

BASIC ASSESSMENT REPORT



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

(For official use only)

File Reference Number:

Application Number:

Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

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14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

PROPOSED WATER SUPPLY SCHEME FOR BOTSWANA, MIDDELPUTS AREA, NORTHERN CAPE

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

The Middelputs area (next to the Botswana Border) is in urgent need of potable water (the area is rural and livestock farming is the main income) and the Botswana Government identified the need for potable water for the Middelputs area as a priority.

It is proposed that a new pipeline be installed from a point in the D-Line of the Kalahari East Water Supply Scheme (extraction point) to deliver the required 7l/s to the Middelputs area.

A 250 mm PVC gravity main will be installed for a distance of approximately 19 km. The gravity main will be fitted with pressure reducing and pressure relief valve combinations to improve the economy of the pipeline (please refer to the Technical Report - **Appendix D1**).

The route will follow the existing pipeline (already registered as servitude) for the first 14 km, and a subordinate road (Road no. 340) for the last 5 km (please refer to Figure 1 and 2 below and **Appendix A: Locality Map**) until it reaches the Botswana border. The proposed pipeline is located on the following farms: Farm 172 & Farm 556, Farm 174/1, Rem. Farm 175, Farm 176/1, Farm 176/2, Rem. Farm 176 and Farm 177 (Middelputs area).

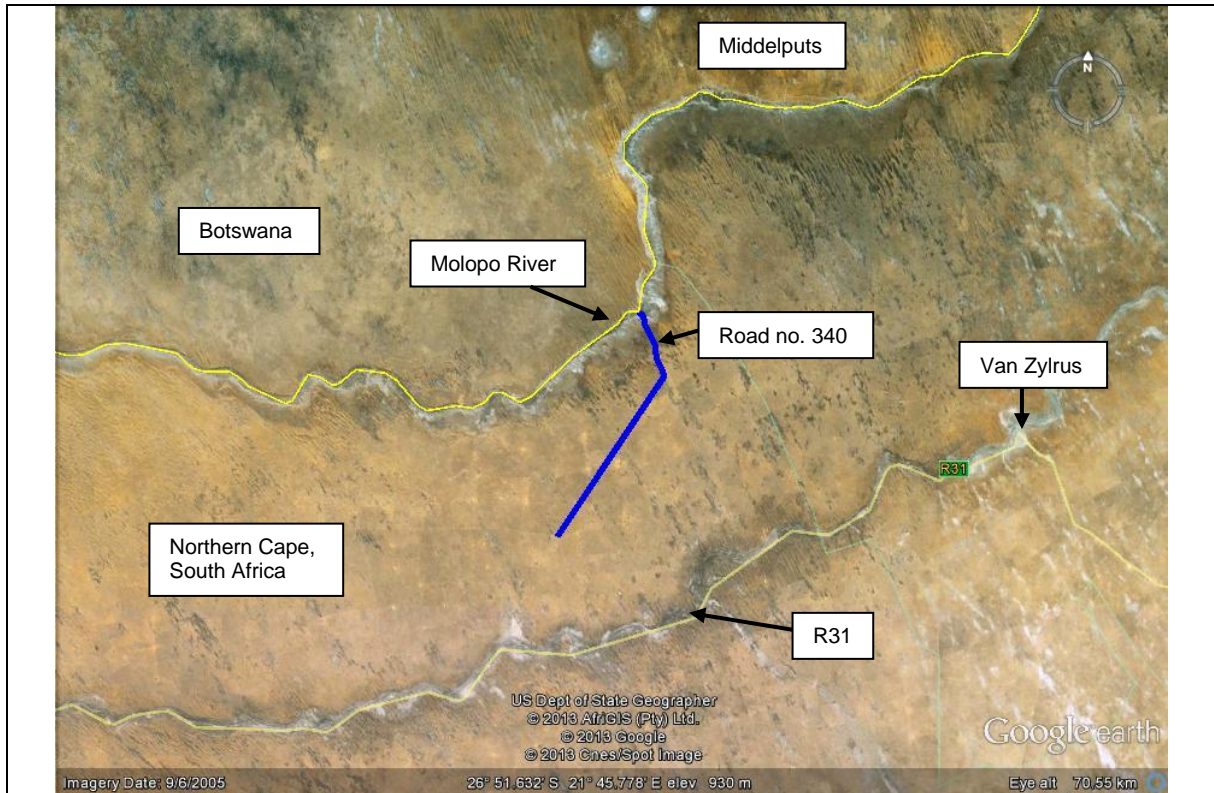


Figure 1: Aerial image of the proposed pipeline route, depicted by the blue line.

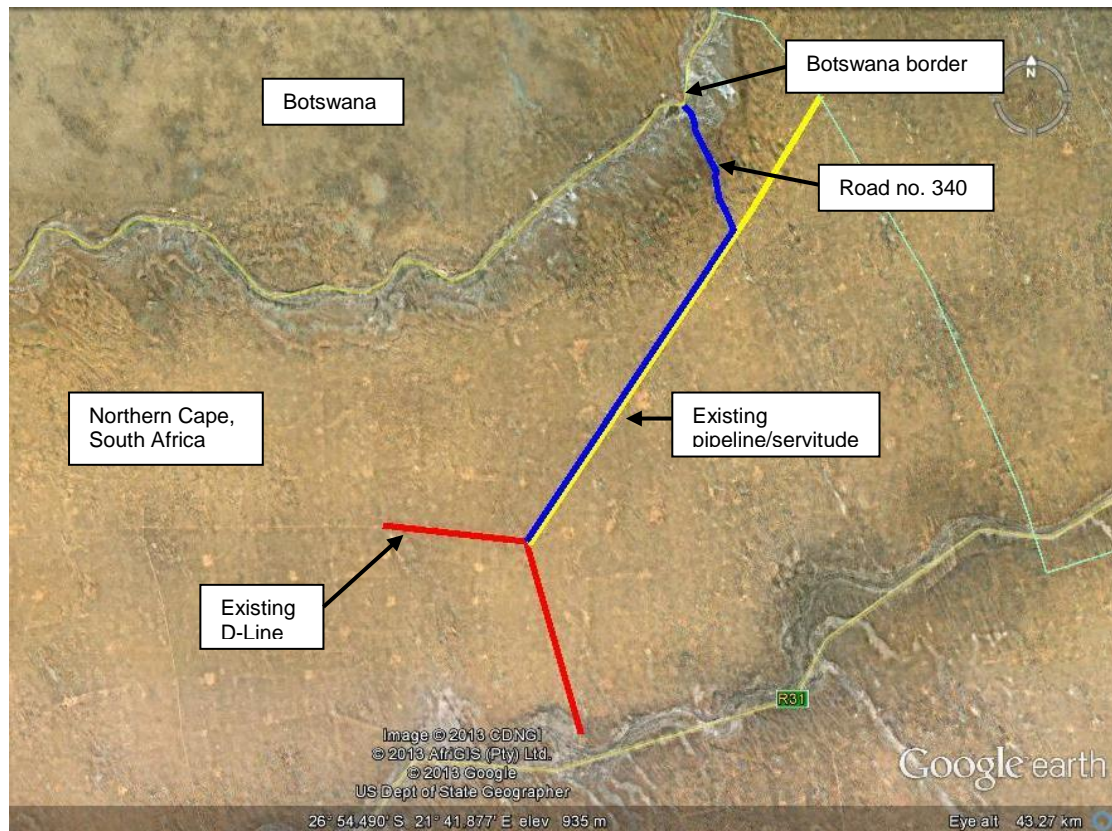


Figure 2. The existing D-Line of the Kalahari East Water Supply Scheme is indicated by the red line, the existing pipeline is depicted by the yellow line, and the proposed pipeline depicted by the blue line.

