMAD

6 ROLLO STREET

CYRILDENE

2198

LUKAS JOHANNES SWART

62 MARKET ST

VREDE

VREDE 9835

ALBERT DOCTOR RADEBE

703

VREDE

9835

EUNICE MULLER

8 VAN DER MERWE ST

VREDE

9835

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BAKKER ST 9

IDAS VALLEI

STELLENBOSCH 7600

MICHAEL WHITE

CHRISTINE RD 77

LYNNWOOD GLEN

PRETORIA 0081



RENTIA BOERDERY CC  
EMMERENTIA FARM  
HARRISMITH  
FREE STATE 9835

ABJ BOERDERY CC  
FARM DE WERF  
VREDE  
LIMPOPO 9835

HENJA FARMING CC  
FARM DRIEKUIL  
VREDE  
FREE STATE 9835

RENTIA BOERDERY CC  
FARM EMMERENTIA  
VREDE  
FREE STATE 9835

KLAPROPS 241 PTY LTD  
FARM TWEEFONTEIN  
DELMAS  
MPUMALANGA 2210

PJ VENTER BOERDERY PTY LTD  
FARM VLAKLAAGTE  
STANDERTON  
2430

ALBERTUS ADRIAAN VAN WYK  
FRANKFORT ST 3  
CORNELIA  
CORNELIA 9850

HESTER JOHANNA MOMBERG  
KUHN ST 35  
VREDE  
VREDE 9835

JERRY MARITZ BELEGGINGS CC  
LESLIEVLEI PLAAS  
VREDE  
GAUTENG 9836

CHRISTIAAN DE NECKER DE JAGER  
MARK ST 32  
FRANKFORT  
FRANKFORT 9830

DANIEL CHRISTIAAN PORTWIG  
MEADOW MEWS 42  
MEADOW LN  
EQUESTRIA 0184

VARSFONTEIN BEEF CC  
ORBIE LAGTE  
VREDE  
FREE STATE 9835

CLOETE ODENDAAL  
P O BOX 123  
VREDE  
9835

DIRKIE CATHARINA PIENAAR  
P O BOX 155  
FRANKFORT  
9830

HENDRIK DIEDERIK VAN RENSBURG  
P O BOX 166  
CORNELIA  
9850

JUDITH ISABELLA MULLER  
P O BOX 207  
VREDE  
9835

SUSARA CORNELIA KLEYNHANS  
P O BOX 21  
PLATRANDE  
2435

CHRISTIAAN RUDOLPH DE WET  
P O BOX 234  
VREDE  
9835

MARTHA HENDRINA ELIZABETH VAN DER  
MERWE  
P O BOX 280  
VREDE  
9835

JUDITH JACOBA UNGERER  
P O BOX 288  
VREDE  
9835



DIRKIE PETRONELLA DU PREEZ  
P O BOX 295  
STANDERTON  
2430

CHRISTIAAN FREDERICK SCHEEPERS  
P O BOX 408  
VREDE  
9835

REBONDO BOERDERY CC  
P O BOX 425  
VREDE  
9835

ALETIA ALIDA REGINA VAN ASWEGEN  
P O BOX 477  
STANDERTON  
2430

DAWID PETRUS MATHYS BOTES  
P O BOX 554  
VREDE  
VREDE 9835

ANN-MARIE BOTHA  
P O BOX 581  
STANDERTON  
2430

PIETER JACOBUS GYSBERT NEL  
P O BOX 674  
AMANZIMTOTI  
4125

JOHANNA DOROTHEA PRETORIUS  
P O BOX 743  
VREDE  
9835

JOHANNA WILHELMINA GILIOME  
P O BOX 79  
VILLIERS  
9840

FIBREGLASS & RESIN MANUFACTURERS CC  
P O BOX 842  
DELMAS  
2210

HESTER CORNELIA VAN DEN BERG  
P O BOX 871  
STANDERTON  
2430

A J P MOSTERT & SEUNS CC  
PLAAS GROENVLEI  
STANDERTON  
2430

JANWALD PROPERTIES CC  
PO BOX 10096  
ASTON MANOR  
1630

JOHANNES FREDERICK RAUTENBACH  
PO BOX 1160  
PO BOX 1160  
HOLMDENE 7380

WILLEM CARL ODENDAAL  
PO BOX 123 VREDE VREDE 98  
VREDE  
VREDE 9835

SUSANNA JACOBA MARIA ESTERHUIZEN  
PO BOX 160 CORNELIA VREDE  
CORNELIA  
CORNELIA 9850

DEEP BLUE SEA INVESTMENTS CC  
PO BOX 1609  
GERMISTON  
1401

THOMAS JOHANNES HUGO  
PO BOX 166 166  
FRANKFORT  
9830

CHRISTINA MAGDALENA DU PLESSIS  
PO BOX 167  
VILLIERS  
VILLIERS 9840

PAUL STEPHANUS KRUGER  
PO BOX 170  
VREDE  
9850

LEKWA BRICKS PTY LTD  
PO BOX 170  
STANDERTON  
2430

FOLLOW THE STAR TRADING 619 CC  
PO BOX 1746  
BEDFORDVIEW  
2008

GAYBLACK PTY LTD  
PO BOX 1748  
OUDTSHOORN  
6620

SEAN ROBERT KRAMER  
PO BOX 1761  
PARKLANDS  
2121

PAUL RICHARD LOUIS BRAACK  
PO BOX 195 CORNELIA VREDE  
VREDE  
VREDE 9850

#N/A  
PO BOX 2  
FRANKFORT  
9830

JAMES JOHN CAIRNCROSS  
PO BOX 215  
VREDE  
VREDE 9835

LIGITPROPS 136 PTY LTD  
PO BOX 2384  
NYLSTROOM  
0510



GESINA JOHANNA DE WET  
PO BOX 250  
WINTERTON  
WINTERTON 3340

JOHANNES JAKOBUS BESTER  
PO Box 269  
VREDE  
9835

RADNOR & KINGTON BOERDERY CC  
PO BOX 3  
CORNELIA  
9850

SAMUEL WENTZEL UNGERER  
PO BOX 30  
NTSWANATSATI  
CORNELIA 9850

ALEXANDER ABRAHAM TERBLANCHE  
PO BOX 3012 STANDERTON ST  
STANDERTON  
STANDERTON 2430

ALIDA MARIA UNGERER  
PO BOX 303 FRANKFORT FRAN  
FRANKFORT  
FRANKFORT 9830

ELITE MOBILE CC  
PO BOX 310  
WITKOPPEN  
2068

MARTHINUS PETRUS DE JAGER  
PO BOX 32224  
FICHARDT PARK  
BLOEMFONTEIN 9301

ADRIAAN ISAK BESTER  
PO BOX 354  
VREDE  
9835

EBENHAEZER 1193 LANDGOED PTY LTD  
PO BOX 35465  
MENLO PARK  
102

MANIE PORTWIG BOERDERY CC  
PO BOX 359  
VREDE  
9835

BAREND DANIEL BIERMAN  
PO BOX 365  
VREDE  
9835

BAREND DANIEL JANSE VAN RENSBURG  
PO BOX 391  
VREDE  
9835

JOHAN COENRAAD MARNEWECK  
PO BOX 403 STANDERTON STA  
STANDERTON  
STANDERTON 2430

ANZETTE BIERMAN  
PO BOX 407  
FRANKFORT  
9830

JOHANNES AUGUSTUS DREYER  
PO BOX 414  
VREDE  
VREDE 9835

REBONDO BOERDERY CC  
PO BOX 425  
VREDE  
9835



JOUBERTSKOP HOENDERBOEDERY PTY LTD  
PO BOX 450  
STANDERTON  
MPUMALANGA 2430

CORNELIUS PETRUS VAN WYK  
PO BOX 49  
VREDE  
CORNELIA 9850

JOHANN HEINRICH PORTWIG  
PO BOX 497  
VREDE  
VREDE 9835

MATLABAS NATURE RESERVE PTY LTD  
PO BOX 49915  
HERCULES  
30

JACOB CHRISTOFFEL CRONJE  
PO BOX 506 VREDE VREDE 98  
VREDE  
VREDE 9835

JOHAN RUS BOERDERY CC  
PO BOX 507  
STANDERTON  
2430

MARTHINUS JOHANNES ROELAND  
PO BOX 542  
VREDE  
9835

PHARMATREND PTY LTD PO BOX 55 VILLIERS FREE STATE 9840	JACOB JOHANNES JACOBUS VAN ROOYEN PO BOX 551 VREDE 9835	HERMANUS LUKAS PORTWIG PO BOX 552 VREDE 9835
CHARMAIN STEYNBERG PO BOX 561 VREDE 9835	HENRY BROADLEY COCKCROFT PO BOX 564 VREDE 9835	WILLEM CAREL CILJERS PO Box 565 VREDE 9835
JOHAN DEWALD BOTHA PO Box 581 STANDERTON MPUMALANGA 2430	JOHAN JACOB JANSE VAN RENSBURG PO BOX 600 STANDERTON STANDERTON 2430	JACOBUS HENDRIK MULLER PO BOX 611 FRANKFORT FRANKFORT 9830
FREDERIK JACOBUS VAN RENSBURG PO BOX 6523 PRETORIA 0165	PHILIPPUS JURIE WYNAND FOURIE PO Box 66 VILLIERS 9840	PETRUS LOUIS VISSER PO BOX 70031 THE WILLOWS VREDE VREDE 0041
STEFANIE UNGERER VAN DER MERWE PO BOX 7237 STANDERTON 2430	SILVER FALCON TRADING 481 PTY LTD PO BOX 7374 HALFWAY HOUSE 1685	JORSIE TRADING CO PTY LTD PO BOX 783703 SANDTON 2146
WILLEM LODEWIKUS WESSELS PO BOX 807 FRANKFORT FRANKFORT 9830	HUDRIA WATER CC PO BOX 82 ERMELO 2350	BARTON FARM DEVELOPMENT PTY LTD PO BOX 8217 EDENGLLEN 1613
FIBREGLASS RESIN CO PTY LTD PO BOX 842 DELMAS 2210	FREDERIK JACOBUS VAN ROOYEN PO BOX 87 VREDE 9850	AFROPULSE 128 PTY LTD PO BOX 8714 EDLEEN 1615
ANNA-MARIE SOPHIA RHEEDERS PO BOX 885 MENLO PARK 0042	GERT HENDRIK UNGERER PO BOX 90 CORNELIA VREDE CORNELIA CORNELIA 9850	PAMELA PEGGY RINKE PO BOX 95 VREDE VREDE 9835





CHRISMA BOERDERY CC POBUS 359 VREDE 9835	JACOBUS LODEWICUS DE JAGER PRINSLOO POSBUS 10 VREDE 9850	CHRISTOFFEL PETRUS CILLIERS POSBUS 141 FRANKFORT 9830
JAN FREDERIK RYKERS VAN ROOYEN POSBUS 15 CORNELIA 9850	HENDRIK SALMON PIENAAR POSBUS 155 FRANKFORT FRANKFORT 9830	N J & C VAN DER MERWE BOERDERY PTY LTD POSBUS 1717 STANDERTON 2430
BAREND DU PLESSIS BESTER POSBUS 177 VREDE 9835	S W ROELAND BOERDERY CC POSBUS 195 MEMEL 2970	GERRIT PIETER VICTOR POSBUS 197 FRANKFORT FRANKFORT 9830
MHCM BOERDERY PTY LTD POSBUS 212 VREDE 9835	PHILIPPUS JACOBUS CRONJE POSBUS 234 VILLIERS 9840	FOURIE & FOURIE BOERDERY CC POSBUS 249 VREDE 9835
ABJ BOERDERY CC POSBUS 269 VREDE 9835	ABJ BOERDERY CC POSBUS 269 VREDE 9835	ROBVAAL BOERDERY CC POSBUS 311 STANDERTON 2430
CECILIA BARBARA CLOETE POSBUS 313 VREDE 0313	GERHARDUS STEPHANUS CLOETE POSBUS 313 VREDE 0313	SMALPUNT BOERDERY PTY LTD POSBUS 326 STANDERTON 2430
PETRUS PAULUS SWART POSBUS 367 VREDE 9835	JOHANNES FREDERIK VAN DER MERWE POSBUS 380 380 VREDE 9835	DAMSPRUIT BOERDERY PTY LTD POSBUS 382 STANDERTON 2430
IGNATIUS WILHELM FERREIRA POSBUS 38376 GARSFONTEIN 0042	BEN BU ELEKTRIES CC POSBUS 40268 ARCADIA 0007	MARIA ELIZABETH GUNTER POSBUS 43 CORNELIA 9850



HENDRIK JOHANNES ODENDAAL

POSBUS 436

VREDE

9835

C M I A BOERDERY PTY LTD

POSBUS 450

STANDERTON

2430

ARET BOERDERY PTY LTD

POSBUS 507

STANDERTON

2430

JOHN LEONARD MULLER

POSBUS 551

VREDE

9835

MARY CATHERINE VAN ROOYEN

POSBUS 551

VREDE 9835

FRANS JOHANNES VAN DYK

POSBUS 555

BALFOUR

2410

CORNELIUS JOHANNES RAUTENBACH

POSBUS 674

STANDERTON

STANDERTON 2430

EVELYNE MARJORIE GRAAFF

POSBUS 674

MODIMOLLE

0510

LOMBARDE VICTOR

POSBUS 674

FRANKFORT

9830

HURTER FARMING ENTERPRISES CC

POSBUS 8

CORNELIA

FREE STATE 9850

PJ SCHABORT DE JAGER PTY LTD

POSBUS 818

BLOEMFONTEIN

9300

JOHANNA CORNELIA SOPHIA VAN ROOYEN

POSBUS 87

ANNIESDALE

CORNELIA 9850

JANE WATSON VAN ZYL

PRIVATE BAG X221

VREDE

9835

CORNELIUS MEYER PRETORIUS

REITZ STRAAT 8

VREDE

9835

HELENA SUNETTE VOS VAN WYK

SANDS RD 37

WILDERNESS

WILDERNESS 6560

GERTRUIDA MARIA EKSTEEN

WILDEBEESSINGEL 6

KOSMOSPARK

2429



**Draft Scoping Report: Library Distribution**

8 November 2016

Cornelia Public Library  
Richter Street  
CORNELIA  
9850

**ATTENTION: AMOS**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): PLACEMENT OF SCOPING REPORT AT LIBRARY FOR REVIEW AND COMMENT**

Your discussion with Hendrik Burger on 2 November 2016 regarding the above-mentioned project refers.

Please find enclosed a hardcopy of the Scoping Report prepared for the above-mentioned project. The Scoping Report is being released for a 30-day public review and comment period from **9 November to 9 December 2016**. During this period Interested and Affected Parties are asked to comment on this report.

We would appreciate it if this document could be made available for public review for the duration of the comment period and, therefore, request that it is placed on reserve at the library until **9 December 2016**.

Please do not hesitate to contact the undersigned should you have any queries and thank you very much for your assistance.

Yours Sincerely



Edwynn Louw  
**SLR CONSULTING (SOUTH AFRICA): FOURWAYS OFFICE**



Project Reference: 722.01083.00003

File Ref. 2016-10-08\_Afro Energy 320 ER DSR to Frankfort Lib

8 November 2016

Frankfort Public Library  
JJ Hadebe Street  
FRANKFORT  
9830

**ATTENTION: JABU**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): PLACEMENT OF SCOPING REPORT AT LIBRARY FOR REVIEW AND COMMENT**

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We would appreciate it if this document could be made available for public review for the duration of the comment period and, therefore, request that it is placed on reserve at the library until **9 December 2016**.

Please do not hesitate to contact the undersigned should you have any queries and thank you very much for your assistance.

Yours Sincerely



Edwynn Louw  
**SLR CONSULTING (SOUTH AFRICA): FOURWAYS OFFICE**





Track this shipment: [dhl.com](http://dhl.com)  
Shipment Waybill

0417  
30 3514 2585

ORIGIN

DESTINATION CODE

**1 Payer account number and insurance details**

Change to  Shipper  Receiver  3rd party

Payer Account No.  Cash  Cheque  Credit Card

Shipment insurance see reverse

Yes Insured value in local currency  No, all payment options are in local currency

**2 From (Shipper)**

Shipper's account number

Contact name

Shipper's reference (up to 32 characters - first 12 will be shown on invoice)

Company name

Address

Postcode/Zip Code (required)

Phone, Fax or E-mail (required)

**3 Products & Services**

Domestic  International Document  International Non-Document

Products not eligible for delivery to addressees' business and industrial premises (see an enclosure and not used handling on DHL)

EXPRESS 12:00  EXPRESS 12:00  EXPRESS 12:00

EXPRESS HIGH PRIORITY  EXPRESS ENVELOPE  ECONOMY SELECT  OTHER

Optional Services (extra charges, may apply)

Saturday Delivery  Hold for Collection  Delivery Notification  Repeat Packaging  Other

Globalmail Business  Priority  Standard  Other

**4 Shipment details** *Boxes weight is calculated from total weight and dimensions*

Total number of packages	Total Weight	Dimensions in cm	Pieces	Length	Width	Height
1	kg	gr	②	X	X	X
			②	X	X	X
			②	X	X	X
			②	X	X	X

**5 Full description of contents**

Give content and quantity

Copying report X1

**6 Non-Document Shipments Only (Customs Requirement)**

Attach the original and two copies of a Proforma or Commercial Invoice

Shipper's VAT/GST number

Receiver's VAT/GST or Shipper's EIN/SSN

Declared Value for Customs (as on commercial/proforma invoice)

Harmonised Commodity Code if applicable

**CHARGES SERVICES**

Other

Insurance

VAT

CURRENCY TOTAL

PAYMENT DETAILS (Cheque, Card No.)

No. :

Type Expires

Picked up by

Route No.

Time Date

**3 To (Receiver)**

Company name

Delivery address (DHL cannot deliver to a PO Box)

Country (required)

Postcode/Zip Code (required)

Contact person

Phone, Fax or E-mail (required)

**7 Shipper's agreement (Signature required)**

Unless otherwise agreed in writing, I/we agree that DHL's Terms and Conditions of Carriage are all the terms of the contract between me/us and DHL and I/ we such Terms and Conditions and, where applicable, the Warsaw or Montreal Convention limits and/or excludes DHL's liability for loss, damage or delay and I/ we this shipment does not contain cash or dangerous goods (see reverse).

Destination duties/taxes: If left blank receiver pays duties/taxes

Receiver  Shipper  Other

TYPE OF EXPORT  Permanent  Repair/Return  Temporary

Signature

Date

**8 Payment Details**

CHARGES SERVICES

Other

Insurance

VAT

CURRENCY TOTAL

PAYMENT DETAILS (Cheque, Card No.)

No. :

Type Expires

Picked up by

Route No.

Time Date

8 November 2016

Standerton Public Library  
C/o Mbonani Mayisela & Beyers Naude Street  
STANDERTON, 2430

**ATTENTION: ELIZABETH MPANYA**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): PLACEMENT OF SCOPING REPORT AT LIBRARY FOR REVIEW AND COMMENT**

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Please do not hesitate to contact the undersigned should you have any queries and thank you very much for your assistance.

Yours Sincerely



Edwynn Louw  
**SLR CONSULTING (SOUTH AFRICA): FOURWAYS OFFICE**



8 November 2016

Vrede Public Library  
Kuhn Street  
VREDE  
9835

**ATTENTION: THABO**

**AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): PLACEMENT OF SCOPING REPORT AT LIBRARY FOR REVIEW AND COMMENT**

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We would appreciate it if this document could be made available for public review for the duration of the comment period and, therefore, request that it is placed on reserve at the library until **9 December 2016**.

Please do not hesitate to contact the undersigned should you have any queries and thank you very much for your assistance.

Yours Sincerely



Edwynn Louw  
**SLR CONSULTING (SOUTH AFRICA): FOURWAYS OFFICE**



Track this shipment: dhl.com

**DHL** = DHL Express

**Shipment Waybill**  
(Not negotiable)

30 3514 2552

ORIGIN

DESTINATION CODE

**1 Payer account number and insurance details**

Charge to  Shipper  Receiver  3rd party  Cash  Cheque  Credit Card

Payer Account No. \_\_\_\_\_

Shipment Insurance see reverse  Not all payments available in all countries. (In local currency)

Yes (insured value)  No

**2 From (Shipper)**

Shipper's account number \_\_\_\_\_

Contact name \_\_\_\_\_

Shipper's reference (up to 32 characters - first 12 will be shown on invoice)

722-31227-01003

Company name

UNIVERSITÄT WÜRZBURG

Address

ERIG RING 6 FACHS 57M, UNIV  
FÜR PHYSIKS MATHIS, OSTERG. PARK  
97082 WÜRZBURG

Postcode/Zip Code (required)

97082 Würzburg

Phone, Fax or E-mail (required)

0931 91-1111

**3 To (Receiver)**

Company name

Wiederholungs

Delivery address (DHL cannot deliver to a PO Box)

Wiederholungs

Wiederholungs

Postcode/Zip Code (required)

97082 Würzburg

Country

Germany

Contact person

Wiederholungs



**4 Shipment details** - *Billed weight is calculated from total weight and dimensions*

Total number of packages	Total Weight	Pieces	Length	Width	Height
1	1.5 kg	1	30	14	5

**5 Full description of contents** - Give content and quantity

Shipping copy + x1

**6 Non-Document Shipments Only (Customs Requirement)** - Attach the original and two copies of a Proforma or Commercial Invoice

Receiver's VAT/GST or Shipper's EIN/SSN

Declared Value for Customs (as on commercial/proforma invoice)

Harmonised Commodity Code if applicable

TYPE OF EXPORT

Permanent  Return  Temporary

Destination duties/taxes (if left blank receiver pays duties/taxes)

Receiver  Shipper  Other

**7 Shipper's agreement (Signature required)**

Unless otherwise agreed in writing, I/we agree that DHL's Terms and Conditions of Carriage apply to all the terms of the contract between me/us and DHL, and I/1 such terms and conditions and where applicable, the Warsaw or Montreal Convention, limits and/or excludes DHL's liability for loss, damage or delay and I/1 this shipment does not contain cash or dangerous goods (see reverse)

Signature

Date 11/1/2011

**8 Products & Services**

Domestic  International Document  International Non-Documents

EXPRESS 9/04  EXPRESS 10/20  EXPRESS 12/20

EXPRESS WORLDWIDE  EXPRESS ENVELOPE  ECONOMY SELECT

OTHER

Optional Services (extra charges may apply):

Saturday Delivery  Hold for Collection  Delivery Notification  Payable Packaging  Other

Additional Services:

Priority  Standard  Other

DIMENSIONAL/CHARGEABLE WEIGHT

kg • gr

CHARGES Services

Other

Insurance

VAT

CURRENCY

TOTAL

PAYMENT DETAILS (Cheque, Card No.)

No. :

Type

Expires

Picked up by

Route No.

Time

Date

**APPENDIX 5.9: CORRESPONDENCE RECEIVED DURING THE DRAFT SCOPING REPORT REVIEW AND COMMENT PERIOD**



## Edwynn Louw

---

**From:** Teboho Modise Transnet Freight Rail PTA <Teboho.Modise@transnet.net>  
**Sent:** 28 October 2016 12:33 PM  
**To:** Edwynn Louw  
**Subject:** FW: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)  
**Attachments:** image006.wmz; 2016-09-20\_Afro Energy 320 ER Written Notice\_of\_EA ENGLISH.pdf; Afro Energy 321 ER - BID English FINAL (19 Sept 2016).pdf

Afternoon

Please note that I am the Environmental Specialist representing Transnet Freight Rail, I will send you the initial comments to be incorporated in the Scoping Report on Monday.

Regards

Teboho Modise

---

**From:** Maria Jantjie Transnet Freight Rail BLM  
**Sent:** 25 October 2016 08:20 PM  
**To:** Teboho Modise Transnet Freight Rail PTA <Teboho.Modise@transnet.net>  
**Subject:** FW: AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

Hi Teboho,

Can you please take a look at this.

Regards,



Maria Jantjie  
Depot Engineer (B.Eng Civil)  
Bloemfontein  
Infra Maintenance  
☎ 051 408 3370  
📠 083 280 2273  
📠 051 408 2942

[Maria.Jantjie@transnet.net](mailto:Maria.Jantjie@transnet.net)

---

**From:** Edwynn Louw [<mailto:elouw@slrconsulting.com>]  
**Sent:** 25 October 2016 09:27 AM  
**To:** Maria Jantjie Transnet Freight Rail BLM; [masindi.mdadi@transnet.net](mailto:masindi.mdadi@transnet.net); Siphamandla Sibiyi Transnet Freight Rail PTA; Matimba Shihambi Transnet Freight Rail JHB  
**Subject:** AFRO ENERGY - NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

Good day Transnet Stakeholders,

## Edwynn Louw

---

**From:** Mdhuli Sibho (BFN) <MdhuliS2@dwa.gov.za>  
**Sent:** 09 November 2016 08:18 AM  
**To:** Edwynn Louw  
**Subject:** FW: Afro Energy 320 ER Notification of Draft Scoping Report  
**Attachments:** 2016-11-08\_Afro Energy 320 ER DSR Notification ENGLISH.pdf; 2016-11-08 Afro Energy 320 ER DSR Notification AFRIKAANS.pdf

Good Morning

Your correspondence is noted. Kindly note that this areas where the proposed project is falls within the Water Management Area of the DWS Gauteng Regional Office. You are urged to consult the DWS Gauteng Office as follows:

Mr Sibusiso Mthembu  
Provincial Head: Gauteng Region  
Department of Water and Sanitation  
15th Floor  
Bothongo Plaza East  
285 Francis Baard Street  
Pretoria  
0001

Mr Sibusiso Mthembu  
Provincial Head: Gauteng Region  
Department of Water and Sanitation  
Private Bag X995  
Pretoria  
0001

Tel: 012 392 1300

For attention as follows:

Matseba Ephraim Mogale  
Telephone 012 392 1374  
Email matsebae@dwa.gov.za

Regards

***Sibo Mdhuli***

***Department of Water and Sanitation***

***Water Regulation***

***Tel: 051 405 9204***

***Cell: 082 8794970***



**water & sanitation**

Department:  
Water and Sanitation  
**REPUBLIC OF SOUTH AFRICA**

## Edwynn Louw

---

**From:** M.J. Van Wyk <vanwykmj@yahoo.com>  
**Sent:** 14 November 2016 04:47 PM  
**To:** Edwynn Louw  
**Subject:** Re: Afro Energy 320 ER Notification of Draft Scoping Report  
**Attachments:** Eksplorاسie grond 1.pdf; Eksplorاسie grond 2.pdf

-----  
On Tue, 11/8/16, Edwynn Louw <elouw@slrconsulting.com> wrote:

Subject: Afro Energy 320 ER Notification of Draft Scoping Report  
To: "Edwynn Louw" <elouw@slrconsulting.com>  
Date: Tuesday, November 8, 2016, 10:23 AM

```
#yiv1719922278
P.yiv171992227893c4c8b7-ab1a-45c6-a5ed-93ad14302cd8 { MARGIN:0cm 0cm 0pt;}
#yiv1719922278
LI.yiv171992227893c4c8b7-ab1a-45c6-a5ed-93ad14302cd8 { MARGIN:0cm 0cm 0pt;}
#yiv1719922278
DIV.yiv171992227893c4c8b7-ab1a-45c6-a5ed-93ad14302cd8 { MARGIN:0cm 0cm 0pt;}
#yiv1719922278
TABLE.yiv171992227893c4c8b7-ab1a-45c6-a5ed-93ad14302cd8Table
{
MARGIN:0cm 0cm 0pt;}
#yiv1719922278 DIV.yiv1719922278Section1 { }
```

Project Reference:

722.01083.00003

File Ref.  
2016-11-08\_Afro  
Energy 320 ER Notice\_of\_DSR General ENGLISH

Name: M. J van Wyk  
 Farm Name/s: Brakwal - etx  
 Email: vanwykmj@yahoo.com  
 Cell: 0725029098

20. October 2016

The Environmental Assessment Practitioner - SLR Consulting (South Africa) (Pty) Ltd.

Attention: Mr. Matthew Hemming

By e-mail: [mhemming@slrconsulting.com](mailto:mhemming@slrconsulting.com) CC: JC Pretorius [jcpretorius@slrconsulting.com](mailto:jcpretorius@slrconsulting.com)

**RE: COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE EXPLORATION RIGHT APPLICATION FOR PETROLEUM PRODUCTS ON VARIOUS FARMS IN THE FREE STATE (12/3/294 ER)**

As owner of the abovementioned farms I hereby confer with the comments made by EnviroWorks on behalf of the members of Free State Agriculture / Vrystaat Landbou and VKB.

1. In particular, I have a problem with the aerial survey over my farm/s.

If Yes, for the following reasons: (e.g. game farm / hunting season, sensitive equipment that may be damaged by electro-magnetic pulses emitted from the planes sensing equipment, etc.)

Sensitive equipment water for livestock, cultivated fields that we plant for food in winter for livestock etc.

Yes	No
X	

2. I welcome in the draft EIA report the exclusion of ground based exploration activities such as core borehole drilling and seismic surveys and thus I strongly object to amending the exiting environmental authorisation (EA) being applied for, in the future to reintroduce any ground based exploration activities. I will insist that a new EIA be done for each hole drilled / seismic survey conducted if it were to be applicable on any of my farms.

Yes	No
X	

3. I am concerned that my farm/s appear on the list of farms included in the project, but they lie outside of the outline area as indicated on the map and I request confirmation whether my specific farm/s as listed above are in fact included in this application or not?

Yes	No
X	

4. I strongly object to any actions that may lead to Hydraulic Fracturing and/or any other means of mineral extraction that may pollute the ground and surface water resources on which we depend in the application area.

Yes	No
X	

5. Other objections / comments: Strongly Object

[Signature]  
 Signed



Name: J.D. van Wyk  
Farm Name/s: Arundel - ext.

Email: vanwyklaetitia@yahoo.com

Cell: .....

22 October 2016

The Environmental Assessment Practitioner - SLR Consulting (South Africa) (Pty) Ltd.

Attention: Mr. Matthew Hemming

By e-mail: [mhemming@slrconsulting.com](mailto:mhemming@slrconsulting.com) CC: JC Pretorius [jcpretorius@slrconsulting.com](mailto:jcpretorius@slrconsulting.com)

**RE: COMMENTS ON THE DRAFT ENVIROMENTAL IMPACT REPORT FOR THE EXPLORATION RIGHT APPLICATION FOR PETROLEUM PRODUCTS ON VARIOUS FARMS IN THE FREE STATE (12/3/294 ER)**

As owner of the abovementioned farms I hereby confer with the comments made by EnviroWorks on behalf of the members of Free State Agriculture / Vrystaat Landbou and VKB.

1. In particular, I have a problem with the aerial survey over my farm/s.

If Yes, for the following reasons: (e.g. game farm / hunting season, sensitive equipment that may be damaged by electro-magnetic pulses emitted from the planes sensing equipment, etc.)

Water, sensitive equipment cultivated fields that we plant for food for livestock, water for livestock

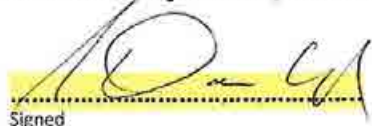
2. I welcome in the draft EIA report the exclusion of ground based exploration activities such as core borehole drilling and seismic surveys and thus I strongly object to amending the exiting environmental authorisation (EA) being applied for, in the future to reintroduce any ground based exploration activities. I will insist that a new EIA be done for each hole drilled / seismic survey conducted if it were to be applicable on any of my farms.

3. I am concerned that my farm/s appear on the list of farms included in the project, but they lie outside of the outline area as indicated on the map and I request confirmation whether my specific farm/s as listed above are in fact included in this application or not?

4. I strongly object to any actions that may lead to Hydraulic Fracturing and/or any other means of mineral extraction that may pollute the ground and surface water resources on which we depend in the application area.

5. Other objections / comments: Strongly object

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

  
Signed

Afro Energy (Pty) Ltd

APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM  
ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND  
MPUMALANGA PROVINCES (12/3/320 ER)

REGISTRATION AND RESPONSE FORM FOR INTERESTED AND AFFECTED PARTIES

NAME	HSV VAN WYK		
FARM / PROPERTY or ORGANISATION	HELDERFONTEIN (NR 10)		
POSTAL ADDRESS	PO BOX 177 DE RUST		
POSTAL CODE	6650	FAX NUMBER	N/A
TELEPHONE NUMBER	N/A	CELL PHONE NUMBER	0827067773
E-MAIL	34 SUNETTE @ GMAIL. COM		
PREFERRED CORRESPONDENCE (circle)	POST	FAX	<input checked="" type="radio"/> EMAIL <input type="radio"/> SMS
DATE	16 NOV 2016	SIGNATURE	HSV van Wyk

DETAILS OF OTHER PEOPLE WHO OWN LAND IN THE AREA OR YOU FEEL SHOULD BE INFORMED:

PLEASE IDENTIFY YOUR INTEREST IN THE PROPOSED PROJECT:

LAND OWNER

PLEASE WRITE YOUR COMMENTS AND QUESTIONS HERE:

KEEP A US INFORMED REGARDING THE PROPOSED  
PROJECT

PROJECT REF. 722.01083.00003

(use additional pages if required)

Please return completed forms to SLR:

Attention: Jeremy Blood

Tel: (021) 461 1118 or Fax: (021) 461 1120 or

E-mail: jblood@slrconsulting.com



## Edwynn Louw

---

**From:** Thami Hadebe Transnet Pipelines DBN <Thami.Hadebe@transnet.net>  
**Sent:** 16 November 2016 08:46 AM  
**To:** Jeremy Blood  
**Subject:** Application For Exploration Right For Petroleum On Various Farms In The Free State, Mpumalanga & KwaZulu-Natal Provinces (12/2/320 ER)  
**Attachments:** SLR.pdf; GoogleEarth\_Image.jpg; GoogleEarth\_Image.jpg; GoogleEarth\_Image.jpg

Good Morning,

Your application has reference.

Please find the attached comments. We have also included Google Earth images depicting our pipeline route in the vicinity of Utrecht in KwaZulu-Natal Province, for your information and reference.

Yours Sincerely  
Thami



**DISCLAIMER:** The information contained in this email and its attachments is both confidential and subject to copyright. If you are not the intended recipient, you are hereby notified not to read, disclose copy or use the contents thereof in any manner whatsoever, but are kindly requested to notify the sender and delete it immediately. This e-mail message does not create any legally binding contract between Transnet SOC LTD and the recipient, unless the contrary is specifically stated. Statements and opinions expressed in e-mails may not represent those of Transnet SOC LTD. While Transnet will take reasonable precautions, it cannot give any guarantee or warrant that this email will be free of virus infections, errors, interception and, therefore, cannot be held liable for any loss or damages incurred by the recipient, as a result of any of the above-mentioned factors.



PYP/W1/07/05/NC/32608

Mr Jeremy Blood  
 SLR Consulting (South Africa): Cape Town  
 PO Box 50145  
**CALEDON SQUARE**  
 7905

Dear Mr Blood

**NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION IN SUPPORT OF AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE, MPUMALANGA AND KWAZULU-NATAL PROVINCES**

Your letter with reference number 722.01083.00003 (12/2/320 ER) dated 20 September 2016 has reference.

Transnet Pipelines, a division of Transnet SOC Limited, is not affected by the proposal as indicated on your Free State/Mpumalanga/KwaZulu-Natal Locality and Project/Site Layout Plan.

Your awareness of the existence of Transnet's pipeline servitudes and concern for their integrity is appreciated.

Yours Sincerely

**Thami Hadebe (Mr)**  
**Servitude Management**

Date: 16 November 2016

A division of	202 Anton Lembede (Smith) Street	P.O. Box 3113
<b>Transnet SOC Ltd</b>	Durban	Durban, South Africa, 4000
Registration Number	4001	T +27 31 361 1456
1990/000900/30		F +27 31 361 1341

Directors: LC Mabaso (Chairperson) SI Gama\* (Group Chief Executive) Y Forbes GJ Mahlalela PEB Matheka ZA Nagdee VM Nkonyane SD Shane BG Stagman PG Williams GJ Pita\* (Group Chief Financial Officer)

\*Executive

Group Company Secretary: NE Khumalo

## Edwynn Louw

---

**From:** Tshifhiwa Makhokha <Tshifhiwa.Makhokha@dmr.gov.za>  
**Sent:** 17 November 2016 01:46 PM  
**To:** Jeremy Blood  
**Cc:** Shawn Janneker; Salani Shitlhangu  
**Subject:** Acknowledgement of Scoping Report

Good afternoon....

Please note that scoping report received by this office on the 10<sup>th</sup> of November 2016 is hereby acknowledged. The comment concerning the document will be sent for your attention after the document has been reviewed.

Kinds Regards  
Tshifhiwa

**Tshifhiwa Juliet Makhokha**  
**Environmental Officer: MEM**  
**Tel: 057 391 1323**  
**Fax: (057) 357 6003**  
**Cell: 082 045 8502**  
*U kondelela zwidisa Dakalo.*



## Edwynn Louw

---

**From:** M.J. Van Wyk <vanwykmj@yahoo.com>  
**Sent:** 22 November 2016 05:59 PM  
**To:** Edwynn Louw  
**Subject:** RE: Afro Energy 320 ER Notification of Draft Scoping Report

Baie dankie dat u terug gekom het. Die objeksies teen die eksplorasië van grond betreffende ons grond is van toepassing op u projek asook die ander projek. Die vorm s aan ons gegee deur ons boerevereniging Baie dankie Thys van Wyk

-----  
On Wed, 11/16/16, Edwynn Louw <elouw@slrconsulting.com> wrote:

Subject: RE: Afro Energy 320 ER Notification of Draft Scoping Report  
To: "M.J. Van Wyk" <vanwykmj@yahoo.com>  
Date: Wednesday, November 16, 2016, 9:01 AM

Good morning Mr Van Wyk,

Thank you for your comments as per the below email. Unfortunately there is a bit of confusion regarding which project you are responding to. Please would you mind clarifying which project you are responding to as the attachments you sent appear to relate to another project.

Thank you and kind regards,

Edwynn Louw  
Environmental Assessment Practitioner

Synergistics - part of the SLR group

E-Mail: elouw@slrconsulting.com  
Mobile: +27 71 365 5538  
Tel: +27 11 467 0945  
Fax: +27 11 467 0978

SLR Consulting  
(Fourways office)  
Block 7 Fourways Manor  
Office Park  
Cnr Roos and Macbeth Streets  
Fourways, Johannesburg, 2060  
South Africa

Our Ref: 10361



an agency of the  
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4503 | E: info@sahra.org.za  
South African Heritage Resources Agency | 111 Harrington Street | Cape Town  
P.O. Box 4637 | Cape Town | 8001  
www.sahra.org.za

Enquiries: Nokukhanya Khumalo

Tel: 021 462 4502

Email: nkhumalo@sahra.org.za

CaseID: 10361

Date: Monday November 28, 2016

Page No: 1

## Interim Comment

### In terms of Section 38(8) of the National Heritage Resources Act (Act 25 of 1999)

Attention: Donald Ncube

**This Scoping Report has been compiled and distributed for review and comment as part of the Scoping and Environmental Impact Assessment process that is being undertaken as part of the application by Afro Energy (Pty) Ltd**

Afro Energy (Pty) Ltd appointed SLR Consulting (South Africa) (Pty) Ltd to conduct a Scoping Report in support of an Environmental Authorisation application to the PASA for an Exploration Right licence, in terms of Environmental Impact Assessment (EIA) 2014 Regulations, Section 79 of MPRDA (28 of 2002). The application area is located over various farms between the border of the Free-State Province and the Mpumalanga Province. The Exploration work programme will include three phases of studies being non-invasive desktop studies and geophysical survey and invasive studies like rotary diamond core drilling which will involve ground clearance for road construction, drilling rig and workers camps. The estimated depth of the drilling is over 100m to an estimated 800m.

In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that before such sites are disturbed by development it is incumbent on the developer to ensure that a Heritage Impact Assessment is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required.

In your application received by SAHRA, there is no indication that an assessment of heritage resources including palaeontological resources was conducted. As such SAHRA requires a Heritage Impact Assessment and a Palaeontological Impact Assessment for the proposed development. These specialists' studies can only be conducted by suitably qualified Archaeologists and Palaeontologists for the respective assessments. If you are unaware of any archaeologists and palaeontologists a list of them working within Heritage Resources Management fields are provided in the following websites: (see [www.asapa.org.za](http://www.asapa.org.za)) and (see [www.palaeontologicalsociety.co.za](http://www.palaeontologicalsociety.co.za)).

Our Ref: 10361



an agency of the  
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4503 | E: info@sahra.org.za  
South African Heritage Resources Agency | 111 Harrington Street | Cape Town  
P.O. Box 4637 | Cape Town | 8001  
www.sahra.org.za

Enquiries: Nokukhanya Khumalo

Tel: 021 462 4502

Email: nkhumalo@sahra.org.za

CaseID: 10361

Date: Monday November 28, 2016

Page No: 2

If the property is heavily disturbed from previous developments then a letter of exemption from further heritage study may be submitted. This letter should be written by either an archaeologist and/or palaeontologist depending on exemption from further studies that is being motivated for, and the letter must be submitted to SAHRA for commenting.

A kml. file needs to be uploaded onto the case, within the case edits under the GISLayer/Palaeo\_sensitivity map.

SAHRA will comment further on this proposed development once the requested reports are submitted to the case.

Should you have any further queries, please contact the designated official using the case number quoted above in the case header.

Yours faithfully

---

Nokukhanya Khumalo  
Heritage Officer  
South African Heritage Resources Agency

---

John Gribble  
Manager: Maritime and Underwater Cultural Heritage Unit / Acting Manager: Archaeology, Palaeontology and Meteorites Unit  
South African Heritage Resources Agency



Our Ref: 10361



an agency of the  
Department of Arts and Culture

T: +27 21 462 4502 | F: +27 21 462 4503 | E: [info@sahra.org.za](mailto:info@sahra.org.za)  
South African Heritage Resources Agency | 111 Harrington Street | Cape Town  
P.O. Box 4637 | Cape Town | 8001  
[www.sahra.org.za](http://www.sahra.org.za)

Enquiries: Nokukhanya Khumalo  
Tel: 021 462 4502  
Email: [nkhumalo@sahra.org.za](mailto:nkhumalo@sahra.org.za)  
CaseID: 10361

Date: Monday November 28, 2016  
Page No: 3

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**ADMIN:**

Direct URL to case: <http://www.sahra.org.za/node/375269>

**Terms & Conditions:**

1. This approval does not exonerate the applicant from obtaining local authority approval or any other necessary approval for proposed work.
2. If any heritage resources, including graves or human remains, are encountered they must be reported to SAHRA immediately.
3. SAHRA reserves the right to request additional information as required.

## Edwynn Louw

---

**From:** Ben Travers <bentravers13@gmail.com>  
**Sent:** 30 November 2016 04:46 AM  
**To:** Jeremy Blood  
**Cc:** Theo Wicks; Edwynn Louw  
**Subject:** Re: Afro Energy proposals

Hi Jeremy & Theo,

I note the below article makes reference to Afro's applications in relation to fracking:

"It noted that several transnational and local corporations, including Rhino Oil and Gas, **Afro Energy**, Sungu Sungu and Motuoane Energy, had launched exploration proposals that could lead to fracking and other unconventional extraction technology."

<http://www.pressreader.com/south-africa/the-mercury/20161129/281547995500166>

My understanding is that the proposals outlined by Afro said there would not be any fracking.

Can you please confirm?

Thanks

Ben

On 19 October 2016 at 20:22, Jeremy Blood <[jblood@slrconsulting.com](mailto:jblood@slrconsulting.com)> wrote:

Dear Ben

Your email below refers.

We will include you on the project databases, and as such will be kept informed of when reports are available for comment and EIA progress.

Please could you send me the organisation you represent (if any), postal address and contact numbers.

Regards

Jeremy

## Jeremy Blood

---

**From:** JohanZ <JohanZ@daff.gov.za>  
**Sent:** 30 November 2016 08:18 AM  
**To:** Jeremy Blood  
**Subject:** 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR DAFF FS  
**Attachments:** Scanned from a Xerox Multifunction Printer.pdf

Good morning

Please find attached comments for your attention.