This pipeline will then continue on the Botswana side to the Middelputs area (see figure 3 below).

Please note that this application is only for the section of pipeline proposed between the D-Line and the Botswana Border.

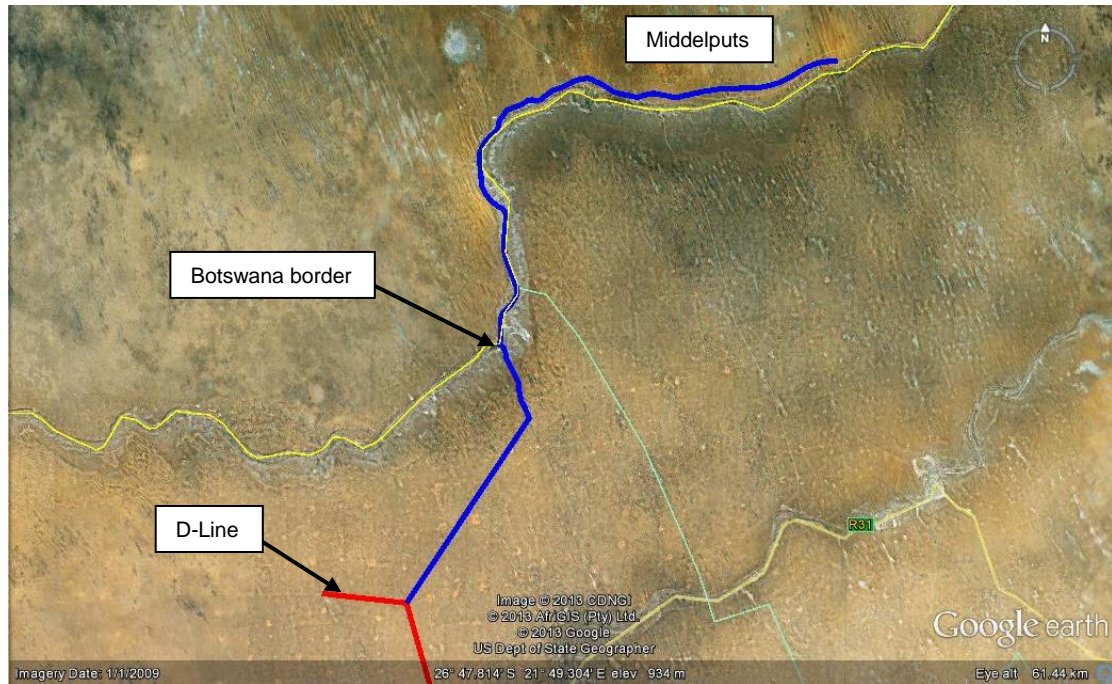


Figure 3. The entire proposed pipeline depicted by the blue line. This application is just for the section of pipeline from the D-Line (red line) to the Botswana border.

From the extraction point at the D-Line, until it reaches the R340, the existing pipeline runs just south of the two-track dirt road (inspection track) and registered servitude. It is proposed that the new pipeline will be located north of the existing pipeline (at a minimum distance of at least 4 m away). This will mean that the inspection track may also have to be moved slightly in some areas. As far as possible, the existing track will be located between the existing pipeline and the new proposed pipeline. This will provide easy access to each pipeline for inspection and maintenance purposes, and will also decrease the construction footprint, minimising the impact.

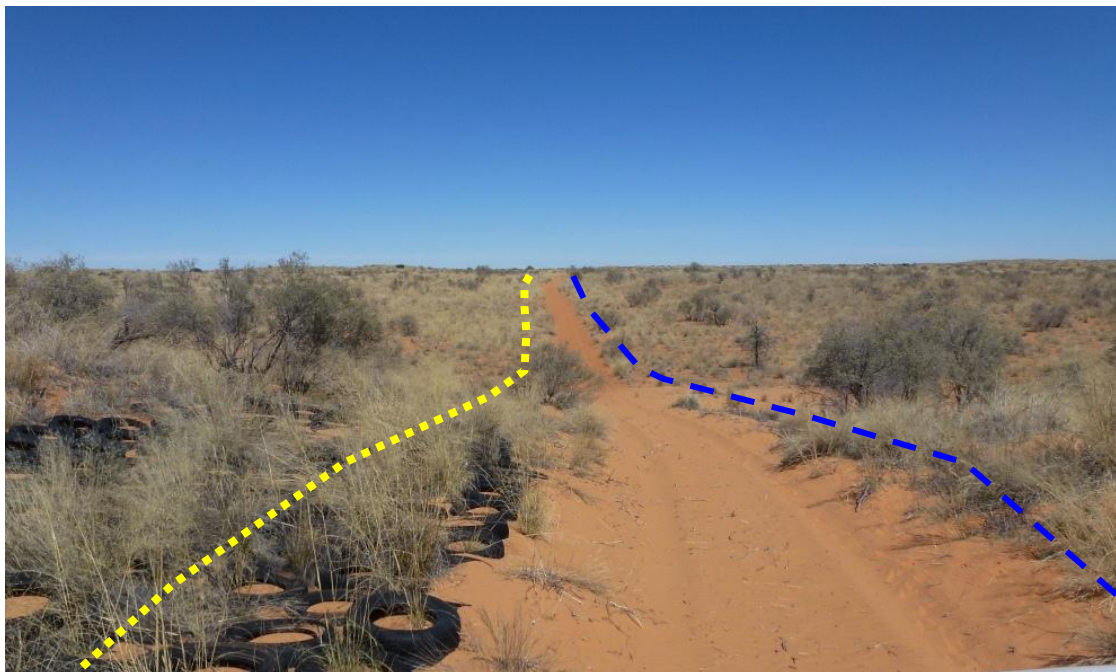


Figure 4: Typical view along the existing inspection track along the existing pipeline (servitude)

looking west. The existing pipeline (yellow dashed line) is generally located on the southern side of the track. The proposed pipeline (blue line) will be located on the northern side of the track. Current dune stabilisation methods are also visible to the bottom left of this image.

Due to the sandy nature of the substrate along the majority of the proposed route, the excavations footprint will have to be wider in order to compensate for the lower stability of the sand. However, this also means that it will not be necessary to source foreign material for pipe-bedding material. However, for approximately 1 000-1 500 m next to the subordinate road (No. 340) a calcrete sub-layer is exposed, for which sandy pipe-bedding material would have to be sourced. In this area the possibility also exists that spoil would remain, which will have to be removed.

The construction camp will be located just east of the R340, where the R340 and the pipeline route from the extraction point intersect. The site was chosen as it is a practical location to access both sections of the pipeline route. It is also easier to access the pipeline route towards the extraction point from the east because of the dune formations.

The location also has an existing water supply point. No environmental constraints were identified for the locating of the camp site at this location.

According to the Biodiversity Assessment (**Appendix D2**), the site location for the construction camp is a relatively flat area (interdune straaten) overgrown with *Acacia mellifera* and although *Acacia erioloba*, *A. haematoxylon* and *Boscia albitrunca* are found in the surrounding area, none has been observed within the proposed construction site location.