Regards,

Johan Zeelie

Resource Auditor

Directorate: Land Use and Soil Management Department of Agriculture, Forestry and Fisheries Omni Building, 1st Floor, 73 Aliwal Street, Bloemfontein PO Box 34521, Faunasig, 9325

Tel: 051 409 2624 Fax: 051 409 2625 Cell: 0824131796



# agriculture, forestry & fisheries

Department:  
Agriculture, Forestry and Fisheries  
REPUBLIC OF SOUTH AFRICA

Directorate: Land Use and Soil Management  
Posbus/PO Box 34521, FAUNASIG, 9325  
Omni Building, 1st Floor, 73 Aliwal Street, Bloemfontein  
Tel: 051 – 409 2624 Fax: 051 – 409 2625  
Enquiries: Mr. J Zeelie. Ref.: LUSM/19.7.2

SLR Consulting  
PO Box 10145  
CALEDON SQUARE  
7905

29 November 2016

**Attention: Mr Jeremy Blood**

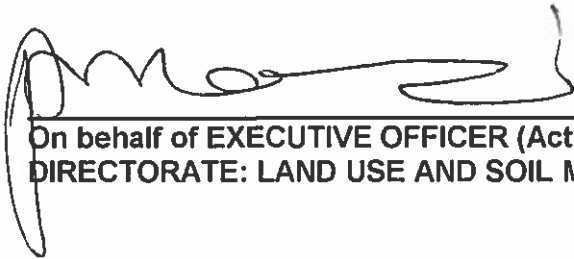
## EIA FOR AN EXPLORATION RIGHT APPLICATION FOR PETROLEUM AND NATURAL GAS ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): SCOPING REPORT.

With ref. to your correspondence and scoping report with reference **2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR DAFF FS** dated **8 November 2016**, the following:

- ❖ The top soil of the footprint area of the drilling sites and related infrastructure must be removed and stored separately for rehabilitation purposes.
- ❖ No drilling may take place on high potential agricultural soil.
- ❖ Measures must be put in place to prevent soil and water pollution.
- ❖ Areas where the soil has been compacted it must be scarified to ensure infiltration of water.
- ❖ The applicant must ensure that proper water run-off control planning is done so that water erosion does not take place. The necessary structures must therefore also be put in place where erosion may occur.
- ❖ The natural flow of run-off water may not be obstructed and measures must be put in place to ensure that this water drains freely to the lowest point.
- ❖ Soil will be disturbed during construction and this renders to the growth of annual weeds eg. Datura spp (Thom apple/Olieboom), Xanthium spinosum (Spiny cocklebur/ Boetebos), Xanthium strumarium (Large cocklebur/ Kankerroos) and Argemone spp (Mexican poppy/ Bloudissel). The applicant must therefore ensure that the declared weeds must be controlled before reproduction takes place. If the applicant needs advice regarding this matter this office can be contacted.

- ❖ A Declared Weed and Invader Plant Control Programme must be developed and implemented on all the areas related to this project.
- ❖ The applicant must ensure that measures are put in place to prevent veld fires.

Yours truly,

A handwritten signature in black ink, consisting of a large initial 'P' followed by a series of loops and a long horizontal stroke.

On behalf of EXECUTIVE OFFICER (Act 43 of 1983)  
DIRECTORATE: LAND USE AND SOIL MANAGEMENT

## Jeremy Blood

---

**From:** Tshifhiwa Makhokha <Tshifhiwa.Makhokha@dmr.gov.za>  
**Sent:** 07 December 2016 09:41 AM  
**To:** donald.ncube@badimo.co.za; Jeremy Blood  
**Cc:** Salani Shitlhangu; Shawn Janneker  
**Subject:** ACKNOWLEDGEMENT OF SCOPING REPORT FOR 320 ER

Good morning....

Please note that your scoping report submitted on the 10<sup>th</sup> of November 2016 is hereby acknowledged.  
Please note that any correspondence concerning this will be communicated through writing.

Kinds Regards

**Tshifhiwa Juliet Makhokha**  
**Environmental Officer: MEM**  
**Tel: 057 391 1323**  
**Fax: (057) 357 6003**  
**Cell: 082 045 8502**  
*U kondelela zwidisa Dakalo.*





## Jeremy Blood

---

**From:** Niven Reddy <niven@groundwork.org.za>  
**Sent:** 06 December 2016 04:05 PM  
**To:** Edwynn Louw  
**Subject:** Afro Energy Mapping

Good day Edwynn,

Trust you are well.

Can I kindly receive the exploration areas for Afro Energy in .KML file?

Kind regards,  
**Niven Reddy**

groundWork, Friends of the Earth South Africa  
P.O. Box 2375 Pietermaritzburg 3200  
South Africa

Cell: +27 79 5522 705  
Tel: +27 33 342 5662  
Fax: +27 33 342 5665  
[www.groundwork.org.za](http://www.groundwork.org.za)

## Jeremy Blood

---

**Subject:** FW: AFRO ENERGY - APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE KWAZULU-NATAL AND MPUMALANGA PROVINCES (12/3/321 ER): WITHDRAWAL OF APPLICATION

---

**From:** Susan Carter-Brown [<mailto:susan@naturestamp.co.za>]  
**Sent:** 07 December 2016 06:02 AM  
**To:** Matthew Hemming  
**Cc:** Edwynn Louw; 'Judy Bell'; 'Nicky McLeod'; [niven@groundwork.org.za](mailto:niven@groundwork.org.za); 'Nikki Brighton'; 'Francois Du Toit'; 'Sarah Allan'  
**Subject:** RE: AFRO ENERGY - APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE KWAZULU-NATAL AND MPUMALANGA PROVINCES (12/3/321 ER): WITHDRAWAL OF APPLICATION

Hi Matthew

Please could you advise how Afro Energy's policy to preserve natural resources and protect sensitive ecological areas will influence the 12/3/320 ER application for Free State and Mpumalanga provinces?

Many thanks  
Susan

---

**From:** Matthew Hemming [<mailto:mhemming@slrconsulting.com>]  
**Sent:** Tuesday, 06 December 2016 9:47 AM  
**To:** [susan@naturestamp.co.za](mailto:susan@naturestamp.co.za)  
**Cc:** Edwynn Louw; Theo Wicks  
**Subject:** RE: AFRO ENERGY - APPLICATION FOR AN EXPLORATION RIGHT FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE KWAZULU-NATAL AND MPUMALANGA PROVINCES (12/3/321 ER): WITHDRAWAL OF APPLICATION

Hi Sue

Theo is on leave hence my response to you.

Afro Energy advised that following the initial consultation of interested and affected parties and Scoping of the environmental attributes the company had established that a large portion of the 321 ER application area comprised sensitive environmental features and protected areas (including some proposed for protection). Additionally the rugged terrain in some areas would have posed formidable difficulties and challenges to gas drilling activities. The decision to withdraw the ER321 application is in line with **Afro Energy's policy to preserve natural resources and protect sensitive ecological areas.**

Kind regards

### Matthew Hemming

African ESIA Technical Discipline Manager  
SLR Consulting

Email: [mhemming@slrconsulting.com](mailto:mhemming@slrconsulting.com)  
Mobile: +27 82 940 8274  
Tel: +27 33 343 5826  
Fax: +27 11 467 0978

## Jeremy Blood

---

**From:** Rikus Lamprecht <rikus@enviroworks.co.za>  
**Sent:** 09 December 2016 08:28 AM  
**To:** Jeremy Blood  
**Cc:** Elbi Bredenkamp; Johan Botes; Hilary Hill (hilaryh@vkb.co.za); jack@vslandbou.co.za  
**Subject:** PROPOSED EXPLORATION PROJECT (12/3/320 ER) - Comments on the draft Scoping Report  
**Attachments:** Afro Energy 12-3-320 ER - Comments on Scoping Report.pdf

Good day Mr Blood

Hope all is well.

Enviroworks, an independent environmental consultancy, has been appointed by VKB Agriculture and all its stakeholders and members as well as Free State Agriculture, to review and comment on the Scoping Report for the above mentioned project on their behalf.

Herewith please find attached our comments on the Scoping Report for your consideration.

Feel free to contact me with any uncertainties.

Have a safe weekend.

Regards



The image shows a business card for Rikus Lamprecht, a Senior Environmental Consultant at Enviroworks. The card features the Enviroworks logo with the tagline 'Today's Impact | Tomorrow's Legacy'. It lists contact information including a phone number (+27(0)72 230 9598), an email address (rikus@enviroworks.co.za), and another phone number (+27(0)86 198 8895). The card also mentions that Enviroworks is part of the SHE Group. A vertical URL 'www.enviroworks.co.za' is on the left, and a list of branches (Bloemfontein, Johannesburg, Cape Town, Upington, Knysna, Somerset West, Springbok) is at the bottom left.

www.enviroworks.co.za

**enviroworks**  
Today's Impact | Tomorrow's Legacy

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**The Environmental Assessment Practitioner**

**SLR Consulting (South Africa) (Pty) Ltd.**

P.O. Box 1596  
Cramerview  
2060

**9 December 2016**

**Attention: Mr. Jeremy Blood**

Tel: 011 467 0945

Dear Mr. Blood

**RE: COMMENTS ON THE DRAFT SCOPING REPORT OF AFRO ENERGY (PTY) LTD FOR AN  
EXPLORATION RIGHT APPLICATION FOR PETROLEUM AND NATURAL GAS ON VARIOUS FARMS IN A  
PORTION OF THE FREE STATE AND MPUMALANGA PEOVINCES (12/3/320 ER)**

Enviroworks, an independent environmental consultancy, has been appointed by VKB Agriculture and all its stakeholders and members as well as Free State Agriculture, to comment on the Scoping Report for the above mentioned project on their behalf.

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## Comments on Draft Scoping Report

The extent and magnitude of socio-economic impacts associated with the intended project warrants the appointment of a separate specialist entity to adequately manage the public participation processes. The fact that the Environmental Assessment Practitioner (EAP) company conducting the Environmental Impact Assessment (EIA) process is also responsible for managing the public participation processes could most likely result in the inadequate addressing, feedback and resolution of the high volumes of public and I & AP concerns and objections anticipated to be received on the proposed project.

1. We are firstly constrained to express reservation regarding the competent authority's (PASA) ability to objectively assess and adjudicate the application moreover inasmuch as its mandate it stated to be:

“To **promote exploration** for onshore and offshore oil and gas resources and the optimal development on behalf of the Government.”

2. The following statement has been extracted from the Introduction on page 1 of the report and section 6.2.2:

“well stimulation (e.g. hydraulic fracturing) **will not**, at any time, be considered as an activity for this project. This applies to any possible future work, not just what is currently proposed.”

“Thus Afro Energy has indicated that well stimulation would not be required to release the CBM gas and will not at any time during the project life-cycle (exploration or production) be considered as an activity for this project.”

**It is therefore decisively confirmed by the applicant and the EAP that no well stimulation for example hydraulic fracturing will be applied for during the entire lifetime of this project from exploration through to desired operational/commercial extraction. No potential amendments to**

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**the authorisation at any stage in order to authorise and enable well stimulation may therefore be submitted to the competent authority during the entire lifetime of this project.**

3. Comments on section 2.1.3 on page iv, the Introduction page 1 and section 3.3.5 on page 21 of the report:

The EAP indicates that all responses to comments received during the PPP from I & AP's will be included in the Comments and Responses Report and the updated Scoping Report will be sent to PASA for decision making.

“The Scoping Report will then be updated into a final report, giving due consideration to the comments received, and submitted to the Petroleum Agency of South Africa (PASA) for acceptance.”

“After closure of the comment period, the Scoping Report will be updated to incorporate the comments received. All comments received during the review of this Scoping Report will be assimilated and responded to in an updated Comments and Responses Report; and The updated Scoping Report will be submitted to PASA for acceptance.”

**It has been our experience during various other current EIA processes for Exploration Right applications (12/3/315 ER; 12/3/318 ER & 12/3/294 ER) that comments received from I & AP's are grossly inadequately responded to by the EAP and this inadequate feedback is not returned to the actual I & AP who delivered the comments. Responses (inadequate) are simply included in a final report and directly submitted to PASA for decision making without the I & AP being afforded an opportunity to review the feedback to comments. This defies the logical purpose of a public participation process which should be aimed at identifying public concerns and attempting to adequately respond to and resolve such issues as far as practically possible through two way communication with the I & AP prior to final submissions. Responses to I & AP comments must not simply be performed by the EAP as a routine, low significance “tick box” exercise that forms part of the project scope of work.**



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**We therefore object to the EAP's responses to the comments received from I & AP's during the PPP being directly included into the Final Scoping Report and submitted to PASA. Responses on I & AP comments must firstly be sent to the relevant I & AP to review whether their issues have been satisfactorily addressed by the EAP.**

4. The following statement has been extracted from page vi of the report:

"The proposed exploration activities would allow for the determination of whether or not petroleum and gas resources are located within the ER application area."

**It is stipulated that the ER application is only for Coal Bed Methane (CBM) gas exploration. The wording of the report extraction above however seems to indicate petroleum as a separate entity from gas to be explored for (although the MPRDA definition of petroleum includes gas). Other potential petroleum resources may not form part of the ER application as only CBM gas is being applied for.**

5. The following statement has been extracted from section 2.3 on page 8 of the report; National Environmental Management Act, 1998

"Section 2 of NEMA sets out a range of environmental principles that are to be applied by all organs of state when taking decisions that significantly affect the environment."

**The ultimate objective of the current proposed exploration processes and project is essentially the commercial extraction of CBM gas which will have an impact on water sources and the environment. The impacts of subsequent ground based exploration activities and final impacts of the ultimate project objectives must logically/realistically be taken into account from initiation of the proposed project. This must be done in order to advise on the ultimate viability of the project from the start. The extremely important 'precautionary principle' and 'duty of care principle' embedded in the framework of the National Environmental Management Act (No 107 of 1998) (NEMA) must be applied to the project. This must be done to acknowledge and address**

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anticipated future risks and impacts associated with subsequent phases and ultimate final objectives of the project. This has however not been done.

The logical and environmentally responsible approach would be to investigate and consider the realistic future impacts and risks of the ultimate final project objective activities on the environment and relevant water sources. The applicant would be firmly aware of such potential future issues and impacts of the ultimate objectives of the proposed project. By not considering this and casting a 'blind eye' towards the future project risks and impacts, the environmental ignorance of the applicant and unwillingness to apply environmentally responsible and sustainable development principles will be undeniably exposed. The current approach being followed by the applicant is therefore not in accordance with the principles of environmental sustainability as set out in the National Environmental Management Act (No 107 of 1998).

The final ultimate project objective is commercial CBM gas extraction so the potential environmental risks and impacts must therefore be adequately investigated and reported upon right from the start. This must be done in order to objectively determine and inform on the viability of the proposed project with regards to environmental sustainability and the basic principles of NEMA.

6. Comments on page 10 of the report.

The applicant is applying for authorisation of listed Activity 12 of Listing notice 3 of the National Environmental Management Act (No 107 of 1998); EIA Regulation, 2014 for clearing vegetation in Critical Biodiversity Areas (CBA's).

In accordance with the latest Free State and Mpumalanga Biodiversity Plans, various significant CBA's are present within the proposed project area. These must be excluded from the EA application as has been done with the formally protected area.

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**The value and conservation of CBA's are crucial in the context of achieving minimum environmental conservation biodiversity targets for ecosystem types, species or ecological processes in the province. Therefore although not formally conserved as is the case with protected areas, the importance of CBA's in efficient environmental conservation is on the same if not higher level as protected areas.**

**For this reason we insist that all CBA's falling inside the proposed exploration area also be excluded from the proposed exploration area in the same manner as has been done with the formally protected area. We are opposed to any clearance of vegetation inside or even in close proximity to CBA's for any project exploration purposes.**

7. The following statement has been extracted from page 12 of the report:

“Well stimulation will not, at any time, be considered as an activity for this project (see Section 6.2.2). PASA has indicated that the dewatering of insitu water (which may be required as part of a future exploration or production phase) does not fall under “well stimulation”. Thus a Water Use Licence in terms of this Notice is not required for the proposed exploration activities.

**It is indicated in the report that 140 000 litres of water will be extracted from natural watercourses in the area and this constitutes a water use in terms of Section 21 of the National water Act (No 36 of 1998) which requires a Water Use License application (WULA). We are of the opinion that the scope of work of the ER application therefore requires a Water Use License.**

8. The following statement has been extracted from page 13 of the report:

“Section 38(1) of the Act defines the categories of development for which the responsible heritage resources authority must be notified. Amongst others, under Section 38(c) ‘any development or other activity which will change the character of a site- (i) exceeding 5 000 m2’ the responsible heritage authority must be informed of a development larger than 0.5 ha. Afro Energy is not proposing any activities that trigger the need for heritage permission.”

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**The report states that 5 core boreholes are proposed which will each have an impact footprint of 1000 m<sup>2</sup>. This equates to 5000 m<sup>2</sup> of impact. We are therefore of the opinion that Heritage permission is required for the proposed ER.**

9. The following statement has been extracted from section 2.5.5 on page 14 of the report Mining and Biodiversity Guideline (2013)

“The South African National Biodiversity Institute (SANBI) and partners produced a Mining and Biodiversity Guideline (2013) to provide practical guidance to the mining sector on how to address biodiversity issues in the South African context. This guideline provides a tool to facilitate the sustainable development of South Africa’s mineral resources in a way that enables regulators, industry and practitioners to minimise the impact of mining on the country’s biodiversity and ecosystem services.

The Guideline distinguishes between four categories of biodiversity priority areas in relation to their importance from a biodiversity and ecosystem service point of view as well as the implications for mining in these areas. These include areas designated as: 1) Legally Protected, 2) Highest Biodiversity Importance, 3) High Biodiversity Importance, and 4) Moderate Biodiversity Importance. The ‘Highest Biodiversity Importance’ category is based on the mapped extent of Critically Endangered and Endangered ecosystems, Critical Biodiversity Areas (CBAs), river and wetland Freshwater Ecosystem Priority Areas (FEPAs) with a 1 km buffer and Ramsar sites.

The Guidelines indicates that if the presence of biodiversity features, leading to the categorisation as a ‘Highest Biodiversity Importance’ area, are confirmed then this could be a fatal flaw or pose significant limitations for new mining projects. An environmental assessment should inform whether or not mining is acceptable, including potentially limiting specific types of prospecting or mining which may be deemed not acceptable due to the impact on biodiversity and associated ecosystem services found in the priority area. Mining in such areas may be considered out of place and

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authorisations may well not be granted. If granted, the authorisation may set limits on allowed activities and methods, the extent thereof and impacts.”

**In accordance with the Free State and Mpumalanga Biodiversity Plans various significant CBA's are present within the proposed project area. As discussed under comment number 6 above, these must be excluded from the EA application as has been done with the formally protected area.**

**As per comment number 6 above, we insist that all CBA's falling inside the proposed exploration area also be excluded from the proposed exploration area in the same manner as has been done with the formally protected area.**

10. The following statement has been extracted from section 4.2.1 on page 26 of the report:

“If the coal seam is permeable, dewatering the seam is enough to start gas flowing from the well. However, if the seam is not sufficiently permeable well stimulation may be necessary (USGS, 2000; Schlumberger, 2009).”

**As discussed under comment number 2, it is decisively confirmed by the applicant and the EAP that no well stimulation for example hydraulic fracturing will be applied for during the entire lifetime of this project from exploration through to desired operational/commercial extraction. No potential amendments to the authorisation at any stage in order to authorise and enable well stimulation may therefore be submitted to the competent authority during the entire lifetime of this project.**

11. Comments on Section 4.3 Needs and Desirability on page 29 and extraction form page vi.

“Afro Energy's ultimate goal is to provide a reliable source of “cleaner” energy in order to address the current energy crisis facing South Africa by diversifying the current energy mix, which is considered to be a key aspect to growing the economy of South Africa in the future.”



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**The needs and desirability of the proposed project is insufficiently and biasedly discussed in favour of gas utilisation as a form of alternative energy generation source. Available coal reserves for which rights are possessed will adequately sustain fossil fuel power generation into the significant future. If the applicant's ultimate goal, as indicated in the report, is to provide a reliable source of clean energy, South Africa possesses more than enough clean renewable energy resources and opportunities such as sunlight and wind which should rather be investigated and considered as replacement options for fossil fuel usage for electricity generation. The environmental impacts associated with such clean renewable energy alternative are significantly less and therefore more favourable when compared to the potential environmental impacts which hydrocarbon extraction and ultimate utilisation for energy generation would have on the environment and valuable agricultural sector in the area.**

### **The Gaborone Declaration for Sustainability in Africa**

**The overall objective of the Declaration is "To ensure that the contributions of natural capital to sustainable economic growth, maintenance and improvement of social capital and human well-being are quantified and integrated into development and business practice."**

**How was the objective of this declaration, of which South Africa is a signatory, addressed during the needs and desirability of the EIA process of the proposed project? No cost benefit analyses/comparisons were included in order to quantify and indicate the socio-economic advantages of proposed hydrocarbon extraction vs the potential disadvantages towards the sustainability of the agricultural sector. This is required in order to inform on the socio-economic viability of the proposed project towards the greater GDP and subsequent and human well-being in the country.**

Page 30, section 4.3.2.2 White Paper on Renewable Energy Policy

**"The position of the paper is based on the integrated resource planning criterion of "ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options". The White Paper affirms Government's commitment to develop a framework within which the renewable energy industry**



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can operate, grow, and contribute positively to the South African economy and to the global environment.”

**This reaffirms the statement above that clean renewable energy solutions should rather be investigated and pursued instead of promoting hydrocarbon extraction. The need and desirability of this project therefore does not provide sufficient motivation for the execution of this particular project.**

Page 30, section 4.3.3.2 Mpumalanga Growth and Development Path (MGDP) 2011

“The MGDP also identifies the need to support the development of clean forms of energy (including wind and hydro power), including gas production from landfill and organic waste.”

**This statement also reaffirms clean renewable energy solution requirements and potential landfill gas and organic waste gas but no motivation to the applicability and necessity of hydrocarbon gas is provided.**

12. The following statements have been extracted from the report on page xvi:

“The assessment of potential impacts associated with any future exploration or production activities would be undertaken as part of a future EIA (or environmental authorisation amendment) process, as required by NEMA.”

**We are strongly opposed to the possible amendment of the environmental authorisation (EA) to include future exploration and production activities at a later stage. We require that a completely new environmental authorisation (EA) application and subsequent Environmental Impact Assessment (EIA) process be conducted if the applicant wishes to conduct any subsequent ground based exploration and production activities.**

The reason for this requirement is that the severity and extent of impacts associated with the activities which are now initially being applied for to be authorised in the EA will differ

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significantly from the subsequent proposed activities and far greater impacts associated with the next phase of the ground based exploration and final production. A simple amendment to an existing EA will therefore not justify the significant change in scope and increase in impacts. We therefore require that new separate EA applications and subsequent EIA processes be conducted for any further future activities of the project rather than existing EA amendments.

13. Comments on section 4.3.5 on page 37 of the report; Consistency with NEMA principles

4(a)(vii), 4(a)(viii) & 4(i) under this heading again discuss the 'precautionary principle' and anticipated negative environmental impacts of the project. These crucial NEMA principles are however applied in a biased manner with regards to this project in the following manner:

When the need and desirability of the project is discussed, the apparent significant future project benefits of the CBM gas extraction and energy generation and assistance towards climate change prevention are highlighted along with all the various other envisaged advantages. However, once the project discussion moves towards the potential environmental impacts and negatives, the report conveniently reverts back to the argument that only the current exploration activities are applicable and only those impacts have been investigated; not the future impacts associated with extraction processes. This approach is inconsequential and (in our opinion) deliberately provides a skewed and biased image of the potential benefits vs risks of the ultimate project objectives which is commercial CBM gas extraction.

The final ultimate project objective is commercial CBM gas extraction so if the benefits of this final objective is continually highlighted and discussed in the report, the final potential environmental risks and impacts must also be adequately investigated and reported upon right from the start. This must be done in order to objectively determine and inform on the viability of the proposed project with regards to environmental sustainability and the basic principles of NEMA.

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### 14. Comments on section 4.3.5 Consistency with NEMA principles

**4 (p) under this heading discusses remedial cost provision. Also refer to comment 26 below. No specialist quantification has been conducted in this regard. How will the potential liability of risks associated with water source pollution due to core borehole drilling and the flying of the aeroplane for aeromagnetic survey be addressed and covered. What funds and insurance is in place to compensate in the event that water sources are accidentally polluted or the aeroplane crashes and results in the burning down of agricultural farm land or infrastructure. How will the applicant take responsibility in such an event and what funds and resources are available for such emergency events. An emergency plan and specialist quantification needs to be included in the EIA Report to adequately address this concern.**

### 15. Comments on section 4.3.5 Consistency with NEMA principles

**4 (r) under this heading discusses the exclusion of sensitive or vulnerable areas. As per comment 6 above, various significant CBA's are present within the proposed project area. These should also be excluded from the EA application as has been done with the formally protected area. The value and conservation of CBA's are crucial in the context of achieving minimum environmental conservation biodiversity targets for ecosystem types, species or ecological processes in the province. Therefore although not formally conserved as is the case with protected areas, the importance of CBA's in efficient environmental conservation is on the same if not higher level as protected areas.**

### 16. Comments on section 4.4.5, Exploration Right Application Area:

**The applicant and EAP must confirm that no possible future amendment/request to increase the size of the proposed exploration area will be submitted or permitted. The proposed exploration area will therefore not be enlarged at any stage.**

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### 17. Comments on section 4.5.1.1, Exploration Right Application Area and 6.1.6:

“Afro Energy is currently in the process of discussing possible locations with directly affected landowners.”

**Please provide detailed minutes and feedback on the discussion process conducted with landowners regarding the proposed drilling locations. Also indicate the comments received from the relevant landowners and their opinions regarding potential allowance of drilling on their properties.**

### 18. Comments on section 4.5.1.2, Core Borehole Drilling Procedure

“Soapy water is poured over the core to provide visual evidence of gas flow, which cannot be easily detected otherwise.”

**More information is required on the chemical composition of the “soap” to be used in order to make informed decisions regarding the potential environmental risks. The EAP must provide complete and comprehensive Material Safety Data Sheets (MSDS) for the “soap” to be used.**

### 19. Comments on section 4.5.1.3, Access and Site Demarcation

“Private property would only be accessed with prior consent of the landowner and then in terms of a written access agreement.”

**Proof of landowner consent must be provided during the EIA phase to indicate whether the relevant owners are in agreement with the exploration proses.**

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### 20. Comments on section 4.5.1.5, Core Borehole Drilling

**More information is required on the chemical composition of the drilling fluids in order to make informed decisions regarding the potential environmental risks. The EAP must provide complete and comprehensive Material Safety Data Sheets (MSDS) for all the potential drilling fluids to be used.**

### 21. Comments on section 4.5.1.6, Water use

**The proposed project area is a water stressed region with regards to surface and groundwater resources. The impacts of the required water use of 140 000 litres for the exploration activities and further envisaged exploration activities as well as the ultimate project objectives of commercial CBM gas extraction on water resources must therefore be investigated from the start. As indicated in comment 5:**

**The ultimate objective of the current proposed exploration processes and project is in essence the commercial extraction of CBM gas which will have an impact on water sources. The impacts of subsequent ground based exploration activities and final impacts of the ultimate project objectives must logically/realistically be taken into account from initiation of the proposed project. This must be done in order to advise on the ultimate viability of the project from the start. The extremely important 'precautionary principle' and 'duty of care principle' embedded in the framework of the National Environmental Management Act (No 107 of 1998) (NEMA) must be applied to the project. This must be done to acknowledge and address anticipated future risks and impacts associated with subsequent phases and ultimate final objectives of the project. This has however not been done.**

**The logical and environmentally responsible approach would be to investigate and consider the realistic future impacts and risks of the ultimate final project objective activities on relevant water sources. The applicant would be firmly aware of such potential issues and impacts of the proposed project. By not considering this and casting a 'blind eye' towards the future project risks and**



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impacts, the environmental ignorance of the applicant and unwillingness to apply environmentally responsible and sustainable development principles will be undeniably exposed. The current approach being followed by the applicant is therefore not in accordance with the principles of environmental sustainability as set out in the National Environmental Management Act (No 107 of 1998).

The final ultimate project objectives is commercial CBM gas extraction so the potential environmental risks and impacts on water sources must be adequately investigated and reported upon right from the start. This must be done in order to objectively determine and inform on the viability of the proposed project with regards to environmental sustainability and the basic principles of NEMA.

### 22. Comments on section 4.5.1.7, Waste Management

“All drill cuttings (from skips), general waste and **hazardous waste generated** at the drilling site would be separated and stored in containers, before being removed from site and disposed at an appropriately licensed landfill or waste facility.”

**No indication of the type and quantities of hazardous waste products to be generated is provided. Please provide a detailed indication of waste products and quantities in order to inform on the potential environmental risks and necessity for a Waste Management License application.**

### 23. Comments on section 4.5.1.8, Drilling completion and Rehabilitation

“Rehabilitation would be undertaken, in consultation with the landowner, to re-establish the pre-exploration land use.”

**A comprehensive rehabilitation plan must be developed and provided during the EIA phase.**



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### 24. Comments on 4.5.1, Core Borehole Drilling

**We are strongly opposed to core borehole drilling being conducted for the following reason related to insufficient information provided in the report:**

**No information is provided on the contractor company intended to perform the drilling operations. A comprehensive profile of the contractor company is required to inform on their suitable qualification, competence and relevant previous experience and success regarding core borehole drilling.**

### 25. Comments on section 4.5.2, Aeromagnetic Survey:

**The working of the Aeromagnetic Survey process is not adequately explained in order for the reader to understand the process in detail and inform on the potential environmental impacts it could cause. The only description provided under heading 4.5.5 for the process is as follows:**

**“As the aircraft flies, the magnetometer measures and records the total intensity of the magnetic field.”**

**This does not provide any indication of how the magnetometer functions and how exactly it obtains its data. Are signals sent to the surface and “bounced back” to enable the measurements or are signals only received. Significantly more detail on the working of this Aeromagnetic Survey process is required in order to make an informed decision regarding the potential environmental impacts.**

**During the planning regarding the timing and duration of the Aeromagnetic surveys, the presence of game farms in the area needs to be considered. No flying may take place over or in the vicinity of game farms during the hunting or animal breeding/mating seasons. Permission must first be obtained from relevant game farm land owners prior to conducting Aeromagnetic surveys in relevant areas.**

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### 26. Comments on section 4.5.3, Financial Provision:

“In terms of Section 24P of NEMA and associated regulations pertaining to the financial provision (GN R1147), an applicant for Environmental Authorisation relating to exploration must, before the Minister of Mineral Resources issues the Environmental Authorisation, comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts.

Afro Energy would put in place the required financial provision for the proposed exploration activities.”

“As part of the EIA process it is necessary to determine the quantum of a financial provision that is required for rehabilitation, closure and on-going post decommissioning management of negative environmental impacts (Regulations Pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations, GN 1147).”

**No specialist quantification has been conducted in this regard. How will the potential liability of risks associated with water source pollution due to core borehole drilling and the flying of the aeroplane for aeromagnetic survey be addressed and covered. What funds and insurance is in place to compensate in the event that water sources are accidentally polluted or the aeroplane crashes and results in the burning down of agricultural farm land or infrastructure. How will the applicant take responsibility in such an event and what funds and resources are available for such emergency events. An emergency plan and specialist quantification needs to be included in the EIA Report to adequately address this concern.**

**NEMA principle chapter 1; 4 (p) with regards to remedial cost provision is not adhered to. The risk aversion approach and responsibility of compensation associated with potential damage which could occur through water pollution or aeroplane accidents is not addressed. We require clarification of responsibilities insurance plans and emergency plans which will be put in place.**

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### 27. Comments on section 5.1.5, Vegetation

The majority of the proposed area falls inside the Frankfort Highveld Grassland vegetation type which is classified as vulnerable while the majority of the remaining portion falls inside the Soweto Highveld Grassland vegetation type which is classified as endangered. The potential future exploration and ultimate production/extraction activities will place significant additional strain on these already stressed vegetation types.

### 28. Comments on section 5.1.5.1, Bioregional Planning

**As per comment number 6: The CBA's present within the proposed exploration area must be excluded from the EA application as has been done with the formally protected area.**

The value and conservation of CBA's are crucial in the context of achieving minimum environmental conservation biodiversity targets for ecosystem types, species or ecological processes in the province. Therefore although not formally conserved as is the case with protected areas, the importance of CBA's in efficient environmental conservation is on the same if not higher level as protected areas.

For this reason we insist that all CBA's falling inside the proposed exploration area also be excluded from the proposed exploration area in the same manner as has been done with the formally protected area.

### 29. Comments on section 5.1.8.3, Groundwater use

“There is significant groundwater use at a local scale with many farmers dependent on the abstraction of groundwater for both potable water, as well as for stock watering and in some cases irrigation.”

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Section 6.1.2.3: “The use of groundwater may compete with existing users for the 3 to 4 week drilling period at a given location.”

**The proposed project area is a water stressed region with regards to surface and groundwater resources. The impacts of the required water use of 140 000 litres for the exploration activities and further envisaged exploration activities as well as the ultimate project objectives of commercial CBM gas extraction on water resources must therefore be investigated from the start.**

**It is mentioned that there will be potential impacts on the water quality and competition for availability with local farmers and the broader agricultural sector. These risks must be adequately investigated and the impacts on the water quality and availability for local agriculture must be discussed and reported on to enable informed decision making by the competent authority.**

### 30. Comments on section 5.3.4.4, Agricultural Activities

**The ultimate objective of the current proposed exploration processes and project is in essence the commercial extraction of CBM gas which will have an impact on water sources and agricultural activities. The impacts of subsequent ground based exploration activities and final impacts of the ultimate project objectives on agriculture in the area must logically/realistically be taken into account from initiation of the proposed project. This must be done in order to advise on the ultimate viability of the project from the start. The ‘precautionary principle’ and ‘duty of care principle’ embedded in the framework of the National Environmental Management Act (No 107 of 1998) (NEMA) must be applied to the project. This must be done to acknowledge and address anticipated future risks and impacts associated with subsequent phases and ultimate final objectives of the project.**

**A comprehensive quantitative cost benefit analyses is required to quantify and compare the socio-economic advantages of proposed CBM gas extraction vs the potential disadvantages towards the sustainability of the agricultural sector. This is required in order to inform on the socio-economic**

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**viability of the proposed project towards the greater GDP and subsequent and human well-being in the country. This has however not been done.**

31. Comments on section 5.3.4.5, Protected areas and Important Bird Areas

“The ER application area overlaps with four National Protected Areas Expansion Strategy (NPAES) focus areas for land-based protected area expansion.”

“The Mpumalanga Grassland Important Bird Area (IBA), which has been recognised by BirdLife South Africa and BirdLife International as both a national (SA 125) and global (ZA 016) IBA, extends over the eastern portion of the ER application area.”

**The exclusion of only the properties of protected areas within the proposed exploration area will not be sufficient. National Protected Areas Expansion Strategy focus areas and the Important Bird Area (IBA) must also be excluded from the project area. Sufficient buffer zones also need to be implemented around the outer boundaries of the protected areas in order to prevent any potential external edge impacts from occurring. The required sizes of such adequate buffer zones need to be determined by a suitably qualified and experienced ecologist familiar with the specific areas.**

**Due to their significant conservational importance and contribution, the NPAES focus areas and IBA must also be excluded from the proposed exploration area right from the start.**

32. Comments on section 6.1.2.2, Contamination of ground water resources and risk ratings in section 7

**No mention is made or discussion of groundwater potentially being contaminated by underground gas deposits being opened and released/escaped. This is a major concern as a potential highly significant environmental impact and source of groundwater pollution and must therefore be adequately investigated and objectively informed on during the EIA phase. Sufficient mitigation**



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measures, emergency plans and financial provisions must be put in place to prevent such undesired contamination.

The risk rating and scoring of the environmental impact of groundwater contamination in table 7 under section 7 must be suitably revised in order to include and indicate the severity of potential contamination through gas release/escape.

33. Comments on section 6.1.5, Heritage

The report states that 5 core boreholes are proposed which will each have an impact footprint of 1000 m<sup>2</sup>. This equates to 5000 m<sup>2</sup> of impact. We are therefore of the opinion that Heritage permission is required for the proposed ER.

34. Comments on section 6.2.1, Risks of possible future exploration and production

As per comment number 11; The needs and desirability vs environmental risks of the proposed project is insufficiently and biasedly discussed in favour of gas utilisation as a form of alternative energy generation source.

When the need and desirability of the project is discussed, the apparent significant future project benefits of the CBM gas extraction and energy generation and assistance towards climate change prevention are highlighted along with all the various other envisaged advantages. However, once the project discussion moves towards the potential environmental impacts and negatives, the report conveniently reverts back to the argument that only the current exploration activities are applicable and only those impacts have been investigated; not the future impacts associated with extraction processes. This approach is inconsequential and (in our opinion) deliberately provides a skewed and biased image of the potential benefits vs risks of the ultimate project objectives which is commercial CBM gas extraction.



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**The final ultimate project objective is commercial CBM gas extraction so if the benefits of this final objective is continually highlighted and discussed in the report, the final potential environmental risks and impacts must also be adequately investigated and reported upon right from the start. This must be done in order to objectively determine and inform on the viability of the proposed project with regards to environmental sustainability and the basic principles of NEMA. This has however not been done.**

35. Comments on section 7:

**The risk ratings as per section 7 were not determined and conducted by relevant specialists in the various required fields of expertise. As these ratings will influence the decision making process of the competent authority, they must firstly be verified and confirmed by specialists in the relevant fields of expertise namely ecology, geo-hydrology and heritage. This will ensure credibility of the provided risk ratings for informed decision making by the competent authority.**

36. Comments on section 7:

**Various other significant similar exploration applications are in progress in the adjacent and greater Free State area. The negative environmental impacts associated with ground based exploration activities and subsequent commercial extraction of hydrocarbons will be considerably amplified by the cumulative effects of various similar activities in the wider vicinity.**

**The potential cumulative effects associated with the ultimate project objectives have not been investigated or discussed at all in the report. Cumulative Impact Assessments form a crucial part of assessing a project's viability and informing the competent authority's decision making process. Cumulative impacts must be adequately investigated and reported on right from the start.**

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Please feel free to contact us in the event of any questions or uncertainties.

Regards

A handwritten signature in black ink, appearing to read "Rikus Lamprecht".

Rikus Lamprecht

*Senior Environmental Specialist*

072 230 9598

[rikus@enviroworks.co.za](mailto:rikus@enviroworks.co.za)

## Jeremy Blood

---

**From:** Robert Davel <robert.mpl@mweb.co.za>  
**Sent:** 09 December 2016 10:39 AM  
**To:** Jeremy Blood  
**Cc:** Bertus Swart; Hennie Laas  
**Subject:** Application 12-3-320  
**Attachments:** Afro Energy 12-3-320 ER - Comments on Scoping Report 5 December 2016.docx

Good day Mr. Blood

Mpumalanga Agriculture hereby give our concerns on application 12/3/320 for prospecting rights in the Free State and a part of Mpumalanga.

There are various issues we want to bring to your attention.

Our concerns on application 12/3/320 are best defined in the attached comments from Enviro Works on the draft scoping report by Afro Energy.

Secondly I want to bring under your attention that the same reasons (explained in the mail from Matthew Hemming on 6/12/2016) for Afro Energy to withdrawn application 12/3/321 are also applied to application 12/3/320.

Kind regards.

Robert Davel  
Hoofbestuurder / General Manager  
Mpumalanga Landbou/Agriculture  
Tel: 017 - 819 1295  
Fax: 086 660 5673  
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2350



## Edwynn Louw

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**From:** Susan Carter-Brown <susan@naturestamp.co.za>  
**Sent:** 09 December 2016 01:33 PM  
**To:** Edwynn Louw  
**Cc:** 'Nikki Brighton'; 'Judy Bell'; 'Nicky McLeod'; 'Francois Du Toit'; Sinegugu Zukulu; sviljoen@wwf.org.za; 'Dominic Wieners'; 'Bronwyn Howard - Urban Eco Life'; 'Kerry Carter-Brown'  
**Subject:** RE: Afro Energy 320 ER Notification of Draft Scoping Report  
**Attachments:** SLR comment \_NatureStamp\_320ER\_Afro Energy Free State and Mpum.pdf

Hi Jeremy

[RE: for the Standerton, Frankfort, Vrede towns. Free State and Mpumalanga provinces application for exploration \(12/3/320/ER\)](#)

Please see my comments attached **which are due today** regarding the application that **includes aeromagnetic surveying and drilling of up to five stratigraphic core boreholes.**

Please confirm receipt of this email.

Many thanks  
Susan

---

**From:** Edwynn Louw [mailto:elouw@slrconsulting.com]  
**Sent:** Tuesday, 08 November 2016 10:24 AM  
**To:** Edwynn Louw  
**Subject:** Afro Energy 320 ER Notification of Draft Scoping Report

Project Reference:  
722.01083.00003

File Ref. 2016-11-08\_Afro Energy 320 ER Notice\_of\_DSR General ENGLISH

8 November 2016

### **ATTENTION: LANDOWNER/STAKEHOLDER**

### **AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER): NOTIFICATION OF AVAILABILITY OF SCOPING REPORT FOR REVIEW AND COMMENT**

Our previous correspondence of 20 September 2016 regarding above-mentioned project refers. This letter provides information on the availability for comment of the Scoping Report prepared for the above-mentioned project.

Notice is hereby given, in terms of the National Environmental Management Act, 1998 (No. 107 of 1998), as amended, that a Scoping Report has been made available for a 30-day public review and comment period from **9 November to 9 December 2016**. A copy of the Executive Summary of the Scoping Report is enclosed for your reference (also available in English or Afrikaans). Copies of the full Scoping Report will be available on the SLR website ([www.ccaenvironmental.co.za](http://www.ccaenvironmental.co.za)) and at the following locations from 9 November 2016:

**RE: COMMENT ON DRAFT SCOPING REPORT**

AFRO ENERGY - EXPLORATION FOR PETROLEUM ON VARIOUS FARMS IN A PORTION OF THE FREE STATE AND MPUMALANGA PROVINCES (12/3/320 ER)

**ATT:** SLR Consulting (Pty) Ltd  
Afro Energy (Pty) Ltd  
Petroleum Agency of South Africa  
Department of Mineral Resources

I submit the following comments for consideration and inclusion in the final Scoping Report for the Standerton, Frankfort, Vrede towns. Free State and Mpumalanga provinces application for exploration (12/3/320/ER) currently proposes by Afro Energy (Pty) Ltd.

**1. The project is fundamentally flawed as regarding Need and Desirability.**

Extracts from the Draft Scoping Executive Summary, dated 8 November 2016 –

*"Afro Energy's ultimate goal is to provide a reliable source of "cleaner" energy in order to address the current energy crisis facing South Africa by diversifying the current energy mix, which is considered to be a key aspect to growing the economy of South Africa in the future' While natural gas is cleaning burning at the endpoint, the environmental degradation in extraction and transportation negate its claims as being a 'green / clean fuel'.*

*Further – "As economic growth is dependent on the availability of electricity, ensuring a sustainable and reliable supply of electricity with sufficient capacity is a key aspect to growing the economy of South Africa. The electricity shortages experienced in South Africa over the past decade were a contributing factor to the significant slowdown in economic growth rate. In the context of the above, the use of natural gas for electricity generation is considered to have substantial benefits and is identified in national policy, together with renewable energy technologies, toward diversifying the domestic energy supply away from coal. The economic feasibility of using natural gas for domestic power generation is dependent on the availability of domestic reserves of natural gas, as well as the financial cost of importing natural gas".*

*True, but the extraction of unconventional gas will, at the same time as improve electricity supply, undermine South Africa's natural resource base – especially our water resources – which underpin the country's economy.*

*Thus, an increase in domestic natural gas reserves would enable South Africa to take steps to secure the countries' energy supply (through diversification), assist in reducing the emissions of greenhouse gases (by reducing the country's reliance on coal for electricity generation) and reduce the need for the importation of gas. As such, exploration for additional domestic hydrocarbon reserves is considered important and supported by national policy, and any discoveries would be well received by the local market. This is inaccurate and misleading. The sheer volume of public protest for this application should be an indication that natural gas will NOT be well-received by the local market!*

*National Policy and Planning Context*

- White Paper on the Energy Policy of the Republic of South Africa (1998)*
- White Paper on the Renewable Energy Policy (2003)*
- National Gas Infrastructure Plan (2005)*
- New Growth Path (2011)*
- National Development Plan (2012)*
- Integrated Resource Plan for Electricity (2010 and updated in 2013)*
- Draft Integrated Energy Plan (2013)*
- Gas Utilisation Master Plan (GUMP) - Paris Agreement, United Nations Framework Convention on Climate Change - National Climate Change Response White Paper*
- Consideration was also given to regional policy and planning context relating to development within the KwaZulu-Natal in general.*

*If policy were to change to reduce the monopoly of big business energy suppliers and to rather incentivise renewable energy alternatives, renewables could provide a major component of the national power requirement. The current legislation should not be the framework against which need / desirability is measured.*

Note that the Environmental Assessment Practitioner (EAP) describes the benefits of natural gas which is 1) misplaced as this is an application for exploration rights; and in all other instances in the report, only the impacts of exploration are addressed; and 2) misleading, as only the benefits of natural gas (e.g. fracking) are given; there is no mention of the negative impacts of unconventional extraction. This highlights a lack of independence by the author in purporting in the Needs and Desirability section only positive outcomes of gas extraction – and not indicating the dire environmental and local social impacts.