The specific location of the site must however, be overseen by the ECO and must not reach onto the dunes in the background (see figure 6 below) since a number of *Acacia erioloba* species were encountered on these dunes.

The *Acacia mellifera* is considered very good dune packing material for dune stabiising purposes and any removed for the establishment of the site camp can be used for dune stabilization along the pipeline route.

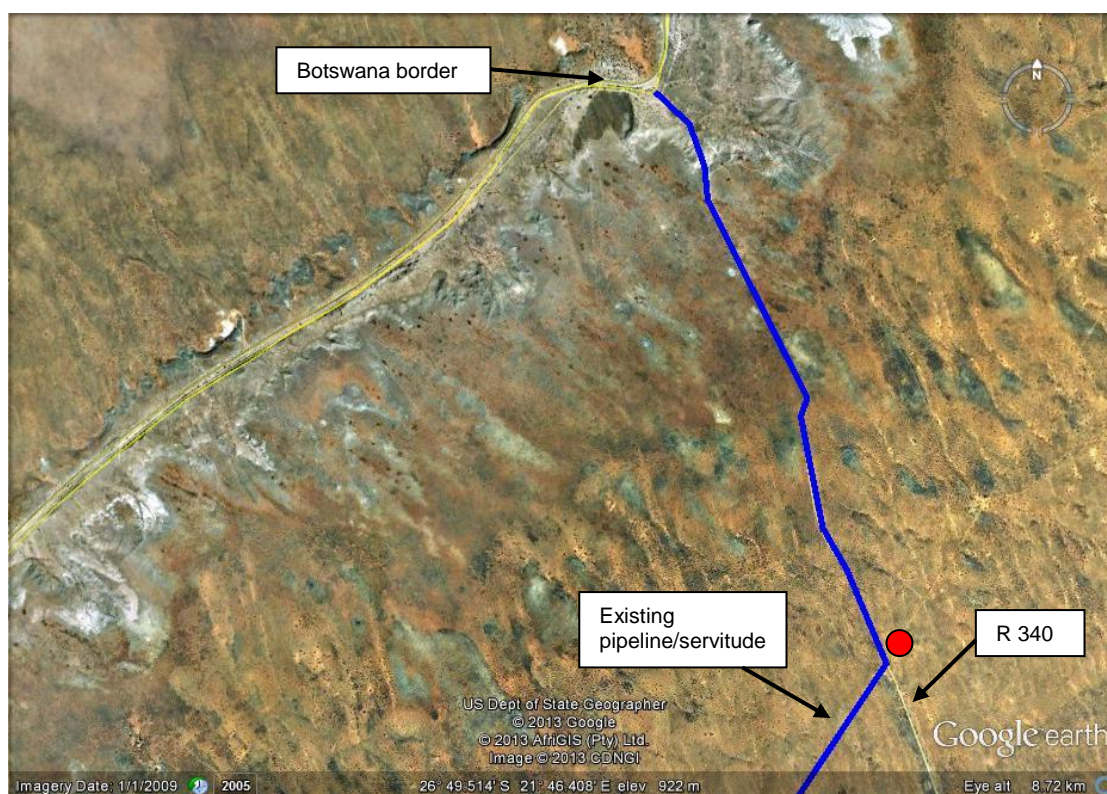


Figure 5: Location of the proposed site camp (indicated by the red dot), at the intersection of the

R304 and the existing pipeline/servitude.



Figure 6: General view of the location of the proposed site camp. Dune area in the background must be avoided.

- b) **Provide a detailed description of the listed activities associated with the project as applied for**

Listed activity as described in GN R.544, 545 and 546	Description of project activity
<p><u>GN R.544 Item 37:</u> The expansion of facilities or infrastructure for the bulk transportation of water, sewage or storm water</p> <p>(a) the facility or infrastructure is expanded by more than 1000 metres in length ;or</p> <p>(b) where the through put capacity of the facility or infrastructure will be increased by 10% or more</p>	<p>The project will entail the expansion of a pipeline for the bulk transportation of water, where it will be expanded by more than 1000m</p>

2. FEASIBLE AND REASONABLE ALTERNATIVES

“alternatives”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and

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- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives N/A

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative:

Alternative S1 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Latitude (S):

Longitude (E):

26° 56' 53.52"	21° 43' 18.82"
26° 52' 37.45"	21° 46' 29.68"
26° 48' 08.01"	21° 46' 50.99"

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26° 52' 37.45"	21° 46' 29.68"
26° 48' 08.01"	21° 46' 50.99"

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For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

b) Lay-out alternatives **N/A**

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives **N/A**

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)
Design alternative <ul style="list-style-type: none">- 250mm diameter pipeline (preferred alternative) <p>A 250mm diameter pipeline is needed to convey 7l/s under gravity to Middelputs. From there a 160mm diameter pipeline is needed to serve the last town as a result of the low available pressure.</p> <p>The 250mm gravity main is the preferred alternative as it will be able to deliver the desired 7l/s to Middelputs as well as to the last town if extended later under gravitation. Thus, no pump-station is needed to boost the flow to the last town. The 250mm gravity main will also be more cost effective from a maintenance perspective, taking into account the additional mechanical maintenance required for a pump station.</p>
Alternative 2
<ul style="list-style-type: none">- 160mm diameter pipeline (design alternative) <p>A 160mm diameter pipeline could convey the required 7l/s to Middelputs. From there a 110mm diameter lined is needed to serve the last town. However, a pump station will be required to boost the flow in this case.</p>

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Alternative 3

e) No-go alternative

The no-go option would be the option of not constructing the pipeline. The current status quo will remain.

According to the Biodiversity Assessment (**Appendix D2**), the “No-Go alternative” does not signify significant biodiversity gain or loss especially on a regional basis. However, it will ensure that none of the potential impacts occur. The current status quo will remain and there will be no impact (even temporarily) on the vegetation, protected species or river corridors.

There will also be no potential impacts on archaeological aspects on the proposed site

However, the positive socio-economic impacts from the proposed pipeline will not be achieved. The Middelputs area in Botswana will still require potable water, and live-stock farming, which is a main income source in that area, could be threatened.

No jobs will be created during the construction or operational phase.

Paragraphs 3 – 13 below should be completed for each alternative.

Please note that the only feasible and reasonable alternative that has been identified and assessed is a design alternative of a different diameter pipeline. The proposed pipeline route is the only route alternative identified as it follows an existing pipe servitude, and then an existing road. Any other route would be installed within non-disturbed indigenous vegetation and sand-dunes, and therefore have a greater negative environmental impact.

There is no activity alternative identified to provide the required water to the Middelputs area.

The Paragraphs 3 - 13 will therefore be the same for each of the design alternatives described below (unless otherwise specified).

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Alternative A1¹ (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the activity:

	m ²
	m ²
	m ²

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Length of the activity:

Approximately 19 000m
Approximately 19 000m

¹ “Alternative A..” refer to activity, process, technology or other alternatives.

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Alternative A3 (if any)

m

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

Size of the site/servitude:

m²

m²

m²

4. SITE ACCESS

Does ready access to the site exist?