Notwithstanding, this is confirmation that exploration will lead to fracking – and thus all Interested and Affected Parties (IAPs) concerns regarding fracking MUST be considered.

2. With regards to the aeromagnetic aerial surveying, it is maintained that **an aircraft flying at low altitude is an invasion of privacy and may well be disruptive of livestock**. Please advise what mitigation measures you propose in this regard.

I propose that every aeroplane conducting the survey have an Observer from FrackFree South Africa in the plane to act as an independent watchdog.

3. **Specialist studies:** Due to the heightened public protest and contentious nature of the project, all specialist studies conducted for the on-ground seismic drilling should be subject to **external peer review**. **Further public participation** is required in the areas where the proposed drill locations will be and further site details are known. Ecological, groundwater and heritage specialist studies are inadequate to fully address impacts of the proposed exploration activities. The following further studies should be included –

- a. Vegetation
- b. Watercourse (surface)
- c. Social

All specialist studies should include **comprehensive ground-truthing and on the ground investigations**. Desktop assessments alone are wholly inadequate.

4. The landowner details of the drill sites are requested. Landowner Consent forms should be included in the EIR.
5. The process in terms of re-zoning agriculture land for industrial use should be explained. It is my understanding that a SPLUMA application (or similar) is required to correctly re-zone land for required purposes.
6. **Water Use Documentation:** The EIR should list all water use licensing documentation for each property where the drilling activities would take place. All details in this regard should be provided, including if the activity is under General Authorization.
7. Measures to ensure longterm maintenance of decommissioned drill sites should be provided. The responsibility of such should be indicated.
8. Please advise why **exclusion zones** (Critical Biodiversity Areas, Protected Areas, water resource buffers etc) have **not been mapped on the application areas**. Fracking / extraction should not be allowed in these areas and thus they should not be included in the application for exploration for fracking / extraction.
9. A list of all drilling fluids and their associated 'hazardous material' classification should be provided. **Material Data Safety Sheets** should be provided for all drilling fluids proposed to be utilized.
10. Working in the environment sector, I have first-hand knowledge and experience of the well-documented **poor monitoring and enforcement of our current legislation for environmental compliance**. South Africa does not have the institutional capacity to regulate and monitor technical (and underground!) extraction processes to ensure that gas companies are fully compliant with the rules and regulations governing the industry.
11. The definition of cumulative impacts, as per GN 982 of the EIA Regulations 2014 is as follows –

**“cumulative impact”**, in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities;

The Draft Scoping Report, states the following – *“The initial exploration work programme is restricted to an aeromagnetic survey and drilling of up to five stratigraphic core boreholes. No stimulation, pressure testing, hydraulic fracturing or water abstraction is included in the proposed exploration work.... Based on Afro Energy’s existing ER in the Amersfoort area and its success of extracting commercial rates of gas from unstimulated test wells, well stimulation (e.g. hydraulic fracturing) will not, at any time, be considered as an activity for this project. **This applies to any possible future work**, not just what is currently proposed”.*

In the Scoping Report, the 'reasonably foreseeable future impact' of Coal Bed methane extraction (i.e. fracking) as a consequence of exploration has been omitted. This is a major flaw in the EIA and grounds for appeal.

All impacts of Coal Bed methane extraction (i.e. fracking) as a consequence of exploration should be investigated in detail in the EIR.

On these grounds, **I object to the proposed application and any future applications for on-ground exploration and fracking.**

I propose that investments into unconventional extraction and nuclear be re-directed into renewable and autonomous energy solutions. While this will not line the pockets of political powers, it will conserve our natural resources and the livelihoods reliant upon such.

Yours sincerely  
Susan Carter-Brown



**Susan Machpesh (nee Carter-Brown)** : Environmentalist: BSc Honours (Enviro Sci)  
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## Edwynn Louw

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**From:** Bradley Gibbons <bradleyg@ewt.org.za>  
**Sent:** 09 December 2016 10:26 PM  
**To:** Jeremy Blood  
**Subject:** Letter of response for: AFRO ENERGY Application (12/3/320 ER)  
**Attachments:** EWT\_TGSP\_LetterofResponse\_Afro\_Energy\_320\_ScopingReport.pdf  
**Importance:** High

Dear Jeremy

I have attached my letter of response for the Afro Energy Application (Reference 12/3/320 ER) that is due today

Regards  
Bradley

**Bradley Gibbons**  
**Senior Field Officer, Threatened Grassland Species Programme**  
**Endangered Wildlife Trust**  
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*This E-mail message and its attachments are subject to the disclaimer published at <http://www.ewt.org.za>*



Private Bag X11  
Modderfontein  
1645  
9 December 2016

ATTENTION: Mr Jeremy Blood  
SLR Consulting  
P O Box 10145  
Caledon square  
7905

Dear Jeremy

**RESPONSE TO: Application for Exploration Right by Afro Energy (Pty) Ltd (Reference 12/3/320 ER)**

The Endangered Wildlife Trust (EWT) is a non-governmental, non-profit, conservation organisation, founded in 1973 and operating throughout southern Africa. The EWT conserves threatened species and ecosystems in southern Africa by initiating research and conservation action programmes, implementing projects which mitigate threats facing species diversity and supporting sustainable natural resource management. The EWT furthermore communicates the principles of sustainable living through awareness programmes to the broadest possible constituency for the benefit of the region. The EWT has developed a unique operational structure through which the mission and objectives of the EWT can be achieved. The EWT achieves its conservation goals through specialist, thematic Working Groups, designed to maximise effectiveness in the field and enhance the development of skills and capacity. One such Working Group is the Threatened Grassland Species Programme.

The EWT is registered as an interested and affected party for the EIA for an Exploration Right application for petroleum and natural gas by Afro Energy (Pty) Ltd on various farms in a portion of the Free State and Mpumalanga Provinces (12/3/320 ER). The EWT's comments on the Scoping Report follow below.

1. Sungazers (*Smaug giganteus*) have been mentioned as a vulnerable species on page 70 of the Scoping Report, however the majority of Sungazers are found in the Free State. It is noted that reference is only made to the Mpumalanga 2003 Status and the IUCN status and as such, is woefully incomplete. No preference is made to the Free State Status, despite as stated above, the majority of the Sungazer populations resides in the Free State. Furthermore, no reference is made to the national protection afforded to Sungazers, by their inclusion in the 2007 list of critically endangered, endangered, vulnerable and protected species, commonly known as the TOPS list. In addition to the points above specific to Sungazers, we note that the mere listing of species which may be impacted without including any proposed efforts to be taken or which may be taken to protect them or reduce the threats they face, is short-sighted.

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**Tel:** +27 (0) 11 372 3600 **Fax:** +27 (0) 11 608 4682 **E-mail:** [ewt@ewt.org.za](mailto:ewt@ewt.org.za) **Web:** [www.ewt.org.za](http://www.ewt.org.za)

The Endangered Wildlife Trust is a non-profit, public benefit organisation dedicated to conserving species and ecosystems in southern Africa to the benefit of all people.

**NPO Number:** 015-502, **PBO number:** 930 001 777, **Member of IUCN** - The International Union for Conservation of Nature  
The Endangered Wildlife Trust is US 501(c)(3) compliant under **US IRS Registration number:** EMP98-0586801.



2. Water is vital for all threatened species found in the proposed area of exploration. This area is not only important for their needs, but also for water production within the Upper Vaal Catchment. The Klip River is an example of a tributary to the Vaal River Catchment which flows through the proposed area of exploration. Gauteng relies on its source of water from the Vaal Catchment that receives water from the Upper Vaal Catchment. Page xiii of the Scoping Report states: *“In addition, inadequate management of surface sumps could result in the contamination of surface water resources. The release of contaminants into water resources could result in a deterioration of water quality, limiting use by water users, as well as damaging aquatic ecosystems.”*

Being an important catchment vital for the supply of water to Gauteng, the mere noting of a possible threat to it is not sufficient. Therefore, more detail is required as to how the threat can be avoided. Clarity is needed for the term “inadequate management” and what will be necessary to ensure that there is adequate management at sites. It is felt that the statements are too vague in the Scoping Report, which is not appropriate for a catchment of high importance like the Upper Vaal Catchment. The Upper Vaal Catchment is regarded as having a “good” river health by the State-of-Rivers Report: Free State Region River Systems (Department of Water Affairs and Forestry 2003). This report also states that tributaries *“play an important role in the water supply for domestic, agriculture and industrial users in the area”*.

Additionally, the threats of contamination caused by drilling the core sites has also not been noted.

3. Groundwater is essential for sources of water such as springs and wetlands. Therefore, groundwater is crucial for biodiversity and if it is no longer available, it will result in biodiversity loss. Reference is made to groundwater on page xiii as:

*“\* Altered hydrogeological regime and groundwater availability Core hole drilling would more than likely involve interaction with groundwater, which could have an impact on groundwater availability.*

*\* Contamination of groundwater resources Contamination of groundwater could occur as a result of the use of drilling fluids during core hole drilling, and accidental spillages and leaks”*

The above statement is similar to the points raised in paragraph 2 above, by failing to mention the possibility of leakage of gas into groundwater during the process of a core drilling site. Although this is not an application for extraction, the drilling of core sites for exploration can still have an impact on the groundwater.

4. Natural, intact grasslands make up over 60% of the application area and further loss of grasslands will mean a loss of biodiversity, increased soil erosion and less area for water production.

Although biodiversity is mentioned on page 62: *“The ER application project area is located within the Grassland Biome, which is the largest of South Africa’s biomes, and is considered to*

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The Endangered Wildlife Trust is a non-profit, public benefit organisation dedicated to conserving species and ecosystems in southern Africa to the benefit of all people.

**NPO Number:** 015-502, **PBO number:** 930 001 777, **Member of IUCN** - The International Union for Conservation of Nature  
The Endangered Wildlife Trust is US 501(c)(3) compliant under **US IRS Registration number:** EMP98-0586801.



have an extremely high biodiversity, second only to the Fynbos Biome”), the possible loss of biodiversity is not mentioned.

Page 110 for the Ecological Assessment (8.3.1) states that: “Identify any species of special concern (vegetation and fauna) viz. species with conservation status, endemic to the area or threatened species that exist or may exist on site”. However, no mention has been made for mitigation measures that will be in place for species of special concern.

Lastly, the EWT wishes to put on record that the public participation process for this Scoping Report was inadequate as it failed to involve all landowners. Several prominent landowners who will be directly affected do not know about this development and while we note that notices have been put up in places in places such as Vrede, notices have not been placed in areas where many affected landowners will see them. This must be addressed as the notices have thus failed to make people aware of the proposed activity.

Regards

Bradley Gibbons, Field Officer, Threatened Grassland Species Programme

Endangered Wildlife Trust

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The Endangered Wildlife Trust is a non-profit, public benefit organisation dedicated to conserving species and ecosystems in southern Africa to the benefit of all people.

**NPO Number:** 015-502, **PBO number:** 930 001 777, **Member of IUCN** - The International Union for Conservation of Nature  
The Endangered Wildlife Trust is US 501(c)(3) compliant under **US IRS Registration number:** EMP98-0586801.

**APPENDIX 5.10: COMMENTS AND RESPONSES REPORT**

# AFRO ENERGY (12/3/320 ER):

## COMMENTS AND RESPONSES REPORT

### 1. INTRODUCTION

The purpose of this Comments and Responses Report is to record, and respond to, all written comments received from Interested and Affected Parties (I&APs) during the Pre-Application and Scoping phases undertaken as part of the application by Afro Energy (Pty) Ltd (hereafter referred to as “Afro Energy”) for an Exploration Right (ER) to explore for “Petroleum and Natural Gas” on various farms in a portion of the Free State and Mpumalanga provinces (12/3/320 ER).

The following sections of this report are structured as indicate below.

Section	Description	Page number
Section 2	Records, and respond to, all comments received during the <b>Pre-application Public Participation Process</b> (i.e. during the Background Information Document (BID) review and comment period)	Page 2
Section 3	Records, and respond to, all comments received during the <b>draft Scoping Report review and comment period</b>	Page 15

No importance should be given to the order in which the categories within each section are presented. As far as possible, comments are presented verbatim from written submissions. Where applicable, responses to comments and questions are given or cross-referenced to the relevant section of text in the Scoping Report.



## 2. COMMENTS RECEIVED DURING THE PRE-APPLICATION PUBLIC PARTICIPATION PROCESS

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
2.1	I&AP Registration	Mpumalanga Agriculture, Robert Davel	E-mail, 2016/09/20	Mpumalanga Agriculture is one of nine provincial affiliates from Agri SA. On our side we host 35 Farmers Associations in Mpumalanga. Our aim is to assist our members in their task of sustainable food production. We are definitely not in favour of this application for exploration rights on such a big area without a specific goal. At this stage we already oppose the similar application from Rhino Oil and Gas. Please note our registration as interested and affected party in this application by Afro Energy. Please confirm our registration as affected party by e-mail.	E-mail was acknowledged on 20 Sept 2016. Mr Davel and Mpumalanga Agriculture have been registered on the project database (see Appendix 5.2).
2.2	Information request and I&AP Registration	Free State Agriculture, Jack Armour	E-mail, 2016/09/22	Could you kindly send us a .KZM of the area for which the EA is registered? As well as any further documentation – i.e. please register us as an IAP.	A copy of the BID and kmz file of the 320 ER application area were send to Mr Armour on 23 and 28 Sept 2016, respectively. Mr Armour and Free State Agriculture have been registered on the project database (see Appendix 5.2).
2.3	Information request and I&AP Registration	Endangered Wildlife Trust, Bradley Gibbons	E-mail, 2016/09/26	Please also register me as an I&AP for this application. Can I please have a .kml file or .shp file of this area?	The kmz file of the 320 ER application area was send to Mr Gibbons on 28 Sept 2016. Mr Gibbons and the Endangered Wildlife Trust have been registered on the project database (see Appendix 5.2).

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
2.3 cont.	Afro Energy's existing ER application	Endangered Wildlife Trust, Bradley Gibbons	E-mail, 2016/09/26	What is the latest news on the Afro Energy application that Matthew Hemming was involved with in the Memel area in 2013?	A decision on the Memel and Wakkerstroom application (12/3/270 ER) is still pending.
2.4	Fracking	Frack Free South Africa, Judy Bell	E-mail, 2016/09/27	This IUCN notice below has reference to your fracking applications for exploration in our special places.	Based on Afro Energy's existing ER in the Amersfoort area and its success of extracting commercial rates of gas from unstimulated test wells, well stimulation (e.g. hydraulic fracturing) <u>will not</u> , at any time, be considered as an activity for this project (refer to Section 6.2.2 of the main report for further discussion in this regard).
	Exclusion areas			Please make sure you delineate all the sacred sites, which includes sacred waters (previous request) when you are doing the exclusion maps (not just the protected areas) for us – we still are waiting for all the other legally protected areas (water courses, heritage sites, etc.) to be delineated in the maps which so many IAP's have requested you share with us. Please record this in your registers.	The requirement for the exclusion of areas from an ER application area is regulated by Section 48(1) of the MPRDA. In this regard SLR has identified the properties with Protected Area status in terms of the NEMPAA and advised the applicant to remove these from the ER application area. Heritage resources are not identified in the regulatory framework as features that must be excluded from an ER application area.  It is, however, noted that heritage resources are protected through various means in the regulatory framework (notably NHRA). Any exploration or production activities that could have an effect on heritage resources would have to avoid these resources or the approvals required in terms of this regulatory framework would have to be obtained.  We are confident that the environmental attributes

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
					(and heritage resources in particular) which could be affected by the proposed activities will be adequately documented and delineated in our reports. We will also ensure that the impact assessments that we undertake give consideration to the potential impacts of the proposed activities on these resources. Refer to the Plan of Study for EIA in Section 8 of the main report.
2.5	Afro Energy's existing ER application	Endangered Wildlife Trust, Bradley Gibbons	E-mail, 2016/09/27	I've had a few people ask me about the new Afro Energy application and how it compares to the Afro Energy application, in the Memel area, that you were involved with before you joined SLR. You are the best person to ask and I am not sure what to say.	A decision on the Memel and Wakkerstroom application (12/3/270 ER) is still pending.
2.6	Application for a Water Use Licence	Department of Water and Sanitation, Anet Muir	E-mail, 2016/09/28	As per attached emails you represent Afro Energy and your background document indicates the application for exploration for CBM (MPRDA) and environmental Authorisation. Please note the department declared unconventional gas exploration and production including CBM as a controlled activity and therefore your client requires a water use authorisation as well prior to commencing with any exploration activities. Please ensure you advise your client accordingly to ensure compliance.	This comment is noted.  Well stimulation <u>will not</u> , at any time, be considered as an activity for this project (see Section 6.2.2 of the main report). PASA has indicated that the dewatering of <i>in-situ</i> water (which may be required as part of a future exploration or production phase) does not fall under "well stimulation". Thus a Water Use Licence in terms of this Notice is not required for the proposed exploration activities.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
2.7	N3 National Road	SANRAL, L. Sewarain,	Letter, 2016/09/28	<p>The area under investigation for your application extends over national route N3, which falls under SANRAL's jurisdiction.</p> <p>Should the application be successful SANRAL will not allow any new access roads off its National Road and SANRAL must also be advised which existing accesses will be used to gain entry to the proposed areas.</p> <p>If any activity falls within SANRAL's area of jurisdiction which is defined in the SA National Roads Agency Act as being within 500 m of any intersection with the National Road and 60 m of any national road reserve boundary formal application must be made to this office via normal and couriered mail.</p>	<p>The ER application area will exclude all properties where the granting of an ER is prohibited (Section 48 of the MPRDA), including public roads.</p> <p>Drill sites would be accessed using existing roads and farm tracks, where available. No access would be required off the N3.</p> <p>All boreholes sites are located further than the specified 500 m from any intersection with the National Road and 60 m from any national road reserve boundary. Thus no application is necessary.</p>
2.8	Farm security	Werner Krugel, Eensgevonden Trust IT955/04	Registration and comment form via e-mail, 2016/09/30	<p>The potential impacts mentioned in the application of Afro Energy directly impact me and any other farmers and landowners.</p> <p>Farm safety is already a burning issue, so any activity such as access of foreign persons which creates additional security risk is unacceptable. It also increases the risk of theft.</p>	Landowner security has been identified as a key issue that required further investigation. Refer to Section 6.1.11 of the main report.
	Water resources			<p>Farming and especially livestock farming is totally dependent on clean water sources. The risk of water pollution is unacceptable. Pollution will result in our businesses no longer being economically viable and it will have a direct negative impact on the value of our land.</p>	The potential impact on ground and surface water resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Sections 6.1.2 and 6.1.3 of the main report).

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
2.8 cont.	Rehabilitation	Werner Krugel, Eensgevonden Trust IT955/04	Registration and comment form via e-mail, 2016/09/30	Then there is the reality that when these types of activities take place there is never sufficient rehabilitation.	The issue relating to rehabilitation and liability is addressed in Section 6.1.14 of the main report.  It should also be noted that PASA has previously required landowner approval / sign-off of rehabilitation activities (e.g. Afro Energy's exploration activities in the Amersfoort and Volkrust areas). It is assumed that a similar approval / sign-off would be required for the proposed exploration programme.
2.9	I&AP Registration and comment	Department of Economic, Small Business Development, Tourism and Environmental Affairs, D. Mokoena	E-mail, 2016/09/30	Please be informed that the National Department of Mineral Resources is the Competent Authority for the Mining Projects, therefore the Free State Department of Environmental Affairs will be the commenting authority for the above-mentioned reference developments. Therefore, you should submit reports to this Department of which will be subjected to 30 days commenting period.	This comment is noted. A copy of the draft Scoping Report was submitted to Department of Economic, Small Business Development, Tourism and Environmental Affairs for comment (see Appendix 5.8 for notification letters).
2.10	Water resources and farm security	Johann van Heerden, Uitzoek 223, Wonderwal 1082, Driehoek 1058 & Hipkins Valley 1083	Registration and comment form via e-mail, 2016/10/03	I am not interested in any exploration and drilling on my land. It is not good for the environment and poses danger to water resources and people.	It should be noted that no core drilling is proposed on Mr van Heerden's properties.  The potential impacts on water resources and farm security have been identified as key issues that need to be further investigated in the next phase of the EIA. Refer to Section 6.1.2, 6.1.3 and 6.1.11 of the main report.


NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
2.11	Risks of possible future exploration and production	Frack Free South Africa, Judy Bell	E-mail, 2016/10/06	<p>What a wonderful, but heart-breaking FrackFreeFest we had in Matatiele! Your ... (<i>refer to original comment for remainder of text</i>).</p> <p>Please would you:</p> <ol style="list-style-type: none"> <li>1. Send us the authorisations received from PASA for all the phases of the applications for exploration for oil and gas with which you are working on behalf of all of your clients. We need to see for ourselves.</li> <li>2. Note (and record this in your comments documentation) that dividing up the application for approval into phases without dealing with the whole exploration's impacts is illegal. The National Environmental Management Act's regulations for assessing environmental impacts is very clear – all phases of the project need to be assessed up front! Applying for approval of the first phase with the invasive activities removed for assessing later is thus unacceptable and unethical in my view. It will be challenged.</li> </ol>	<p>Frack Free South Africa is registered as an I&amp;AP on all of SLR's onshore gas projects, and as such is kept informed of the various applications and EIA processes.</p> <p>The interest in and concerns around possible future exploration and production are recognised and acknowledged. This issue is addressed further in Section 6.2.1 of the main report.</p>
2.12	Public meeting attendance	Mpumalanga Provincial Government: Economic Development and Tourism, Muzi Mkhize	E-mail, 2016/10/06	<p>Thank you very much for the informing.</p> <p>We will try to have representation in at least one of the sessions</p>	This comment is noted.



NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
2.13	Water resources and farm security	Dr SR Koller, Aanleg 76	Registration and comment via fax, 2016/10/07	<ol style="list-style-type: none"> <li>1. Impact on the groundwater</li> <li>2. Pollution of the groundwater and nature in general.</li> <li>3. Safety and security of farms.</li> <li>4. I strongly oppose the project.</li> </ol>	<p>The potential impacts on water resources and farm security have been identified as key issues that need to be further investigated in the next phase of the EIA. Refer to Section 6.1.2, 6.1.3 and 6.1.11 of the main report.</p> <p>The strong opposition is noted.</p>
2.14	Landowner identification	Albe Swart, VKB	E-mail, 2016/10/10	Thank you for the said application. I will contact you as soon as possible.	This comment is noted.
2.15	Waste	Frack Free South Africa, Judy Bell	E-mail, 2016/10/11	<p>Please record this comment in your various registers for all the applications with which you are currently working for exploration for oil and gas.</p> <p>According to the legislation, all mining waste is classified as hazardous. I have not seen any mention of how you all intend to handle and safely dispose of this waste from the core drilling in compliance with the National Waste Act and its regulations.</p> <p>Please advise us as to why this has been excluded from the documentation (maybe I have missed it) and how it will be addressed.</p>	Refer to Table 2-2 for a summary of the legal framework and Section 4.6.1.7 for waste management.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
2.16	Water resources	Paul Kruger, Radnor 417	Registration and comment from Cornelia meeting, 2016/10/11	We have wetlands on all three of our farms, namely Radnor 417, Kingston 870 and Middelploas.	No core boreholes are proposed on the farms listed. Refer to Figure 4-6 and 4-7 for the locality of proposed drill sites.
2.17	Water resources	JAD Cilliers, Taaiboschspruit	Registration and comment from Cornelia meeting, 2016/10/11	We have wetlands on our farms (Taaiboschspruit 217 Ptn 1; Donkerpoort 320 Ptn 1; Klysbojo 1135; and Hipkins Hope 1064)	The potential impact on surface water resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Section 6.1.3 of the main report).
2.18	Public participation	Johny & Myra Muller, Uitzicht 313 & Geluk 325	Registration and comment from Cornelia meeting, 2016/10/11	I attended the public meeting in Cornelia on 11 October 2016. Please correspond in Afrikaans with us in future with regards to email correspondence.	The notification letter and Scoping Report executive summary were made available in Afrikaans (see Box 3-3).
	Water consumption			We are concerned about the water that will be used because South Africa is not wealthy in water.	The potential impact on ground and surface water resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Sections 6.1.2 and 6.1.3 of the main report).
2.19	Water resources	PB de Wet, De Wetshoop	Registration and comment from Cornelia meeting, 2016/10/11	How safe is my groundwater?	The potential impact on groundwater resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Section 6.1.2 of the main report).

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
2.20	Groundwater / Risks of possible future exploration and production	Jacobus Lourens, JJ Lourens Trust - London 161 (Portions 0, 1, 2 & 3), Welkom 901 (Portions 0, 2, 4 & 5), Bethany 1230 (Portion 1), Welgeluk 1231 (Portion 1), Betta's Rust 1232	Registration and comment from Cornelia meeting, 2016/10/11	Gas production and extraction is a new process for our country. No one knows what the real potential long term effects of gas extraction on the underground water resources will be.	The potential impact on ground and surface water resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Sections 6.1.2 and 6.1.3 of the main report).  No extraction is proposed as part of the current exploration work programme. The issue relating to risks of possible future exploration and production is addressed in Section 6.2.1 of the main report.
	Farm security	(portion 0), Dundee 1233 (Portion 0) and Bristol 1370 (Portion 0)		I am further concerned about the extra people that will gain access to the area where we are already experiencing pressure regarding safety and crime.	Farm security has been identified as a key issue that need to be further investigated in the next phase of the EIA. Refer to Section 6.1.11 of the main report.  The proposed exploration activities would also have a need for security.
	Overlapping ER areas			The property of the JJ Lourens Trust also falls within the application area of the Rhino Gas project.	In terms of Section 79(2) of the MPRDA, the designated agency (namely PASA) cannot accept an application for an ER if another person holds a TCP, ER or production Right for petroleum over the same area applied for.  The properties (or portions thereof) belonging to JJ Lourens Trust listed as part of this application (see figure overleaf) do not, according to the information we have at hand, overlap with the application from Rhino Oil & Gas.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
					 <p>Properties belonging to JJ Lourens Trust indicated in orange.</p>
2.21	Information request	Enviro Works, Rikus Lamprecht	E-mail, 2016/10/12	As per my telephonic request can you kindly please provide me with a Microsoft Word version of the 320 ER registration form in order to enable digital completion and submission. I would require this by Friday please if possible.	A Word version of the Registration and Comment form was sent to Mr Lamprecht on Wednesday 12 October 2016.
2.22	I&AP Registration and notification of Scoping Report	Enviro Works, Rikus Lamprecht	Registration and comment form via e-mail, 2016/10/12	<p>Enviroworks, an independent environmental consultancy, has been appointed by VKB Agriculture and all its stakeholders and members as well as Free State Agriculture, to comment on the Scoping and Environmental Impact Assessment process for the proposed project on their behalf.</p> <p>I would like to be informed of the availability of the scoping report and commencement of the public participation process in order to provide comments.</p>	<p>This comment is noted.</p> <p>Mr Lamprecht has been registered on the project database (see Appendix 5.2). As a registered I&amp;AP, he was notified of the draft Scoping Report review and comment.</p>

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
2.23	Water resources	PS Kruger, Runnymede and Christoffel's Rust	Registration and comment form via e-mail, 2016/10/17	1. Depend on clean, unpolluted aquifers for abattoir and domestic use. 2. Dependent on underground water and springs for livestock waterholes and chicken (broiler) farming.	The potential impact on ground and surface water resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Sections 6.1.2 and 6.1.3 of the main report).
	Heritage			3. Archaeologically and geologically sensitive area.	The potential impact on heritage resources (including archaeology and palaeontology) related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Section 6.1.5 of the main report).
2.24	I&AP Registration	Jaco Hurter, Blydskap and Kleindeel	Registration and comment form via e-mail, 2016/10/18	Register as an interested.	Mr J. Hurter has been registered on the project database (see Appendix 5.2).
2.25	I&AP Registration	Piet Hurter, Deugsaam en Elim	Registration and comment form via e-mail, 2016/10/18	Register as an interested.	Mr P. Hurter has been registered on the project database (see Appendix 5.2).
2.26.	I&AP Registration and notification of Scoping Report	Ben Travers	E-mail, 2016/10/19	Is there a way to track the progress of the following two proposals or be alerted to changes or acceptance? Afro Energy: Proposed exploration for petroleum on various farms in the Free State and Mpumalanga provinces (12/3/320 ER) Afro Energy: Proposed exploration for petroleum on various farms in the Mpumalanga and Kwazulu-Natal provinces (12/3/321 ER)	Mr Travers has been registered on the database for the current project (12/3/320 ER) (see Appendix 5.2). As a registered I&AP, he will be kept informed during the EIA process, including notification of the draft Scoping Report review and comment.  Please note that Afro Energy has withdrawn the 12/3/321 ER application and the EIA process has been terminated.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
2.27	Interest in project	Ben Travers	E-mail, 2016/10/19	I am a private investor and whilst not based in SA, I have an interest in Afro.	This comment is noted.
2.28	Project information	PB & M van Wyk, Zamenkomst 400 VR	Registration and comment form via e-mail, 2016/10/24	Please send information about the project.	Mr & Mrs van Wyk have been registered on the project database (see Appendix 5.2). As a registered I&AP, they were notified of the draft Scoping Report review and comment.





### 3. COMMENTS RECEIVED DURING THE DRAFT SCOPING REPORT REVIEW AND COMMENT PERIOD

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.1	I&AP database	Transnet Freight Rail, Teboho Modise	E-mail, 2016/10/28	Please note that I am the Environmental Specialist representing Transnet Freight Rail, I will send you the initial comments to be incorporated in the Scoping Report on Monday.	This comment is noted. Mr Modise has been registered on the project database (see Appendix 5.2).  No further correspondence was received from Transnet Freight Rail.
3.2	I&AP database	Department of Water and Sanitation (Free State), Mdhuli Sibó	E-mail, 2016/11/09	Your correspondence is noted. Kindly note that the areas where the proposed project falls is within the Water Management Area of the DWS Gauteng Regional Office. You are urged to consult the DWS Gauteng Office as follows: ... ( <i>refer to original comment for remainder of text</i> ).	The project database has been updated accordingly (see Appendix 5.2). DWS (Free State) has been left on the project database.  It should be noted that a copy of the Scoping Report was sent to Ms Anet Muir (Acting Chief Director: Compliance Monitoring) at the same DWS offices.
3.3	Water and land use	JD van Wyk, Arundel – ext.	E-mail, 2016/11/14	JD and MJ van Wyk objects for the following reasons:	The comments submitted by JD and MJ van Wyk relate to another ER application project (12/3/294 ER) and not to Afro Energy's proposed project (12/3/320 ER). Farm Arundel ext and Farm Brakwal ext are not located within the Exploration Right application area.
3.4	Water and land use	MJ van Wyk, Brakwal – ext.	E-mail, 2016/11/14	<ul style="list-style-type: none"> <li>• Water;</li> <li>• Sensitive equipment;</li> <li>• Cultivated fields that we plant for food for livestock; and</li> <li>• Water for livestock.</li> </ul>	
3.5	Project information	HSV van Wyk, Helderfontein Ptn 10	Comment Sheet, 2016/11/16	Keep us informed regarding the proposed project.	HSV van Wyk has been registered on the project database (see Appendix 5.2). All registered I&APs will be kept informed during the EIA process.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.6	Pipeline infrastructure	Transnet pipelines, Thami Hadebe	E-mail letter, 2016/11/16	Transnet Pipelines, a division of Transnet SOC Limited, is not affected by the proposal as indicated on your Free State/Mpumalanga/KwaZulu-Natal Locality and Project/Site Layout Plan. Your awareness of the existence of Transnet's pipeline servitudes and concern for their integrity is appreciated.	This comment is noted.
3.7	Receipt of scoping report	Department of Mineral Resources (Free State), Tshifhiwa Makhokha	E-mail, 2016/11/17	Please note that scoping report received by this office on the 10th of November 2016 is hereby acknowledged. The comment concerning the document will be sent for your attention after the document has been reviewed.	Comment noted. A further e-mail was received from DMR on 7 Dec 2016 (see Comment 3.12 below).
3.8	Comments on Scoping Report	MJ van Wyk, Brakwal – ext.	E-mail, 2016/11/17	The objection against the exploration of our ground applies to your project as well as the other project. The forms were provided to us by our farmers association.	Although it was pointed out to Mr van Wyk that his comments (see Comments 3.3 and 3.4) relate to another ER application project (12/3/294 ER), he noted that they also apply to the Afro Energy project.  The issues raised in their correspondence are addressed in the Scoping Report. The potential impact on water resources (refer to Sections 6.1.2 and 6.1.3 of the main report) and land-use (refer to Section 6.1.7 of the main report) will be investigated and assessed in the next phase of the EIA.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.9	Heritage Impact Assessment	SAHRA, Nokukhanya Khumalo	E-mail and letter, 2016/11/28	<p>In terms of the National Heritage Resources Act, No. 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that before such sites are disturbed by development it is incumbent on the developer to ensure that a Heritage Impact Assessment is done. This must include the archaeological component (Phase 1) any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required.</p> <p>In your application received by SAHRA, it provides no indication that an assessment of heritage resources including palaeontological resources was conducted. As such SAHRA requires a Heritage Impact Assessment and a Palaeontological Impact Assessment for the proposed development. These specialists' studies can only be conducted by suitably qualified Archaeologist and Palaeontologist for the respective assessments. If you are unaware of any archaeologists and palaeontologists a list of them working within Heritage Resources Management field are provided in the following websites: (see <a href="http://www.asapa.org.za">www.asapa.org.za</a>) and (see <a href="http://www.palaeontologicalsociety.co.za">www.palaeontologicalsociety.co.za</a>).</p>	The potential impact on heritage resources (including archaeology and palaeontology) related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Section 6.1.5 of the main report).

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.9 cont.	Heritage Impact Assessment	SAHRA, Nokukhanya Khumalo	E-mail and letter, 2016/11/28	If the property is heavily disturbed from previous developments then a letter of exemption from further heritage study may be submitted. This letter should be written by either an archaeologist and/or palaeontologist depending on exemption from further studies that is being motivated for, and the letter must be submitted to SAHRA for commenting.	This comment is noted. Refer to response above.
	Information request			A kml. file needs to be uploaded onto the case, within the case edits under the GISLayer/Palaeo_sensitivitymap.	A kmz file of the ER application area has been uploaded onto the SAHRA case file as requested.
	Future comment			SAHRA will comment further on this proposed development once the requested reports are submitted to the case.	This comment is noted. As a registered I&AP, SAHRA will be notified when the Environmental Impact Report (including specialist studies) is available for review and comment.
3.10	Fracking	Ben Travers	E-mail, 2016/11/30	<p>I note the below article makes reference to Afro's applications in relation to fracking:</p> <p><i>"It noted that several transnational and local corporations, including Rhino Oil and Gas, Afro Energy, Sungu Sungu and Motuoane Energy, had launched exploration proposals that could lead to fracking and other unconventional extraction technology."</i></p> <p><a href="http://www.pressreader.com/south-africa/the-mercury/20161129/281547995500166">http://www.pressreader.com/south-africa/the-mercury/20161129/281547995500166</a></p> <p>My understanding is that the proposals outlined by Afro said there would not be any fracking. Can you please confirm?</p>	Mr Travers' understanding is correct. Well stimulation (e.g. hydraulic fracturing) <u>will not</u> , at any time, be considered as an activity for this project (refer to Section 6.2.2 of the main report for further discussion in this regard).

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.11	Topsoil management and rehabilitation	Department of Agriculture, Forestry and Fisheries (Free State), Johan Zeelie	E-mail and letter, 2016/11/30	The topsoil of the footprint area of the drilling sites and related infrastructure must be removed and stored separately for rehabilitation purposes.	An EMPr will be prepared in the next phase of the EIA, which will specify management measures to mitigate the significance of identified impacts. Measures relating to topsoil management and rehabilitation will be considered for inclusion in the EMPr (refer to Section 6.1.4.2 of the main report).
	Impact on high potential agricultural soil			No drilling may take place on high potential agricultural soil.	Potential impacts on soils related to the proposed exploration activities will be confirmed during the specific site assessments undertaken by the specialist consultants during the next phase of the EIA (see Section 6.1.4 of the main report). It should be noted that the final location of an exploration stratigraphic borehole is flexible and can be adjusted to accommodate local environmental sensitivities that may be identified during the specialist onsite investigations.
	Soil and water pollution			Measures must be put in place to prevent soil and water pollution.	Measures relating to soil and water pollution will be considered for inclusion in the EMPr (refer to Section 6.1.4.1 of the main report).
	Soil compaction			Areas where the soil has been compacted it must be scarified to ensure infiltration of water.	Measures relating to topsoil management and rehabilitation will be considered for inclusion in the EMPr (refer to Section 6.1.4.2 of the main report).
	Erosion			The applicant must ensure that proper water run-off control is done so that water erosion does not take place. The necessary structures must therefore also be put in place where erosion may occur.	Measures relating to erosion will be considered for inclusion in the EMPr (refer to Section 6.1.4.1 of the main report).



NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.11 cont.	Water resources	Department of Agriculture, Forestry and Fisheries (Free State), Johan Zeelie	E-mail and letter, 2016/11/30	The natural flow of run-off water may not be obstructed and measures must be put in place to ensure that this water drains freely to the lowest point.	The potential impact on surface water resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Section 6.1.3 of the main report).
	Establishment of alien and invasive species			Soil will be disturbed during construction and this renders to the growth of annual weeds e.g. <i>Datura</i> spp (Thorn Apple/Olieboom), <i>Xanthium spinosum</i> (Spiny cocklebur/Boetebos), <i>Xanthium Strumarium</i> (Large Cocklebur/Kankerroos) and <i>Argemone</i> spp (Mexican poppy/Bloudissel). The applicant must therefore ensure that the declared weeds must be controlled before reproduction takes place. If the applicant needs advice regarding this matter this office can be contacted.  A declared Weed and Invader Plant Control Programme must be developed and implemented on all areas related to this project.	The specific requirements for an alien eradication / monitoring programme will be identified in the next phase of the EIA as part of a specialist ecological assessment (see Section 6.1.1.3 of the main report). These specific requirements will be included in the EMPr.
	Fire management			The applicant must ensure that measures are put in place to prevent veld fires.	Measures relating to fire prevention will be considered for inclusion in the EMPr.
3.12	Acknowledgment of receipt and future comment	Department of Mineral Resources (Free State), Tshifhiwa Makhokha	E-mail, 2016/12/07	Please note that your scoping report submitted on the 10 <sup>th</sup> of November 2016 is hereby acknowledged.  Please note that any correspondence concerning this will be communicated through writing.	This comment is noted. No further correspondence on the Scoping Report was received from DMR.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.13	Information request	Groundwork and Friends of the Earth South Africa, Niven Reddy	E-mail, 2016/12/07	Can I kindly receive the exploration areas for Afro Energy in .KML file?	The kmz file of the 320 ER application area was e-mailed to Mr Reddy on 7 Dec 2016.
3.14	Afro Energy's decision to proceed	Nature Stamp, Susan Carter-Brown	E-mail, 2016/12/07	Please could you advise how Afro Energy's policy to preserve natural resources and protect sensitive ecological areas will influence the 12/3/320 ER application for Free State and Mpumalanga provinces?	<p>The identification of natural resources and sensitive ecological areas is being undertaken through the EIA process. Potential impacts on the biophysical and socio-economic environments will be confirmed during the specific site assessments undertaken by the specialist consultants during the next phase of the EIA. The EIR/EMPr that will be produced as an outcome of the assessment will document the mitigation measures and commitments by Afro Energy to enable the protection of the identified resources. Afro Energy's decision to drill at a particular site will thus be informed by the findings of the EIA process.</p> <p>It should be noted that the final location of an exploration stratigraphic borehole is flexible and can be adjusted to minimise disturbance to landowner needs / activities and local environmental sensitivities. The final location, establishment and management of all exploration sites would be undertaken in consultation with landowners and informed by the EIA process.</p>

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15	Public Participation Process consultant	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	The extent and magnitude of socio-economic impacts associated with the intended project warrants the appointment of a separate specialist entity to adequately manage the public participation processes. The fact that the Environmental Assessment Practitioner (EAP) company conducting the Environmental Impact Assessment (EIA) process is also responsible for managing the public participation processes could most likely result in the inadequate addressing, feedback and resolution of the high volumes of public and I&AP concerns and objections anticipated to be received on the proposed project.	SLR does not agree that the proposed project requires a specialist public participation process (PPP) consultant for the proposed project. SLR is sufficiently experienced and has sufficient resources to undertake the legislated PPP.  It should be noted that an independent facilitator was appointed for the public information-sharing meetings.
	PASA's objectivity			We are firstly constrained to express reservation regarding the competent authority's (PASA) ability to objectively assess and adjudicate the application moreover inasmuch as its mandate it stated to be:  <i>"To promote exploration for onshore and offshore oil and gas resources and the optimal development on behalf of the Government."</i>	Mr Lamprecht's opinion is noted.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Well stimulation / Fracking	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>It is ... decisively confirmed by the applicant and the EAP that no well stimulation for example hydraulic fracturing will be applied for during the entire lifetime of this project from exploration through to desired operational/commercial extraction. No potential amendments to the authorisation at any stage in order to authorise and enable well stimulation may therefore be submitted to the competent authority during the entire lifetime of this project.</p> <p>As discussed under comment number 2, it is decisively confirmed by the applicant and the EAP that no well stimulation for example hydraulic fracturing will be applied for during the entire lifetime of this project from exploration through to desired operational/commercial extraction. No potential amendments to the authorisation at any stage in order to authorise and enable well stimulation may therefore be submitted to the competent authority during the entire lifetime of this project.</p>	As noted in the Scoping Report, Afro Energy has indicated that well stimulation would not be required to release the CBM gas and <u>will not</u> at any time during the project life-cycle (exploration or production) be considered as an activity for this project.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	PPP	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>The EAP indicates that all responses to comments received during the PPP from I&amp;AP's will be included in the Comments and Responses Report and the updated Scoping Report will be sent to PASA for decision making. It has been our experience during various other current EIA processes for Exploration Right applications (12/3/315 ER; 12/3/318 ER &amp; 12/3/294 ER) that comments received from I&amp;AP's are grossly inadequately responded to by the EAP and this inadequate feedback is not returned to the actual I&amp;AP who delivered the comments. Responses (inadequate) are simply included in a final report and directly submitted to PASA for decision making without the I&amp;AP being afforded an opportunity to review the feedback to comments. This defies the logical purpose of a public participation process which should be aimed at identifying public concerns and attempting to adequately respond to and resolve such issues as far as practically possible through two way communication with the I&amp;AP prior to final submissions. Responses to I&amp;AP comments must not simply be performed by the EAP as a routine, low significance "tick box" exercise that forms part of the project scope of work.</p> <p>We therefore object to the EAP's responses to the comments received from I&amp;AP's during the PPP being directly included into the Final Scoping Report and submitted to PASA. Responses on I&amp;AP comments must firstly be sent to the relevant I&amp;AP to review whether their issues have been satisfactorily addressed by the EAP.</p>	<p>The PPP for the proposed project has been undertaken in terms of the requirements of the EIA Regulations 2014.</p> <p>In terms of the EIA Regulations 2014, an Applicant must within 44 days of receipt of an application by the competent authority submit the Scoping Report, which has been subject to a public participation process of at least 30 days. This effectively leaves only 14 days to prepare the Scoping Report and submit it to PASA. Thus, the legislated timeframes do not allow for an additional opportunity for I&amp;APs to review the Scoping Report (including Comments and Responses Report).</p> <p>I&amp;APs were, however, given an opportunity to review responses provided to comments received during the Pre-application PPP in the draft Scoping Report.</p> <p>SLR will make the revised Scoping Report available on the SLR website for information purposes once it has been submitted to PASA.</p>

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	ER application	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p><i>“The proposed exploration activities would allow for the determination of whether or not petroleum and gas resources are located within the ER application area.”</i></p> <p>It is stipulated that the ER application is only for Coal Bed Methane (CBM) gas exploration. The wording of the report extraction above however seems to indicate petroleum as a separate entity from gas to be explored for (although the MPRDA definition of petroleum includes gas). Other potential petroleum resources may not form part of the ER application as only CBM gas is being applied for.</p>	Although Afro Energy is only proposing to explore for natural gas, it can potentially occur with other petroleum products. Thus “Petroleum and Natural Gas” is the wording that Afro Energy included on their ER application that was submitted to PASA.
	Risks of possible future exploration and production			<p>The ultimate objective of the current proposed exploration processes and project is essentially the commercial extraction of CBM gas which will have an impact on water sources and the environment. The impacts of subsequent ground based exploration activities and final impacts of the ultimate project objectives must logically/realistically be taken into account from initiation of the proposed project. This must be done in order to advise on the ultimate viability of the project from the start. The extremely important ‘precautionary principle’ and ‘duty of care principle’ embedded in the framework of the National Environmental Management Act (No 107 of 1998) (NEMA) must be applied to the project. This must be done to acknowledge and address anticipated future risks and impacts associated with subsequent phases and ultimate final objectives of the project. This has however not been done.</p>	The interest in and concerns around possible future exploration and production are recognised and acknowledged. This issue is addressed further in Section 6.2.1 of the main report.



NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
				<p>The logical and environmentally responsible approach would be to investigate and consider the realistic future impacts and risks of the ultimate final project objective activities on the environment and relevant water sources. The applicant would be firmly aware of such potential future issues and impacts of the ultimate objectives of the proposed project. By not considering this and casting a 'blind eye' towards the future project risks and impacts, the environmental ignorance of the applicant and unwillingness to apply environmentally responsible and sustainable development principles will be undeniably exposed. The current approach being followed by the applicant is therefore not in accordance with the principles of environmental sustainability as set out in the National Environmental Management Act (No 107 of 1998).</p> <p>The final ultimate project objective is commercial CBM gas extraction so the potential environmental risks and impacts must therefore be adequately investigated and reported upon right from the start. This must be done in order to objectively determine and inform on the viability of the proposed project with regards to environmental sustainability and the basic principles of NEMA.</p>	

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Exclusion of CBAs from ER application area	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>In accordance with the latest Free State and Mpumalanga Biodiversity Plans, various significant CBA's are present within the proposed project area. These must be excluded from the EA application as has been done with the formally protected area. The value and conservation of CBA's are crucial in the context of achieving minimum environmental conservation biodiversity targets for ecosystem types, species or ecological processes in the province. Therefore although not formally conserved as is the case with protected areas, the importance of CBA's in efficient environmental conservation is on the same if not higher level as protected areas. For this reason we insist that all CBA's falling inside the proposed exploration area also be excluded from the proposed exploration area in the same manner as has been done with the formally protected area. We are opposed to any clearance of vegetation inside or even in close proximity to CBA's for any project exploration purposes.</p> <p>In accordance with the Free State and Mpumalanga Biodiversity Plans various significant CBA's are present within the proposed project area. As discussed under comment number 6 above, these must be excluded from the EA application as has been done with the formally protected area. As per comment number 6 above, we insist that all CBA's falling inside the proposed exploration area also be excluded from the proposed exploration area in the same manner as has been done with the formally protected area.</p>	<p>Section 48(1) of the MRDA outlines "restriction or prohibition of prospecting and mining on certain land" (see Section 4.4.5 of the main report). CBAs are not identified in this section of the MPRDA.</p> <p>The potential impacts on CBA will, however, be confirmed during the specific site assessments undertaken by the specialist consultants during the next phase of the EIA. It should be noted that the final location of an exploration stratigraphic borehole is flexible and can be adjusted to minimise disturbance to landowner needs / activities and local environmental sensitivities. The final location, establishment and management of all exploration sites would be undertaken in consultation with landowners and informed by the EIA process.</p>

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Exclusion of CBAs from ER application area	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>4(r) under this heading discusses the exclusion of sensitive or vulnerable areas. As per comment 6 above, various significant CBA's are present within the proposed project area. These should also be excluded from the EA application as has been done with the formally protected area. The value and conservation of CBA's are crucial in the context of achieving minimum environmental conservation biodiversity targets for ecosystem types, species or ecological processes in the province. Therefore although not formally conserved as is the case with protected areas, the importance of CBA's in efficient environmental conservation is on the same if not higher level as protected areas.</p> <p>As per comment number 6: The CBA's present within the proposed exploration area must be excluded from the EA application as has been done with the formally protected area.</p> <p>The value and conservation of CBA's are crucial in the context of achieving minimum environmental conservation biodiversity targets for ecosystem types, species or ecological processes in the province. Therefore although not formally conserved as is the case with protected areas, the importance of CBA's in efficient environmental conservation is on the same if not higher level as protected areas.</p> <p>For this reason we insist that all CBA's falling inside the proposed exploration area also be excluded from the proposed exploration area in the same manner as has been done with the formally protected area.</p>	As above.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Water Use License application	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	It is indicated in the report that 140 000 litres of water will be extracted from natural watercourses in the area and this constitutes a water use in terms of Section 21 of the National water Act (No 36 of 1998) which requires a Water Use License application (WULA). We are of the opinion that the scope of work of the ER application therefore requires a Water Use License.	The possible need for a Water Use License is acknowledged in the Scoping Report. This will be determined as part of the Ecological and Groundwater Assessments (see Section 8.3.2 and 8.3.2, respectively).
	Heritage approval			The report states that 5 core boreholes are proposed which will each have an impact footprint of 1 000 m <sup>2</sup> . This equates to 5 000 m <sup>2</sup> of impact. We are therefore of the opinion that Heritage permission is required for the proposed ER.	Originally Afro Energy proposed to drill up to five stratigraphic core boreholes within the ER area as part of the early exploration work programme based on the data collected as part of the TCP. However, following discussions with the directly affected landowners only four boreholes are now being proposed. Thus the cumulative area that would be impacted by the proposed drilling operation itself would be in the order of 0.4 ha. Therefore, Afro Energy's proposed activities would not trigger the need for heritage permission.  It should, however, be noted that the potential impact on heritage resources (including archaeology and palaeontology) related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Section 6.1.5 of the main report).

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Need and desirability	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>The needs and desirability of the proposed project is insufficiently and biasedly discussed in favour of gas utilisation as a form of alternative energy generation source. Available coal reserves for which rights are possessed will adequately sustain fossil fuel power generation into the significant future. If the applicant's ultimate goal, as indicated in the report, is to provide a reliable source of clean energy, South Africa possesses more than enough clean renewable energy resources and opportunities such as sunlight and wind which should rather be investigated and considered as replacement options for fossil fuel usage for electricity generation. The environmental impacts associated with such clean renewable energy alternative are significantly less and therefore more favourable when compared to the potential environmental impacts which hydrocarbon extraction and ultimate utilisation for energy generation would have on the environment and valuable agricultural sector in the area.</p> <p><i>The Gaborone Declaration for Sustainability in Africa</i></p> <p>The overall objective of the Declaration is "To ensure that the contributions of natural capital to sustainable economic growth, maintenance and improvement of social capital and human well-being are quantified and integrated into development and business practice."</p> <p>How was the objective of this declaration, of which South Africa is a signatory, addressed during the needs and desirability of the EIA process of the proposed project? No cost benefit</p>	<p>It is acknowledged in the Scoping Report (see Section 4.3.4) "that <i>the promotion of the oil and gas sector could also be considered in contradiction with some of the other plans and policies, which identify the need to reduce the reliance on fossil fuels for electricity generation</i>". It is also acknowledged that <i>"the current limitations of renewable energy technologies are such, that there is still a need to include fossil fuels within the energy mix of the country"</i>.</p> <p>The Gaborone Declaration for Sustainability in Africa recognises that (<a href="http://www.conservation.org/publications/Documents/CI_Gaborone-Declaration.pdf">http://www.conservation.org/publications/Documents/CI_Gaborone-Declaration.pdf</a>):</p> <ul style="list-style-type: none"> <li>• "Current development decisions are driven by fundamental human needs for food, water, energy, and health security as well as employment and economic growth".</li> <li>• "...development needs must be addressed with sufficient concern for each other, for their impact on our peoples' quality of life and our countries' ecological health and productivity, and for the eradication of poverty and inequality".</li> <li>• "Watersheds, forests, fisheries, coral reefs, soils, and all natural resources, ecosystems and biodiversity constitute our vital natural capital and are central to long-term human well-being, and therefore must be protected from overuse and degradation and, where</li> </ul>

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
				<p>analyses/comparisons were included in order to quantify and indicate the socio-economic advantages of proposed hydrocarbon extraction vs the potential disadvantages towards the sustainability of the agricultural sector. This is required in order to inform on the socio-economic viability of the proposed project towards the greater GDP and subsequent and human well-being in the country.</p> <p><i>White Paper on Renewable Energy Policy</i></p> <p>This reaffirms the statement above that clean renewable energy solutions should rather be investigated and pursued instead of promoting hydrocarbon extraction. The need and desirability of this project therefore does not provide sufficient motivation for the execution of this particular project.</p> <p><i>Mpumalanga Growth and Development Path (MGDP) 2011</i></p> <p>This statement also reaffirms clean renewable energy solution requirements and potential landfill gas and organic waste gas but no motivation to the applicability and necessity of hydrocarbon gas is provided.</p>	<p><i>necessary, must be restored and enhanced".</i></p> <p>The potential impacts on natural capital as a result of the proposed exploration activities will be assessed during the next phase of the EIA. The findings of the EIA process should inform the competent authorities' decision.</p>



NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Risks of possible future exploration and production	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>We are strongly opposed to the possible amendment of the environmental authorisation (EA) to include future exploration and production activities at a later stage. We require that a completely new environmental authorisation (EA) application and subsequent Environmental Impact Assessment (EIA) process be conducted if the applicant wishes to conduct any subsequent ground based exploration and production activities.</p> <p>The reason for this requirement is that the severity and extent of impacts associated with the activities which are now initially being applied for to be authorised in the EA will differ significantly from the subsequent proposed activities and far greater impacts associated with the next phase of the ground based exploration and final production. A simple amendment to an existing EA will therefore not justify the significant change in scope and increase in impacts. We therefore require that new separate EA applications and subsequent EIA processes be conducted for any further future activities of the project rather than existing EA amendments.</p>	The interest in and concerns around possible future exploration and production are recognised and acknowledged. This issue is addressed further in Section 6.2.1 of the main report.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Risks of possible future exploration and production	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>4(a)(vii), 4(a)(viii) &amp; 4(i) under this heading again discuss the 'precautionary principle' and anticipated negative environmental impacts of the project. These crucial NEMA principles are however applied in a biased manner with regards to this project in the following manner:</p> <p>When the need and desirability of the project is discussed, the apparent significant future project benefits of the CBM gas extraction and energy generation and assistance towards climate change prevention are highlighted along with all the various other envisaged advantages. However, once the project discussion moves towards the potential environmental impacts and negatives, the report conveniently reverts back to the argument that only the current exploration activities are applicable and only those impacts have been investigated; not the future impacts associated with extraction processes. This approach is inconsequential and (in our opinion) deliberately provides a skewed and biased image of the potential benefits vs risks of the ultimate project objectives which is commercial CBM gas extraction.</p> <p>The final ultimate project objective is commercial CBM gas extraction so if the benefits of this final objective is continually highlighted and discussed in the report, the final potential environmental risks and impacts must also be adequately investigated and reported upon right from the start. This must be done in order to objectively determine and inform on the viability of the proposed project with regards to environmental</p>	See response above.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
				sustainability and the basic principles of NEMA.	
3.15 cont.	Size of ER application area	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	The applicant and EAP must confirm that no possible future amendment/request to increase the size of the proposed exploration area will be submitted or permitted. The proposed exploration area will therefore not be enlarged at any stage.	Should Afro Energy decide in future to expand the ER application area, it would need to obtain the necessary approvals in terms of the MPRDA and NEMA. If other areas are identified for possible exploration, it is more likely that Afro Energy would apply for a separate ER, as has been done in the case of the current ER application, which lies adjacent to their existing ER 38 (refer to Figure 4-2 in the main report).
	Meetings with directly affected landowners			Please provide detailed minutes and feedback on the discussion process conducted with landowners regarding the proposed drilling locations. Also indicate the comments received from the relevant landowners and their opinions regarding potential allowance of drilling on their properties.	In September 2016 Afro Energy commenced with a process of discussing possible borehole locations with directly affected landowners. Meetings were held with various landowners in September, October and November 2016. A further meeting was held with a number of landowners on 29 November 2016 in Vrede. These meetings were conducted by Afro Energy outside of the EIA process.  The purpose of the meeting held on the 29 November 2016 was to engage further with those landowners on whose farms core wells are planned and the neighbouring (neighbouring landowners) in order to clarify outstanding issues. Based on this meeting and further telephonic discussions, one of the five boreholes has been excluded from the proposed exploration programme.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Chemical composition of soapy water	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p><i>“Soapy water is poured over the core to provide visual evidence of gas flow, which cannot be easily detected otherwise.”</i></p> <p>More information is required on the chemical composition of the “soap” to be used in order to make informed decisions regarding the potential environmental risks. The EAP must provide complete and comprehensive Material Safety Data Sheets (MSDS) for the “soap” to be used.</p>	<p>In this case Afro Energy has indicated that a normal household dishwashing liquid (e.g. sunlight soap) would be mixed with water to create the “soapy water”. Based on past core borehole drilling in the Amersfoort area, it is estimated that approximately 20 litres of water to 100ml of dishwashing liquid would be used per core hole.</p> <p>It is not considered necessary to provide the MSDS for the dishwashing liquid. MSDS for potential drilling fluids will, however, be provided in the EIR.</p>
	Access agreement			<p>Proof of landowner consent must be provided during the EIA phase to indicate whether the relevant owners are in agreement with the exploration proses.</p>	<p>As noted in the Scoping Report (Section 4.5.1.3) Afro Energy would only access private property with prior consent of the landowner and in terms of a written access agreement. Afro Energy currently has in-principle landowner agreements with three of the four directly affected landowners.</p> <p>The in-principle landowner agreements are not required by legislation to be included in the EIR. They will, however, be made available to PASA if required.</p>

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Chemical composition of drilling fluids	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	More information is required on the chemical composition of the drilling fluids in order to make informed decisions regarding the potential environmental risks. The EAP must provide complete and comprehensive Material Safety Data Sheets (MSDS) for all the potential drilling fluids to be used.	MSDS for potential drilling fluids will be provided in the EIR.
	Water use			The proposed project area is a water stressed region with regards to surface and groundwater resources. The impacts of the required water use of 140 000 litres for the exploration activities and further envisaged exploration activities as well as the ultimate project objectives of commercial CBM gas extraction on water resources must therefore be investigated from the start. As indicated in comment 5: ...	The potential impact on ground and surface water resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Sections 6.1.2 and 6.1.3 of the main report).  The interest in and concerns around possible future exploration and production are recognised and acknowledged. This issue is addressed further in Section 6.2.1 of the main report.
	Waste Management			No indication of the type and quantities of hazardous waste products to be generated is provided. Please provide a detailed indication of waste products and quantities in order to inform on the potential environmental risks and necessity for a Waste Management License application.	A very small portion of the waste generated on site is likely to be hazardous, e.g. fuel and / or oil spills collected in drip trays. Details in this regard and how they will be managed will be provided in the EIR.
	Rehabilitation			A comprehensive rehabilitation plan must be developed and provided during the EIA phase.	As noted in the Scoping Report (Section 4.5.1.8), rehabilitation would be undertaken, in consultation with the landowner, to re-establish the pre-exploration land use. Appropriate rehabilitation and management measures will be included in the EMPr (that will be prepared during the next phase of the EIA).

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Drilling contractor	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>We are strongly opposed to core borehole drilling being conducted for the following reason related to insufficient information provided in the report:</p> <p>No information is provided on the contractor company intended to perform the drilling operations. A comprehensive profile of the contractor company is required to inform on their suitable qualification, competence and relevant previous experience and success regarding core borehole drilling.</p>	<p>A drilling contractor would only be appointed if an Environmental Authorisation and ER are issued and Afro Energy decides to proceed with drilling. The appointed contractor's details can be provided to PASA if requested.</p> <p>It would be stated in any future contract tender document that a contractor must have the necessary experience to undertake such work.</p>
	Aeromagnetic Survey			<p>The working of the Aeromagnetic Survey process is not adequately explained in order for the reader to understand the process in detail and inform on the potential environmental impacts it could cause. The only description provided under heading 4.5.5 for the process is as follows: "<i>As the aircraft flies, the magnetometer measures and records the total intensity of the magnetic field.</i>"</p> <p>This does not provide any indication of how the magnetometer functions and how exactly it obtains its data. Are signals sent to the surface and "bounced back" to enable the measurements or are signals only received. Significantly more detail on the working of this aeromagnetic survey process is required in order to make an informed decision regarding the potential environmental impacts. During the planning regarding the timing and duration of the aeromagnetic surveys, the presence of game farms in the area needs to be considered. No flying may take place over or in the vicinity of game farms during the hunting or animal</p>	<p>An aeromagnetic survey is a common type of geophysical survey carried out using a magnetometer. The principle is similar to a magnetic survey carried out with a hand-held magnetometer, but allows much larger areas of the Earth's surface to be covered quickly for regional reconnaissance (after Wikipedia). No signals are sent out.</p> <p>Potential impacts related to the proposed aeromagnetic survey (e.g. impact on livestock and game farms), as well as practicable mitigation measures, will be identified in the next phase of the EIA.</p>



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				breeding/mating seasons. Permission must first be obtained from relevant game farm land owners prior to conducting Aeromagnetic surveys in relevant areas.	
3.15 cont.	Financial Provision	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>No specialist quantification has been conducted in this regard.</p> <p>How will the potential liability of risks associated with water source pollution due to core borehole drilling and the flying of the aeroplane for aeromagnetic survey be addressed and covered?</p> <p>What funds and insurance is in place to compensate in the event that water sources are accidentally polluted or the aeroplane crashes and results in the burning down of agricultural farm land or infrastructure?</p> <p>How will the applicant take responsibility in such an event and what funds and resources are available for such emergency events?</p> <p>An emergency plan and specialist quantification needs to be included in the EIA Report to adequately address this concern.</p> <p>NEMA principle chapter 1; 4 (p) with regards to remedial cost provision is not adhered to. The risk aversion approach and responsibility of compensation associated with potential damage which could occur through water pollution or aeroplane accidents is not addressed. We require clarification of responsibilities insurance plans and emergency plans which will be put in place.</p>	As noted in the Scoping Report (Section 4.5.3), the proposed nature and quantum of the financial provision will be presented in the EIR.

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Vegetation	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	The majority of the proposed area falls inside the Frankfort Highveld Grassland vegetation type which is classified as vulnerable while the majority of the remaining portion falls inside the Soweto Highveld Grassland vegetation type which is classified as endangered. The potential future exploration and ultimate production/extraction activities will place significant additional strain on these already stressed vegetation types.	The potential impact on vegetation related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Section 6.1.1.1 of the main report).
	Groundwater use			<p>The proposed project area is a water stressed region with regards to surface and groundwater resources. The impacts of the required water use of 140 000 litres for the exploration activities and further envisaged exploration activities as well as the ultimate project objectives of commercial CBM gas extraction on water resources must therefore be investigated from the start.</p> <p>It is mentioned that there will be potential impacts on the water quality and competition for availability with local farmers and the broader agricultural sector. These risks must be adequately investigated and the impacts on the water quality and availability for local agriculture must be discussed and reported on to enable informed decision making by the competent authority.</p>	<p>The potential impact on ground and surface water resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Sections 6.1.2 and 6.1.3 of the main report).</p> <p>The interest in and concerns around possible future exploration and production are recognised and acknowledged. This issue is addressed further in Section 6.2.1 of the main report.</p>

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Agricultural activities	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>The ultimate objective of the current proposed exploration processes and project is in essence the commercial extraction of CBM gas which will have an impact on water sources and agricultural activities. The impacts of subsequent ground based exploration activities and final impacts of the ultimate project objectives on agriculture in the area must logically/realistically be taken into account from initiation of the proposed project. This must be done in order to advise on the ultimate viability of the project from the start. The 'precautionary principle' and 'duty of care principle' embedded in the framework of the National Environmental Management Act (No 107 of 1998) (NEMA) must be applied to the project. This must be done to acknowledge and address anticipated future risks and impacts associated with subsequent phases and ultimate final objectives of the project.</p> <p>A comprehensive quantitative cost benefit analyses is required to quantify and compare the socio-economic advantages of proposed CBM gas extraction vs the potential disadvantages towards the sustainability of the agricultural sector. This is required in order to inform on the socio-economic viability of the proposed project towards the greater GDP and subsequent and human well-being in the country. This has however not been done.</p>	<p>The potential impact on existing land uses related to the proposed exploration activities will be assessed in the next phase of the EIA (see Section 6.1.7 of the main report). Key mitigation in order to avoid or minimise any impacts on existing land use is to ensure the final location of core drilling sites is undertaken in consultation with directly affected landowners.</p> <p>The interest in and concerns around possible future exploration and production are recognised and acknowledged. This issue is addressed further in Section 6.2.1 of the main report.</p> <p>A comprehensive quantitative cost benefit analyses is not considered necessary for the proposed exploration activities as only a very small area (4 000 m<sup>2</sup>) would be impacted for a short period of time (three to four weeks per site). As noted above, core holes would be sited in consultation with directly affected landowners.</p>

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3.15 cont.	Protected areas and Important Bird Areas	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>The exclusion of only the properties of protected areas within the proposed exploration area will not be sufficient. National Protected Areas Expansion Strategy focus areas and the Important Bird Area (IBA) must also be excluded from the project area. Sufficient buffer zones also need to be implemented around the outer boundaries of the protected areas in order to prevent any potential external edge impacts from occurring. The required sizes of such adequate buffer zones need to be determined by a suitably qualified and experienced ecologist familiar with the specific areas.</p> <p>Due to their significant conservational importance and contribution, the NPAES focus areas and IBA must also be excluded from the proposed exploration area right from the start.</p>	<p>Section 48(1) of the MRDA outlines “restriction or prohibition of prospecting and mining on certain land” (see Section 4.4.5 of the main report). National Protected Areas Expansion Strategy focus areas and IBAs are not identified in this section of the MPRDA.</p> <p>It should be noted that none of the proposed drill sites are located within National Protected Areas Expansion Strategy focus areas or IBAs (see Figures 5-12 and 5-13, respectively).</p>
	Contamination of groundwater resources			<p>No mention is made or discussion of groundwater potentially being contaminated by underground gas deposits being opened and released/escaped. This is a major concern as a potential highly significant environmental impact and source of groundwater pollution and must therefore be adequately investigated and objectively informed on during the EIA phase. Sufficient mitigation measures, emergency plans and financial provisions must be put in place to prevent such undesired contamination.</p> <p>The risk rating and scoring of the environmental impact of groundwater contamination in table 7 under section 7 must be suitably revised in order to include</p>	<p>Section 6.1.2.2 of the Scoping Report has been updated accordingly.</p>

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				and indicate the severity of potential contamination through gas release/escape.	
3.15 cont.	Heritage	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	The report states that 5 core boreholes are proposed which will each have an impact footprint of 1 000 m <sup>2</sup> . This equates to 5 000 m <sup>2</sup> of impact. We are therefore of the opinion that Heritage permission is required for the proposed ER.	Originally Afro Energy proposed to drill up to five stratigraphic core boreholes within the ER area as part of the early exploration work programme based on the data collected as part of the TCP. However, following discussions with the directly affected landowners only four boreholes are now being proposed. Thus the cumulative area that would be impacted by the proposed drilling operation itself would be in the order of 0.4 ha. Therefore, Afro Energy's proposed activities would not trigger the need for heritage permission.  It should, however, be noted that the potential impact on heritage resources (including archaeology and palaeontology) related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Section 6.1.5 of the main report).