YES

If NO, what is the distance over which a new access road will be built

m

Describe the type of access road planned:

N/A. Access to the site will be via the existing Road No. 304 and the existing two-track inspection road along the existing pipe servitude.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	YES		Please explain
This application is for the construction of water pipeline along an existing servitude and road.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES		Please explain
N/A. This application is for the construction of water pipeline along an existing servitude and road.			
(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
N/A. This application is for the construction of water pipeline along an existing servitude and road.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES		Please explain
N/A. This application is for the construction of water pipeline along an existing servitude and road.			
(d) Approved Structure Plan of the Municipality	YES		Please explain
N/A. This application is for the construction of water pipeline along an existing servitude and road.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO	Please explain
Although a draft version of the Siyanda District Municipal, Environmental Management Framework (EMF) is available it has not been approved or published.			
(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES		Please explain
N/A. This application is for the construction of water pipeline along an existing servitude and road.			

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4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES		Please explain
<p>The Middelputs area is located adjacent to the Botswana Border. The area is rural and live- stock farming is the main income source. The Botswana Government identified the need for potable water for the Middelputs area as a priority. The proposed pipeline will deliver the required 7l/s to the Middelputs area. The activity will not only provide potable water to areas in need of water, but will also provide temporary employment for up to 30 people during the construction phase.</p>			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES		Please explain
<p>N/A. This application is for the construction of water pipeline along an existing servitude and road.</p>			
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
<p>N/A. This application is for the construction of water pipeline along an existing servitude and road.</p>			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES	NO	Please explain
<p>N/A. This application is for the construction of water pipeline along an existing servitude and road.</p>			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES		Please explain
<p>The site is along an existing pipeline servitude and then along an existing road (R340)</p>			
9. Is the development the best practicable environmental option for this land/site?		NO	Please explain
<p>The no-go option would mean that there are no potential impacts on biodiversity (natural vegetation) and/or archaeological aspects on the proposed site.</p> <p>However, the positive socio-economic impacts from the proposed pipeline will not be achieved. The Middelputs area in Botswana will still require potable water, and live-stock farming, which is a main income source in that area, could be threatened.</p> <p>No jobs will be created during the construction or operational phase.</p>			

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10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	<input checked="" type="checkbox"/>	Please explain
<p>The no-go option would mean that there is no potential impacts on biodiversity (natural vegetation) and/or archaeological aspects on the proposed site.</p> <p>However, the positive socio-economic impacts from the proposed pipeline will not be achieved. The Middelputs area in Botswana will still require potable water, and live-stock farming, which is a main income source in that area, could be threatened.</p> <p>No jobs will be created during the construction or operational phase.</p>			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?		NO	Please explain
It is unlikely that this will set a precedent, at this stage			
12. Will any person's rights be negatively affected by the proposed activity/ies?		NO	Please explain
No person's rights are expected to be negatively affected by the proposed development. The activity is expected to have a positive impact on the residents of the Middelputs area.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		NO	Please explain
The site is not located within an urban area			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO	Please explain
<p>The project may contribute to SIP 11 – Agri-logistics and rural infrastructure (<i>Improve investment in agricultural and rural infrastructure that supports expansion of production and employment, small-scale farming and rural development, including facilities for storage (silos, fresh-produce facilities, packing houses); transport links to main networks (rural roads, branch train-line, ports), fencing of farms, irrigation schemes to poor areas, improved R&D on rural issues (including expansion of agricultural college colleges), processing facilities (abattoirs, dairy infrastructure), aquaculture incubation schemes and rural tourism infrastructure.</i>). However, the direct benefactors of the proposed pipeline will be the community of Middelputs, Botswana</p>			
15. What will the benefits be to society in general and to the local communities?	Please explain		
<p>No local communities are located in close proximity to the proposed site, however, potential employment opportunities will be provided to the nearest communities. The proposed activity will also benefit the community in the Middelputs area of Botswana who rely on stock-farming as an income, and require potable water to meet their needs.</p> <p>The activity will not only provide potable water to areas in need of water, but will also provide temporary employment for approximately 30 people during the construction phase (93% previously disadvantaged).</p>			
16. Any other need and desirability considerations related to the proposed activity?	Please explain		

17. How does the project fit into the National Development Plan for 2030?	Please explain
<p>According to the National Development Plan (2030), <i>“Strong African growth also provides opportunities for South African firms and industries, which have contributed to development by investing in telecommunications, banking, mining, construction and retail. Closer partnership between countries, firms and people would deepen economic and social integration, contributing to higher rates of growth and development”</i>. The proposed project could therefore strengthen the partnership between South Africa and Botswana</p>	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
<p>The general objectives of Integrated Environmental Management have been taken into account through the following:</p> <ul style="list-style-type: none"> - The actual and potential impacts of the activity on the environment, socio-economic conditions and cultural heritage have been identified, predicted and evaluated, as well as the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impact, maximizing benefits and promoting compliance with the principles of environmental management. - The effects of the activity on the environment have been considered before actions taken in connection with them. - Adequate and appropriate opportunity for public participation was ensured through the public participation process. - The environmental attributes have been considered in the management and decision-making of the activity 	
19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.	
<p>The principles of environmental management as set out in section 2 of NEMA have been taken into account. The principles pertinent to this activity include:</p> <ul style="list-style-type: none"> - People and their needs have been placed at the forefront while serving their physical, psychological, developmental, cultural and social interests. - Development must be socially, environmentally and economically sustainable. Where disturbance of ecosystems, loss of biodiversity, pollution and degradation, and landscapes and sites that constitute the nation’s cultural heritage cannot be avoided, are minimised and remedied. Although the activity has little to no impact on these, they have been considered, and mitigation measures have been put in place. This is dealt with in the EMP (Appendix G) - Where waste cannot be avoided, it is minimised and remedied through the implementation and adherence of EMP. - The use of non-renewable natural resources is responsible and equitable. - The negative impacts on the environment and on people’s environmental rights have been anticipated and prevented, and where they cannot be prevented, are minimised and remedied. - The interests, needs and values of all interested and affected parties have been taken into account in any decisions through the Public Participation Process. - The social, economic and environmental impacts of the activity have been considered, assessed and evaluated, including the disadvantages and benefits. - The effects of decisions on all aspects of the environment and all people in the environment have been taken into account, by pursuing what is considered the best practicable environmental option. 	

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
The National Heritage Resources Act, 1999 (Act 25 of 1999)		SAHRA – Northern Cape	
The National Water Act, 1998 (Act 36 of 1998)		Department of Water Affairs	

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

If YES, what estimated quantity will be produced per month?

	NO
	Unknown at this stage

How will the construction solid waste be disposed of (describe)?

Excavated sand will be used as bedding and fill material in the trenches.

Some excess spoil material is expected along a section of the R340 through the calcrete layers. Any excess spoil will be removed from along the pipeline route (from the side of the road) and be disposed of in an area identified in consultation with the ECO, and in agreement with the landowner.

Where will the construction solid waste be disposed of (describe)?

General household waste will be consolidated on site and removed as often as required to the nearest registered landfill site. Any excess rock material will also be removed from site.

Will the activity produce solid waste during its operational phase?

If YES, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

	NO
	m ³

N/A

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

N/A

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

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Can any part of the solid waste be classified as hazardous in terms of the NEM:WA? ☐ YES ☒ NO

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility? ☐ YES ☒ NO

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

☒ YES ☐ NO

If YES, what estimated quantity will be produced per month?

m³

Will the activity produce any effluent that will be treated and/or disposed of on site?

☒ YES ☐ NO

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

☐ YES ☒ NO

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

N/A

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

☐ YES ☒ NO

If YES, is it controlled by any legislation of any sphere of government?

☐ YES ☒ NO

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

N/A

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

☐ YES ☒ NO

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If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?

If YES, is it controlled by any legislation of any sphere of government?

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the noise in terms of type and level:

N/A

	NO
YES	NO

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water
-----------	-------------	-------------	----------------------------	-------	---------------------------------

The source of water will be an extraction point on the existing D-Line of the Kalahari East Water Supply Scheme.

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

This is to be determined on consultation with the Department of Water Affairs

	litres
YES	

14. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

N/A

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

- Paragraphs 1 - 6 below must be completed for each alternative. **The Paragraphs 1 - 6 will be the same for each of the alternatives described below (unless otherwise specified) as the alternative considered is a smaller diameter pipeline along the same proposed route.**

- Has a specialist been consulted to assist with the completion of this section?

YES

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	Northern Cape
District Municipality	Siyanda District Municipality,
Local Municipality	Khara Hais Local Municipality
Ward Number(s)	12
Farm name and number	Farm 172 & Farm 556, Farm 174/1, Rem. Farm 175, Farm 176/1, 176/1, Rem. Farm 176 and Farm 177 (Middelputs area) .
Portion number	
SG Code	See below

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

Agriculture

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

NO

SG Codes:

C	0	2	8	0	0	0	0	0	0	0	0	0	1	7	2	0	0	0	0	0
C	0	2	8	0	0	0	0	0	0	0	0	0	1	7	4	0	0	0	0	1
C	0	2	8	0	0	0	0	0	0	0	0	0	1	7	5	0	0	0	0	0
C	0	2	8	0	0	0	0	0	0	0	0	0	1	7	6	0	0	0	0	0
C	0	2	8	0	0	0	0	0	0	0	0	0	1	7	6	0	0	0	0	1
C	0	2	8	0	0	0	0	0	0	0	0	0	1	7	6	0	0	0	0	2
C	0	2	8	0	0	0	0	0	0	0	0	0	1	7	7	0	0	0	0	0
C	0	2	8	0	0	0	0	0	0	0	0	0	5	5	6	0	0	0	0	0

BASIC ASSESSMENT REPORT

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input checked="" type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):
Shallow water table (less than 1.5m deep) – Molopo River	YES	YES NO	YES NO
Dolomite, sinkhole or doline areas	NO	YES NO	YES NO
Seasonally wet soils (often close to water bodies)	NO	YES NO	YES NO
Unstable rocky slopes or steep slopes with loose soil	NO	YES NO	YES NO
Dispersive soils (soils that dissolve in water)	NO	YES NO	YES NO
Soils with high clay content (clay fraction more than 40%)	NO	YES NO	YES NO
Any other unstable soil or geological feature	NO	YES NO	YES NO
An area sensitive to erosion	NO	YES NO	YES NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

BASIC ASSESSMENT REPORT

4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld in good condition^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation^E	Veld dominated by alien species^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		NO	UNSURE
Non-Perennial River	YES		UNSURE
Permanent Wetland		NO	UNSURE
Seasonal Wetland		NO	UNSURE
Artificial Wetland		NO	UNSURE
Estuarine / Lagoonal wetland		NO	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Except for the Molopo River (where the proposed pipeline stops), which will have to be crossed to make the connection to Botswana, the proposed pipeline does not cross any natural watercourses or drainage lines along the route.

The Molopo River is intermittent/non-perennial and is usually dry.

Where the proposed pipeline will cross any natural watercourses (Molopo River), it will be buried at least 1,5m below the riverbed.



Figure 7: The dry Molopo River bed taken from the South African side. This is the end of the proposed pipeline route. The Botswana side can be seen in this image.

As referred to in the Biodiversity Assessment (**Appendix D2**), according to the SANBI Biodiversity Geographical Information System, the geology and soils for this area is described as aeolian sand underlain by superficial silcretes and calcretes of the Cenozoic Kalahari Group. This is characterized by mostly fixed parallel sand dunes with Af land type almost exclusively.



Figure 8: Typical landscape along the majority of the pipeline route, with the undulating sand dunes clearly seen in this image. Photograph was taken along the existing pipeline servitude and the proposed pipeline route looking west.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station ^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant ^A	Nature conservation area
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge
Heavy industrial ^{AN}	Railway line ^N	Museum
Power station	Major road (4 lanes or more) ^N	Historical building
Office/consulting room	Airport ^N	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam ^A	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe) Game farming, grazing, existing underground pipeline

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If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity?

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		NO
Core area of a protected area?		NO
Buffer area of a protected area?		NO
Planned expansion area of an existing protected area?		NO
Existing offset area associated with a previous Environmental Authorisation?		NO
Buffer area of the SKA?		NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

YES

Uncertain

According to Archaeological Scoping Assessment (**Appendix D3**) of the proposed activity, a walk through survey of the proposed pipeline route is not required as most of the route is aligned alongside an existing pipeline servitude, or minor service road.

Unmarked burials, as well as buried caches of ostrich eggshell water containers may, however, be uncovered during excavations for the proposed pipeline, and pit latrines, of which this is a distinct possibility.

Should any such remains be uncovered, or exposed during excavations, these must immediately be reported to Dr David Morris at the McGregor Museum in Kimberly (082 222 4777 or 053 839 2706), and the area sealed off. Burials or ostrich eggshell caches must not be removed until inspected by the archaeologist.

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

BASIC ASSESSMENT REPORT

Will any building or structure older than 60 years be affected in any way?

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

	NO
YES	

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

Unknown. The area is primarily non-intensive agriculture (live-stick grazing and/or game farming).

Economic profile of local municipality:

The 2002 socio-economic survey shows that the average gross monthly income per family in the //Khara Hais area is approximately R4 000-00 per month. The average gross income per capita is just under R1000-00 per month and in excess of 66% of the area's population have a per capita income of less than R800-00 per month.

Level of education:

The largest portion of the population (26%) in the //Khara Hais area has an educational level of Grades 8 to 10. Only 19% of the population finish high school with a Grade 11 or 12 level of education and less than 3% of the population have tertiary education qualifications.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

What is the expected yearly income that will be generated by or as a result of the activity?

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

How many new employment opportunities will be created in the development and construction phase of the activity/ies?

What is the expected value of the employment opportunities during the development and construction phase?

What percentage of this will accrue to previously disadvantaged individuals?

Approximately Million	R13
N/A	
YES	
YES	
± 30	
± R 457 875.00	
± 93%	

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How many permanent new employment opportunities will be created during the operational phase of the activity?

The project will create permanent employment opportunity for ±2 persons for operation and maintenance purposes.

What is the expected current value of the employment opportunities during the first 10 years?

N/A

What percentage of this will accrue to previously disadvantaged individuals?

N/A

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

- a) **Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	No fine-scale mapping is as yet available for this area and as a result no critical biodiversity areas or biodiversity support areas has been promulgated for this area.