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.15 cont.	Need and desirability  Risks of possible future exploration and production	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	<p>The needs and desirability vs environmental risks of the proposed project is insufficiently and biasedly discussed in favour of gas utilisation as a form of alternative energy generation source.</p> <p>When the need and desirability of the project is discussed, the apparent significant future project benefits of the CBM gas extraction and energy generation and assistance towards climate change prevention are highlighted along with all the various other envisaged advantages. However, once the project discussion moves towards the potential environmental impacts and negatives, the report conveniently reverts back to the argument that only the current exploration activities are applicable and only those impacts have been investigated; not the future impacts associated with extraction processes. This approach is inconsequential and (in our opinion) deliberately provides a skewed and biased image of the potential benefits vs risks of the ultimate project objectives which is commercial CBM gas extraction.</p> <p>The final ultimate project objective is commercial CBM gas extraction so if the benefits of this final objective is continually highlighted and discussed in the report, the final potential environmental risks and impacts must also be adequately investigated and reported upon right from the start. This must be done in order to objectively determine and inform on the viability of the proposed project with regards to environmental sustainability and the basic principles of NEMA. This</p>	<p>As noted in the Scoping Report (Section 4.3), the over-arching framework for considering the need and desirability of development in general is taken at the policy level through the identification and promotion of activities / industries / developments required by civil society as a whole. The policy documents consider the entire gas exploration and production process, and not just an initial phase of exploration. The "Need and Desirability" section essentially shows there is a drive from national and provincial Governments to stimulate development and grow the economy of South Africa and in order to facilitate this economic growth, and one of the proposals to ensure sufficient electricity is to develop the oil and gas sector. It is also acknowledged that the promotion of the oil and gas sector could also be considered in contradiction with some of the other plans and policies.</p> <p>The interest in and concerns around possible future exploration and production are recognised and acknowledged. However, at this stage it is not known if there is a viable resource in the ER application area, where it may be located and the nature of the resource. Without information on the scope, extent, duration and location of future activities it is not possible to undertake a reliable assessment of future impacts and any assessment would be mere speculation and of</p>

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				has however not been done.	limited value to I&APs and the decision-maker. This issue is addressed further in Section 6.2.1 of the main report.
3.15 cont.	Impact Assessment	Enviro Works, Rikus Lamprecht	E-mail and letter, 2016/12/09	The risk ratings as per section 7 were not determined and conducted by relevant specialists in the various required fields of expertise. As these ratings will influence the decision making process of the competent authority, they must firstly be verified and confirmed by specialists in the relevant fields of expertise namely ecology, geo-hydrology and heritage. This will ensure credibility of the provided risk ratings for informed decision making by the competent authority.	The Scoping and EIA process is being undertaken in terms of the EIA Regulations 2014. As such, the impact assessment ratings presented in the Scoping Report will be confirmed by specialists in the next phase of the EIA.
	Cumulative impact			Various other significant similar exploration applications are in progress in the adjacent and greater Free State area. The negative environmental impacts associated with ground based exploration activities and subsequent commercial extraction of hydrocarbons will be considerably amplified by the cumulative effects of various similar activities in the wider vicinity.  The potential cumulative effects associated with the ultimate project objectives have not been investigated or discussed at all in the report. Cumulative Impact Assessments form a crucial part of assessing a project's viability and informing the competent authority's decision making process. Cumulative impacts must be adequately investigated and reported	Cumulative impacts will be considered in the next phase of the EIA.  The many separate applications for exploration rights that are currently under consideration, could jointly result in cumulative impacts. Currently the majority of these ER applications remain unapproved.  The majority of the applications that have been made to date are limited to early-phase exploration activities (e.g. aerial surveys, core borehole drilling and seismic surveys). The nature and scale of these activities, in the context of the large and widespread ER application areas, is such that a detectable cumulative impact is considered very unlikely.



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				on right from the start.	<p>Cumulative impacts could become significant in future if these applications all proceed to later exploration or production phases. However, none of the applicants yet know what the future options entail and maintain that they can't know without conducting the early-phase exploration work. Without information on the scope, extent, duration and location of future, later phase activities it is not possible for EAPs to undertake a reliable assessment of future impacts nor of the potential cumulative impacts.</p> <p>The risks and benefits of future activities would need to be well understood in order to inform considered decision making on future applications for authorisation.</p>
3.16	Comment on ER application	Mpumalanga Agriculture, Robert Davel	E-mail, 2016/12/09	<p>Mpumalanga Agriculture hereby give our concerns on application 12/3/320 for prospecting rights in the Free State and a part of Mpumalanga. There are various issues we want to bring to your attention.</p> <p>Our concerns on application 12/3/320 are best defined in the attached comments from Enviro Works on the draft scoping report by Afro Energy.</p>	The letter attached by Mr Davel is the same letter submitted by Enviro Works – See Comment 3.15 (and responses thereto) above.

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3.16 cont.	Afro Energy's decision to proceed	Mpumalanga Agriculture, Robert Davel	E-mail, 2016/12/09	Secondly I want to bring under your attention that the same reasons (explained in the mail from Matthew Hemming on 6/12/2016) for Afro Energy to withdrawn application 12/3/321 are also applied to application 12/3/320.	<p>Potential impacts on the biophysical and socio-economic environments will be confirmed during the specific site assessments undertaken by the specialist consultants during the next phase of the EIA. Afro Energy's decision to drill at a particular site will be informed by the findings of the EIA process.</p> <p>It should be noted that the final location of an exploration stratigraphic borehole is flexible and can be adjusted to minimise disturbance to landowner needs / activities and local environmental sensitivities. The final location, establishment and management of all exploration sites would be undertaken in consultation with landowners and informed by the EIA process.</p>
3.17	Need and desirability	Nature Stamp, Susan Carter-Brown	E-mail and letter, 2016/12/09	<p>The project is fundamentally flawed as regarding Need and Desirability.</p> <p>While natural gas is clean burning at the endpoint, the environmental degradation in extraction and transportation negate its claims as being a 'green / clean fuel'. Further, ...</p> <p>True, but the extraction of unconventional gas will, at the same time as improve electricity supply, undermine South Africa's natural resource base – especially our water resources – which underpin the country's economy.</p>	<p>The potential impacts on natural capital as a result of the proposed exploration activities will be assessed during the next phase of the EIA. The findings of the EIA process should inform the competent authorities' decision.</p>

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.17 cont.	Public protest	Nature Stamp, Susan Carter- Brown	E-mail and letter, 2016/12/09	This is inaccurate and misleading. The sheer volume of public protest for this application should be an indication that natural gas will NOT be well-received by the local market!	Ms Carter-Brown's opinion is noted.
	Need and desirability			<p>If policy were to change to reduce the monopoly of big business energy suppliers and to rather incentivise renewable energy alternatives, renewables could provide a major component of the national power requirement. The current legislation should not be the framework against which need / desirability is measured.</p> <p>Note that the Environmental Assessment Practitioner (EAP) describes the benefits of natural gas which is 1) misplaced as this is an application for exploration rights; and in all other instances in the report, only the impacts of exploration are addressed; and 2) misleading, as only the benefits of natural gas (e.g. fracking) are given; there is no mention of the negative impacts of unconventional extraction. This highlights a lack of independence by the author in purporting in the Needs and Desirability section only positive outcomes of gas extraction – and not indicting the dire environmental and local social impacts.</p>	<p>As noted in the Scoping Report (Section 4.3), the over-arching framework for considering the need and desirability of development in general is taken at the policy level through the identification and promotion of activities / industries / developments required by civil society as a whole. The policy documents considered look at the entire gas exploration and production process, and not just an initial phase of exploration. The "Need and Desirability" section essentially shows there is a drive from national and provincial Governments to stimulate development and grow the economy of South Africa and in order to facilitate this economic growth, and one of the proposals to ensure sufficient electricity is to develop the oil and gas sector. It is also acknowledged that the promotion of the oil and gas sector could also be considered in contradiction with some of the other plans and policies.</p> <p>The interest in and concerns around possible future exploration and production are recognised and acknowledged. However, at this stage it is not known if there is a viable resource in the ER application area, where it may be located and the</p>

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					<p>nature of the resource. Without information on the scope, extent, duration and location of future activities it is not possible to undertake a reliable assessment of future impacts and any assessment would be mere speculation and of limited value to I&amp;APs and the decision-maker.</p> <p>This issue is addressed further in Section 6.2.1 of the main report.</p>
3.17 cont.	Fracking	Nature Stamp, Susan Carter-Brown	E-mail and letter, 2016/12/09	Notwithstanding, this is confirmation that exploration will lead to fracking – and thus all Interested and Affected Parties IAPs) concerns regarding fracking MUST be considered.	Based on Afro Energy's existing ER in the Amersfoort area and its success of extracting commercial rates of gas from unstimulated test wells, well stimulation (e.g. hydraulic fracturing) <u>will not</u> , at any time, be considered as an activity for this project (refer to Section 6.2.2 of the main report for further discussion in this regard).
	Aeromagnetic survey			<p>With regards to the aeromagnetic aerial surveying, it is maintained that an aircraft flying at low altitude is an invasion of privacy and may well be disruptive of livestock. Please advise what mitigation measures you propose in this regard.</p> <p>I propose that every aeroplane conducting the survey have an Observer from FrackFree South Africa in the plane to act as an independent watchdog.</p>	<p>Potential impacts related to the proposed aeromagnetic survey, as well as practicable mitigation measures, will be identified in the next phase of the EIA.</p> <p>Compliance with the Environmental Authorisation and EMP would be undertaken by an EAP or Environmental Control Officer (ECO).</p>

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3.17 cont.	Specialist studies	Nature Stamp, Susan Carter-Brown	E-mail and letter, 2016/12/09	<p>Specialist studies: Due to the heightened public protest and contentious nature of the project, all specialist studies conducted for the on-ground seismic drilling should be subject to external peer review.</p> <p>Further public participation is required in the areas where the proposed drill locations will be and further site details are known.</p> <p>Ecological, groundwater and heritage specialist studies are inadequate to fully address impacts of the proposed exploration activities. The following further studies should be included –</p> <ul style="list-style-type: none"> <li>a. Vegetation</li> <li>b. Watercourse (surface)</li> <li>c. Social</li> </ul> <p>All specialist studies should include comprehensive ground-truthing and on the ground investigations. Desktop assessments alone are wholly inadequate.</p>	<p>The proposed exploration programme does not include “seismic drilling”.</p> <p>The potential impacts on vegetation and surface water resources related to the proposed exploration activities will be investigated and assessed in the Ecological Assessment in the next phase of the EIA (refer to Section 8.3.1 of the main report).</p> <p>Specialist studies would involve both a desktop analysis of the area and specific site visits to identified drill sites. Thus, potential impacts will be confirmed during the specific specialist site assessments of identified drill sites during the next phase of the EIA.</p> <p>Based on the limited extent of the proposed exploration activities (approximately 1 000 m<sup>2</sup> per borehole site) and that Afro Energy has in-principle landowner agreements with three of the four directly affected landowners, a separate specialist social assessment is not considered necessary. Socio-economic impacts will, however, be investigated and assessed in the next phase of the EIA (see Section 6.1 of the main report).</p>

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.17 cont.	Directly affected landowners	Nature Stamp, Susan Carter-Brown	E-mail and letter, 2016/12/09	The landowner details of the drill sites are requested. Landowner Consent forms should be included in the EIR.	The four directly affected farms are specified in the Scoping Report (see Figure 4-7 of the main report). These include: <ul style="list-style-type: none"> <li>• Padlang's 441;</li> <li>• Geschenk 622;</li> <li>• Springboklaagte 387; and</li> <li>• Dundee 1233</li> </ul> <p>Afro Energy has in-principle landowner agreements with three of the four directly affected landowners. The in-principle landowner agreements with directly affected landowners are not required by legislation to be included in the EIR. They will, however, be made available to PASA if required.</p>
	Rezoning			The process in terms of re-zoning agriculture land for industrial use should be explained. It is my understanding that a SPLUMA application (or similar) is required to correctly re-zone land for required purposes.	Given that no permanent infrastructure is proposed and, therefore, no change in land use or the zoning, there is no requirement for approval under this legislation.
	Water Use License application			Water Use Documentation: The EIR should list all water use licensing documentation for each property where the drilling activities would take place. All details in this regard should be provided, including if the activity is under General Authorization.	The possible need for a Water Use License is acknowledged in the Scoping Report. This will be determined as part of the Ecological and Groundwater Assessments (see Section 8.3.2 and 8.3.2, respectively).  The groundwater assessment will include, <i>inter alia</i> , a hydrocensus of boreholes within a 5 km radius of the identified drill site to identify, describe and map the local hydrogeological

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					features and water uses.
3.17 cont.	Maintenance of decommissioning	Nature Stamp, Susan Carter-Brown	E-mail and letter, 2016/12/09	Measures to ensure long term maintenance of decommissioned drill sites should be provided. The responsibility of such should be indicated.	The EMPr, which will be prepared in the next phase of the EIA, will specify management measures to mitigate the significance of identified impacts. Measures relating to decommissioning and rehabilitation will be considered for inclusion in the EMPr (refer to Section 6.1.14 of the main report).
	Exclusion areas			Please advise why exclusion zones (Critical Biodiversity Areas, Protected Areas, water resource buffers etc.) have not been mapped on the application areas. Fracking / extraction should not be allowed in these areas and thus they should not be included in the application for exploration for fracking / extraction.	Section 48(1) of the MPRDA outlines "restriction or prohibition of prospecting and mining on certain land" (see Section 4.4.5 of the main report). Protected areas have been excluded from the ER application area (refer to Figure 1-1 of the main report). CBAs and water resources are not identified in this section of the MPRDA.  As indicated above, well stimulation (e.g. hydraulic fracturing) <u>will not</u> , at any time, be considered as an activity for this project (refer to Section 6.2.2 of the main report).
	Chemical composition of drilling fluids			A list of all drilling fluids and their associated 'hazardous material' classification should be provided.  Material Data Safety Sheets should be provided for all drilling fluids proposed to be utilized.	MSDS for potential drilling fluids will be provided in the EIR.



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3.17 cont.	Monitoring and enforcement	Nature Stamp, Susan Carter-Brown	E-mail and letter, 2016/12/09	Working in the environment sector, I have first-hand knowledge and experience of the well-documented poor monitoring and enforcement of our current legislation for environmental compliance. South Africa does not have the institutional capacity to regulate and monitor technical (and underground!) extraction processes to ensure that gas companies are fully compliant with the rules and regulations governing the industry.	Ms Carter-Brown's opinion is noted. No extraction is proposed as part of the proposed exploration work programme. The interest in and concerns around possible future exploration and production are recognised and acknowledged. This issue is addressed further in Section 6.2.1 of the main report.
	Cumulative impact and Risks of possible future exploration and production			<p>The definition of cumulative impacts, as per GN 982 of the EIA Regulations 2014 is as follows –</p> <p><i>"cumulative impact", in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities;</i></p> <p>The Draft Scoping Report, states the following – "The initial exploration work programme is restricted to an aeromagnetic survey and drilling of up to five stratigraphic core boreholes. No stimulation, pressure testing, hydraulic fracturing or water abstraction is included in the proposed exploration work.... Based on Afro Energy's existing ER in the Amersfoort area and its success of extracting commercial rates of gas from unstimulated test wells, well stimulation (e.g. hydraulic fracturing) will not, at any time, be considered as an</p>	<p>The cumulative impact issue is addressed above – refer to Comment 3.15 (page 44).</p> <p>The interest in and concerns around possible future exploration and production are recognised and acknowledged. This issue is addressed further in Section 6.2.1 of the main report.</p> <p>As noted above, no well stimulation (e.g. fracking) is proposed.</p>

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				activity for this project. This applies to any possible future work, not just what is currently proposed". In the Scoping Report, the 'reasonably foreseeable future impact' of Coal Bed methane extraction (i.e. fracking) as a consequence of exploration has been omitted. This is a major flaw in the EIA and grounds for appeal. All impacts of Coal Bed methane extraction (i.e. fracking) as a consequence of exploration should be investigated in detail in the EIR.	
3.17 cont.	Fracking	Nature Stamp, Susan Carter-Brown	E-mail and letter, 2016/12/09	On these grounds, I object to the proposed application and any future applications for on-ground exploration and fracking.	As noted above, no well stimulation (e.g. fracking) is proposed.
	Alternative energy solutions			I propose that investments into unconventional extraction and nuclear be re-directed into renewable and autonomous energy solutions.  While this will not line the pockets of political powers, it will conserve our natural resources and the livelihoods reliant upon such.	Ms Carter-Brown's opinion is noted.

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3.18	Sungazer lizards	Endangered Wildlife Trust, Bradley Gibbons	E-mail and letter, 2016/12/09	Sungazers ( <i>Smaug giganteus</i> ) have been mentioned as a vulnerable species on page 70 of the Scoping Report, however the majority of Sungazers are found in the Free State. It is noted that reference is only made to the Mpumalanga 2003 Status and the IUCN status and as such, is woefully incomplete. No preference is made to the Free State Status, despite as stated above, the majority of the Sungazer populations resides in the Free State. Furthermore, no reference is made to the national protection afforded to Sungazers, by their inclusion in the 2007 list of critically endangered, endangered, vulnerable and protected species, commonly known as the TOPS list. In addition to the points above specific to Sungazers, we note that the mere listing of species which may be impacted without including any proposed efforts to be taken or which may be taken to protect them or reduce the threats they face, is short-sighted.	<p>The potential impact on the terrestrial fauna related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Sections 6.1.1.1 and 6.1.1.2 of the main report).</p> <p>The specialist ecological assessment will identify and describe any species of special concern (vegetation and fauna) that exist or may exist in the ER application area.</p>
	Water			Water is vital for all threatened species found in the proposed area of exploration. This area is not only important for their needs, but also for water production within the Upper Vaal Catchment. The Klip River is an example of a tributary to the Vaal River Catchment which flows through the proposed area of exploration. Gauteng relies on its source of water from the Vaal Catchment that receives water from the Upper Vaal Catchment. Page xiii of the Scoping Report states: <i>“In addition, inadequate management of surface sumps could result in the contamination of surface water resources. The release of contaminants into water</i>	The potential impact on ground and surface water resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Sections 6.1.2 and 6.1.3 of the main report).

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
				<p><i>resources could result in a deterioration of water quality, limiting use by water users, as well as damaging aquatic ecosystems."</i></p> <p>Being an important catchment vital for the supply of water to Gauteng, the mere noting of a possible threat to it is not sufficient. Therefore, more detail is required as to how the threat can be avoided. Clarity is needed for the term "inadequate management" and what will be necessary to ensure that there is adequate management at sites. It is felt that the statements are too vague in the Scoping Report, which is not appropriate for a catchment of high importance like the Upper Vaal Catchment. The Upper Vaal Catchment is regarded as having a "good" river health by the State-of-Rivers Report: Free State Region River Systems (Department of Water Affairs and Forestry 2003). This report also states that tributaries "play an important role in the water supply for domestic, agriculture and industrial users in the area".</p> <p>Additionally, the threats of contamination caused by drilling the core sites has also not been noted.</p>	

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.18 cont.	Groundwater	Endangered Wildlife Trust, Bradley Gibbons	E-mail and letter, 2016/12/09	<p>Groundwater is essential for sources of water such as springs and wetlands. Therefore, groundwater is crucial for biodiversity and if it is no longer available, it will result in biodiversity loss. Reference is made to groundwater on page xiii as:</p> <p><i>** Altered hydrogeological regime and groundwater availability Core hole drilling would more than likely involve interaction with groundwater, which could have an impact on groundwater availability.</i></p> <p><i>* Contamination of groundwater resources Contamination of groundwater could occur as a result of the use of drilling fluids during core hole drilling, and accidental spillages and leaks"</i></p> <p>The above statement is similar to the points raised in paragraph 2 above, by failing to mention the possibility of leakage of gas into groundwater during the process of a core drilling site. Although this is not an application for extraction, the drilling of core sites for exploration can still have an impact on the groundwater.</p>	<p>The potential impact on ground and surface water resources related to the proposed exploration activities will be investigated and assessed in the next phase of the EIA (refer to Sections 6.1.2 and 6.1.3 of the main report).</p> <p>Section 6.1.2.2 of the Scoping Report has been updated to mention that groundwater (including any contaminants and gas) in different stratigraphic aquifers could theoretically flow via this conduit from one aquifer to another, potentially affecting the quality of water in these aquifers.</p>

NO.	ISSUE	NAME	METHOD OF COMMUNICATION & DATE	COMMENT	RESPONSE
3.18 cont.	Vegetation and species of special concern	Endangered Wildlife Trust, Bradley Gibbons	E-mail and letter, 2016/12/09	<p>Natural, intact grasslands make up over 60% of the application area and further loss of grasslands will mean a loss of biodiversity, increased soil erosion and less area for water production.</p> <p>Although biodiversity is mentioned on page 62: (<i>"The ER application project area is located within the Grassland Biome, which is the largest of South Africa's biomes, and is considered to have an extremely high biodiversity, second only to the Fynbos Biome"</i>), the possible loss of biodiversity is not mentioned.</p> <p>Page 110 for the Ecological Assessment (8.3.1) states that: <i>"Identify any species of special concern (vegetation and fauna) viz. species with conservation status, endemic to the area or threatened species that exist or may exist on site"</i>. However, no mention has been made for mitigation measures that will be in place for species of special concern.</p>	The ecological assessment will, <i>inter alia</i> , assess the potential impact on biodiversity, as well as identify practicable mitigation measures to reduce any potential negative impacts (see Section 8.3.1 of the main report), including impact on species of special concern.
	PPP			<p>Lastly, the EWT wishes to put on record that the public participation process for this Scoping Report was inadequate as it failed to involve all landowners. Several prominent landowners who will be directly affected do not know about this development and while we note that notices have been put up in places in places such as Vrede, notices have not been placed in areas where many affected landowners will see them. This must be addressed as the notices have thus failed to make people aware of the proposed activity.</p>	<p>As noted in Section 3.2 of the main report, a minimum of 94% of landowners have been directly notified of the proposed project. SLR and Afro Energy will continue to identify the remaining landowners (land held in trust) during the EIA process.</p> <p>It should also be noted that all directly affected landowners have been notified and Afro Energy has in-principle landowner agreements with three of the four directly affected landowners.</p>