- b) **Indicate and describe the habitat condition on site**

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	%	
Near Natural (includes areas with low to moderate level	20%	According to the Biodiversity Assessment (Appendix D2), in accordance with the 2006 Vegetation map of South Africa, Lesotho and Swaziland, two broad vegetation

BASIC ASSESSMENT REPORT

of alien invasive plants)		<p>types is expected in the proposed area and its immediate vicinity, namely <i>Gordonia Duneveld</i> and <i>Southern Kalahari Mekgacha</i> on the bottom of the dry riverbeds.</p> <p>The 2004 National Spatial Biodiversity Assessment (NSBA) classifies both <i>Gordonia Duneveld</i> and <i>Southern Kalahari Mekgacha</i> as “<u>Least Threatened</u>”.</p> <p>According to the Biodiversity Assessment (Appendix D2), the overall vegetation encountered conforms to that of <i>Gordonia Duneveld</i> inland from the Molopo River (with a large patch of calcrete outcrops encountered just south of the Molopo River valley next to the R340) with <i>Southern Kalahari Mekgacha</i> within the Molopo River valley.</p> <p>Alien woody <i>Prosopis</i> species occur as invasive plants in places.</p> <p>Please refer to the Biodiversity Assessment (Appendix D2) for a more detailed description of the vegetation along the proposed pipeline route.</p>
Degraded (includes areas heavily invaded by alien plants)	%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	80%	The majority of the proposed route will be within a registered servitude of an existing pipeline, and along an existing road (R340)

c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems			
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)		Estuary	Coastline
	Endangered				
	Vulnerable				
	Least Threatened	YES		NO	NO

- d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

According to the Biodiversity Assessment (**Appendix D2**), in accordance with the 2006 Vegetation map of South Africa, Lesotho and Swaziland, two broad vegetation types is expected in the proposed area and its immediate vicinity, namely *Gordonia Duneveld* and *Southern Kalahari Mekgacha* on the bottom of the dry riverbeds.

The 2004 National Spatial Biodiversity Assessment (NSBA) classifies both *Gordonia Duneveld* and *Southern Kalahari Mekgacha* as “Least Threatened”.

According to the Biodiversity Assessment (**Appendix D2**), the overall vegetation encountered conforms to that of *Gordonia Duneveld* inland from the Molopo River (with a large patch of calcrete outcrops encountered just south of the Molopo River valley next to the R340) with *Southern Kalahari Mekgacha* within the Molopo River valley.

Alien woody *Prosopis* species occur as invasive plants in places.

According to the Biodiversity Assessment (**Appendix D2**) no threatened or endangered species were recorded during the site visit. However, it must be noted that the vegetation type is considered “Least Threatened” and that this classification is based on plant species diversity and turnover as well as habitat transformation. The number of species per broad geographical levels for the savannah biome is relative low. It is therefore very unlikely that any red data species will be confined to the proposed site alone.

According to the Biodiversity Assessment (**Appendix D2**), three protected tree species in terms of the National Forests Act of 1998 (Act 84 of 1998) have been observed and are likely to be impacted during the construction namely: *Acacia erioloba* (Camel thorn) *Boscia albitrunca* (Sheppard’s tree) and *Acacia haematoxylon* (Grey Camelthorn).

Please refer to the Biodiversity Assessment (**Appendix D2**) for a more detailed description of the vegetation along the proposed pipeline route.

Except for the Molopo River (where the proposed pipeline stops), which will have to be crossed to make the connection to Botswana, the proposed pipeline does not cross any natural watercourses or drainage lines along the route.

The Molopo River is intermittent/non-perennial and is usually dry.

Where the proposed pipeline will cross any natural watercourses (Molopo River), it will be buried at least 1,5m below the riverbed.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Die Volksblad	
Date published	08 November 2012 (please refer to Appendix E1)	
Site notice position	Latitude	Longitude
	26° 48' 08.01"	21° 46' 50.99"
	26° 49' 33.28"	21° 47' 34.07"
	26° 50' 37.23"	21° 47' 58.37"
	26° 48' 08.01"	21° 46' 50.99"
Date placed	07 November 2012	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

- Identifying Interested and Affected Parties (I&AP's), including occupiers of the property, owners and occupiers of land adjacent to the site, the municipal councillor, local ratepayers association, municipal officials and relevant State Departments as part of the Public Participation Process (refer to **Appendix E5** for a list of Interested and Affected Parties);
- Notification of I&AP's by (refer to **Appendix E2** for notification letters, adverts, site notices and proof thereof):
 - Fixing 5 x notice boards along the pipeline route, and entrances to the pipeline route
 - Advertising the project in a local newspaper (Die Volksblad on 08 November 2012);
 - Written notification to I&AP's (including letter drops to landowners), and necessary State Departments;
- Allowing a 21day registration/initial comment period.
- A copy of the Draft Basic Assessment Report (this report) will be made available to all registered I&APs, including relevant State Departments,
- Allowing a 40 day commenting period, during which I&AP's can send comments to EnviroAfrica CC.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Geoflux (Pty) Ltd	Elmah Nthebolan	P.O. Box 854, Gaborone Tel : 3975105/72145439 Fax: 3900242 Email: enthebolan@geoflux.biz
Landowners/ Adjacent landowners – please refer to Appendix E5		

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Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
Only comment from a one of the landowners was received during the initial public participation period, requesting more information on the exact location of the pipeline and the manner in which the construction will take place. The landowner will be provided with an opportunity to view and comment on the draft Basic Assessment Report (this report) which will provide a response to the comments received (Appendix E3).	Your comments have been noted, and will be addressed in the draft Basic Assessment Report, and you will be notified of its availability for viewing and comment

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
SAHRA Northern Cape	Katie Smuts	+27 (0)21 462 4502	+27 (0)21 462 4509	ksmuts@sahra.org.za	P.O. Box 4637, Cape Town 8000,
Directorate Forestry Management	J Mans	054 338 5909	054 334 0030	jacolineMa@daff.gov.za	P.O. Box 2782, Upington 8800,
Department of Water Affairs – Northern Cape	Mr L.J Saunders	(053) 831 4534	(053)831 5438	snydersl@dwaf.gov.za	Private Bag X6101 Kimberley, 8300
Department of Environment and Nature Conservation	Mr. J.J Mutyora	053 807 7416	053 832 1026		Private Bag X6102, Kimberley, 8301
Department of Environment and Nature Conservation	Ms Anga Yaphi	054 3322885		ayaphi@ncpg.gov.za	P.O. Box 231, Upington 8800
Department of International Relations and Cooperation	Mr. Poleng Tshaba	(012)351 0305	012 329 1000		Private Bag X152 Pretoria, 0001
Northern Cape Department of Agriculture and Land Reforms	Wonders Mothibi	(053)838 9102	053 831 3635	fortunec@ncpg.gov.za	Private Bag X5018, Kimberley, 8300
Siyanda District Municipality	D. Ngxanga (Municipal Manager)	(054)337 2800	(054) 337 2888		Private Bag X6039, Upington 8800

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
	Direct impacts: Archaeological impacts	Low (negative)	Should any such remains be uncovered, or exposed during excavations, these must immediately be reported to Dr David Morris at the McGregor Museum in Kimberly (082 222 4777 or 053 839 2706), and the area sealed off. Burials or ostrich eggshell caches must not be removed until inspected by the archaeologist.
	Loss of vegetation and associated habitat	Low (negative)	<ul style="list-style-type: none"> • Micro-placement adjustment of the final route must be done in consultation with a suitably qualified ECO in order to establish the best route to minimise the impact on as many of the protected tree species as possible. • Permits must be obtained for the removal of any protected trees which cannot be avoided. • Any significant plant species that may be encountered must be identified and located (e.g. <i>Acacia erioloba</i>) and all efforts made to avoid damage to such species. • Only existing access roads should be used for access to the terrain. • Access roads must be clearly demarcated and access must be tightly controlled (deviations may not be allowed). • Indiscriminate clearing of areas must be avoided (all remaining areas to remain as natural as possible). • All topsoil (at all excavation sites) must be removed and stored separately for re-use for

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Activity	Impact summary	Significance	Proposed mitigation
			<p>rehabilitation purposes. The topsoil and vegetation should be replaced over the disturbed soil to provide a source of seed and a seed bed to encourage re-growth of the species removed during construction.</p> <ul style="list-style-type: none"> • Once the construction is completed all further movement must be confined to the access tracks to allow the vegetation to re-establish over the excavated areas. • Rehabilitation must include sand stabilisation methods to protect the open sandy areas against wind erosion.
	Impact on threatened vegetation	Negligible	Unlikely impacts, no mitigation proposed
	Impact on protected vegetation	Medium (negative)	<ul style="list-style-type: none"> • Micro-placement adjustment of the final route must be done in consultation with a suitably qualified ECO in order to establish the best route to minimise the impact on as many of the protected tree species as possible. • Permits must be obtained for the removal of any protected trees which cannot be avoided.
	Freshwater	Low (negative)	<ul style="list-style-type: none"> • Pipeline to be buried at least 1.5m deep • Construction to take place in dry season • Backfilling of the trench should restore pre-construction elevations. • An environmental management programme should be compiled, which includes detailed Method Statements that will ensure that the above mitigation measures can be effectively implemented and the identified impacts can be avoided or minimised as far as possible. • An Environmental Control Officer should be appointed to the project, to ensure that the objectives of the required mitigation measures are met during project implementation.
	Visual	Very low (negative)	Due to the fact the pipeline will be buried, it is expected to be low negative. The trenches will be backfilled, and where required, rehabilitated and brush-packed.
	Noise	Negligible	No mitigation proposed.
	Indirect impacts:		

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Activity	Impact summary	Significance	Proposed mitigation
	<i>Cumulative impacts:</i> The proposed activity could potentially contribute to the cumulative loss of ecological function and other biodiversity features on a regional basis. However, both vegetation types identified in the area are classified as "Least Threatened", and no special habitats were encountered on site which could sustain significant smaller ecosystems.	Low (negative)	Same mitigation measures as proposed for vegetation and freshwater ecosystems above
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
Alternative 2: Please note that the alternative design will have the same proposed route, and the impacts will therefore be the same, unless otherwise indicated			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
Alternative 3			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		

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Activity	Impact summary	Significance	Proposed mitigation
	Cumulative impacts:		
No-go option <p>According to the Biodiversity Assessment (Appendix D2), the “No-Go alternative” does not signify significant biodiversity gain or loss especially on a regional basis. However, it will ensure that none of the potential impacts occur. The current status quo will remain and there will be no impact (even temporarily) on the vegetation, protected species or river corridors.</p> <p>There will also be no potential impacts on archaeological aspects on the proposed site</p> <p>However, the positive socio-economic impacts from the proposed pipeline will not be achieved. The Middelputs area in Botswana will still require potable water, and live-stock farming, which is a main income source in that area, could be threatened.</p> <p>No jobs will be created during the construction or operational phase.</p>			
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as Appendix F.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

Direct Impacts:

- Archaeological heritage

According to the Archaeological Assessment (**Appendix D3**), the dunes to the west of the R340 is rich in Later Stone Age microlithic tools, ostrich eggshell and pottery. Similar settings along the valley would have a similar wealth of archaeological material.

‘Red-flag’ areas are particularly where the pipeline cuts through and out of the Molopo Valley dunes.

A walk through survey of the proposed pipeline route was not required as most of the route is aligned alongside an existing pipeline servitude, or minor service road.

Unmarked burials, as well as buried caches of ostrich eggshell water containers may, however, be

uncovered during excavations for the proposed pipeline.

Mitigation:

- Should any such remains be uncovered, or exposed during excavations, these must immediately be reported to Dr David Morris at the McGregor Museum in Kimberly (082 222 4777 or 053 839 2706), and the area sealed off. Burials or ostrich eggshell caches must not be removed until inspected by the archaeologist.

- **Botanical**

Direct loss of vegetation type and associated habitat due to construction and operational activities:

- Loss of vegetation and associated habitat

The vegetation itself is not considered to belong to a threatened or protected ecosystem. No special habitats, apart from the extensive calcrete outcrops, were encountered on site (e.g. quartz patches or broken veld), which could sustain significant smaller ecosystems. However, any wetland or river system must also be regarded as a special habitat and the proposed project will probably impact on the Molopo River. However, due to the nature of the proposed project (underground pipeline), the fact that the river is non-perennial (mostly dry), the short construction period (duration of impact) and the temporary nature of the impact, it is highly unlikely that the proposed project will have a significant impact on the river system or its ecology.

Taking the above and the temporary nature of the impact into account it is highly unlikely that the proposed project will have a permanent or long term effect on the loss of vegetation or associated habitat. **The impact is thus rated as low.**

Mitigation: The following is some mitigation which will minimise the impact of the solar plant location and operation.

- Micro-placement adjustment of the final route must be done in consultation with a suitably qualified ECO in order to establish the best route to minimise the impact on as many of the protected tree species as possible.
 - Permits must be obtained for the removal of any protected trees which cannot be avoided.
 - Any significant plant species that may be encountered must be identified and located (e.g. *Acacia erioloba*) and all efforts made to avoid damage to such species.
 - Only existing access roads should be used for access to the terrain.
 - Access roads must be clearly demarcated and access must be tightly controlled (deviations may not be allowed).
 - Indiscriminate clearing of areas must be avoided (all remaining areas to remain as natural as possible).
 - All topsoil (at all excavation sites) must be removed and stored separately for re-use for rehabilitation purposes. The topsoil and vegetation should be replaced over the disturbed soil to provide a source of seed and a seed bed to encourage re-growth of the species removed during construction.
 - Once the construction is completed all further movement must be confined to the access tracks to allow the vegetation to re-establish over the excavated areas.
 - Rehabilitation must include sand stabilisation methods to protect the open sandy areas against wind erosion.
- Impact on threatened vegetation

According to the Biodiversity Assessment (**Appendix D2**) no threatened or endangered species were recorded during the site visit. However, it must be noted that the vegetation type is considered

“Least Threatened” and that this classification is based on plant species diversity and turnover as well as habitat transformation. The number of species per broad geographical levels for the savannah biome is relative low. It is therefore very unlikely that any red data species will be confined to the proposed site alone.

Taking the above into account it is highly unlikely that the proposed project will have a significant or long term effect on threatened or endangered species. **The impact is thus rated as low.**

- Impact on protected vegetation

According to the Biodiversity Assessment (**Appendix D2**), three protected tree species in terms of the National Forests Act of 1998 (Act 84 of 1998) have been observed and are likely to be impacted during the construction namely: *Acacia erioloba* (Camel thorn) *Boscia albitrunca* (Sheppard's tree) and *Acacia haematoxylon* (Grey Camelthorn).

A botanical scan of the final route layout should be done, and as a pre-cautionary measure all viable herb, bulbs and succulent plant species encountered within the footprint should be removed and replanted through a dedicated search and rescue operation.

Taking the above into account it is very likely that the proposed project will have an impact protected species (especially *Acacia haematoxylon*). **The impact is thus rated as medium.**

Mitigation:

- Micro-placement adjustment of the final route must be done in consultation with a suitably qualified ECO in order to establish the best route to minimise the impact on as many of the protected tree species as possible.
- Permits must be obtained for the removal of any protected trees which cannot be avoided.

• Freshwater ecosystems

The proposed pipeline will cross the Molopo River valley and will therefore have a potentially negative and direct affect. However due to the placement of the pipeline underground (at least 1.5m deep), the fact that the river is non-perennial (mostly dry), the short construction period (duration of impact) and the temporary nature of the impact, it is highly unlikely that the proposed project will have a significant impact on the river system or its ecology. **The impact is thus rated as low.**

• Visual and noise impacts

The activity does have a potential to have a negative visual impact, however, due to the fact the pipeline will be buried, it is expected to be low negative. The trenches will be backfilled, and where required, rehabilitated and brush-packed. With the mitigation measures, as described in the EMP (**Appendix G**), the impact is expected to be negligible.

Due to the isolated nature of the site (far from residential areas), the potential noise impacts are also expected to be negligible.

Indirect impacts:

According to the Biodiversity Assessment (**Appendix D2**), the following possible indirect impacts were associated with the proposed project:

- Erosion (notably wind erosion) – The sandy dunes are very susceptible to disturbance and it would be imperative that the dunes are stabilised immediately after construction.
- The possible impact on protected plant species as described in the “List of protected tree

species" (GN 716 of 2012) and the "Protected Species" list (Schedule 2 of the NC Nature Conservation Act 9 of 2009).

- Establishment of a construction camp and site offices as well as labourers facilities.
- Temporary storage areas (e.g. pipe's and fittings and concrete mixing material).
- Sourcing of sand for bedding material along the calcrete patch.
- Disposal of "clean spoil".

Taking the above into account it is very likely that the proposed project will have indirect impacts. It is considered that indirect impacts will have a similar impact as direct impacts, which will lead to a cumulative effect on the environment. **On its own the impact is considered to be low.**

Cumulative impacts:

The proposed activity could potentially contribute to the cumulative loss of ecological function and other biodiversity features on a regional basis. However, both vegetation types identified in the area are classified as "Least Threatened", and no special habitats were encountered on site which could sustain significant smaller ecosystems.

Although the Molopo River could be considered a special habitat, as described above, it is highly unlikely that the proposed project will a significant impact on the river system or its ecology.

Taking all of the above into account it is very likely that the proposed project will have a temporary impact. If rehabilitation and impact minimisation is not implemented correctly the proposed project may have significant long term impacts and the cumulative impact could be considered to be **medium** (without mitigation). With the implementation of impact minimisation actions (please refer to the EMP (**Appendix G**), the impact could be reduced to **medium low** (taking the temporary impact on the Molopo River system into account as well as the likelihood of impacts to protected species.

Summary:

The following is a summary of the potential impacts, and their ratings, after mitigation:

Construction phase.

Potential impacts on archaeological heritage – **The activity may possibly have an impact on archaeological aspects on the site if encountered during trenching. The impact would then be considered Low Negative and would be permanent.**

Loss of vegetation and associated habitat - **Low (Negative), very likely, only during construction phase.**

Impact on threatened vegetation - **Low (Negative), likely, only during construction phase.**

Impact on threatened vegetation – **Medium (Negative), very possible, only during construction phase.**

Freshwater ecosystems – **Low (Negative), very likely, only during construction phase.**

Job creation – **Low (Positive)**, definite.

Noise impact - **Negligible, definite, only during construction phase.**

Visual impact – **Negligible, unlikely**

Operational Phase

Potential impacts on archaeological heritage – **Negligible, highly unlikely**

Loss of vegetation and associated habitat – **Negligible, highly unlikely**

Impact on threatened vegetation – **Negligible, highly unlikely**

Impact on threatened vegetation – **Negligible, highly unlikely**

Freshwater ecosystems – **Negligible, highly unlikely**

Job creation – **Low (Positive), definite,**

Noise impact - **Negligible, highly unlikely**

Visual impact – **Negligible, highly unlikely**

Decommissioning

The project as proposed does not require 'decommissioning' or 'closure', as such the potential impacts thereof is considered irrelevant.

Alternative B

Alternative C

No-go alternative (compulsory)

According to the Biodiversity Assessment (**Appendix D2**), the "No-Go alternative" does not signify significant biodiversity gain or loss especially on a regional basis. However, it will ensure that none of the potential impacts occur. The current status quo will remain and there will be no impact (even temporarily) on the vegetation, protected species or river corridors.

There will also be no potential impacts on archaeological aspects on the proposed site

However, the positive socio-economic impacts from the proposed pipeline will not be achieved. The Middelputs area in Botswana will still require potable water, and live-stock farming, which is a main income source in that area, could be threatened.

No jobs will be created during the construction or operational phase.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

The following is a list of recommended conditions and mitigation measures from a biodiversity and heritage perspective:

- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must be developed by a suitably experienced Environmental Assessment Practitioner (please refer to **Appendix G** for the EMP).
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and the Biodiversity study recommendations as well as any other conditions which might be required by the Department of Environmental Affairs.
- The specific location of the site camp must be overseen by the ECO and must not impact on the dunes and *Acacia erioloba* species (encountered on these dunes) in close proximity to the proposed site camp location.
- An integrated waste management system must be implemented during the construction phase.
- All rubble and rubbish (if applicable) must be collected and removed from the site to a suitable registered waste disposal site.
- All alien vegetation should be removed from the larger property (if applicable).
- Micro-placement adjustment of the final route must be done in consultation with a suitably qualified ECO in order to establish the best route to minimise the impact on as many of the protected tree species as possible.
- A suitably qualified ECO or botanist must walk the final route in order to determine whether any other protected or significant plant species are present within the proposed footprint.
- As a pre-cautionary measure all viable herb, bulbs and succulent plant species encountered within the development footprint should be removed and replanted through a dedicated search and rescue operation.
- Permits must be obtained for the removal of any protected species which cannot be avoided.
- Only existing access roads should be used for access to the terrain. Access roads must be clearly demarcated and access must be tightly controlled (deviations may not be allowed).
- Indiscriminate clearing of areas must be avoided (all remaining areas to remain as natural as possible).
- All topsoil (the top 15-20 cm at all excavation sites), must be removed and stored separately for re-use for rehabilitation purposes. The topsoil and vegetation should be replaced over the disturbed soil to provide a source of seed and a seed bed to encourage re-growth of the species removed during construction.
- Once the construction is completed all further movement must be confined to the approved access and maintenance tracks to allow the vegetation to re-establish over the excavated areas.
- Adequate measures must be implemented to ensure against erosion (the use of *Acacia mellifera* and even *Rhigozum trichotomum* stems might be considered for use in dune

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stabilisation).

- Adequate ablution facilities must be provided along the construction route. The placement of these facilities should be in consultation with the ECO. No ablution facilities are to be located within 100m of a natural water course.
- No firewood should be collected on site. Adequate, safe, cooking equipment must be provided for workers at the construction site camp.
- Should any unmarked burials, as well as buried caches of ostrich eggshell water containers be uncovered, or exposed during excavations, these must immediately be reported to Dr David Morris at the McGregor Museum in Kimberly (082 222 4777 or 053 839 2706), and the area sealed off. Burials or ostrich eggshell caches must not be removed until inspected by the archaeologist.

Is an EMPr attached?

YES

NO

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information