the denc

Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

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	(For official use only)
File Reference Number:	
Application Number:	
Date Received:	

Basic Assessment Report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

- This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 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.
- This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
- 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.
- Where applicable **tick** the boxes that are applicable in the report.
- An incomplete report may be returned to the applicant for revision.
- 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.
- This report must be handed in at offices of the relevant competent authority as determined by each authority.
- No faxed or e-mailed reports will be accepted.
- The signature of the EAP on the report must be an original signature.
- The report must be compiled by an independent environmental assessment practitioner.
- 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.
- A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
- 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.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	YES	NO
If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.		

PROPOSED PAULSHOEK BULK WATER SUPPLY, KAMIESBERG LOCAL MUNICIPALITY, NAMAKWA DISTRICT MUNICIPALITY, NORTHERN CAPE

- **ACTIVITY DESCRIPTION**

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

A proposed bulkwater supply system is proposed at Paulshoek. The Kamiesberg Municipality faces numerous challenges in terms of sustainable provision of water which puts significant pressure on the limited available water resources. Paulshoek currently has only one borehole that is operational. One additional borehole was drilled whereby the quality is not adequate for human consumption.

The new borehole was tested and the quantity of water that can be abstracted over the long term for use was found to be sufficient. The water quality was also tested and found to be unfit for long-term human consumption due to high levels of dissolved salts posing health related problems

The Kamiesberg Municipality is proposing to install a Reverse Osmosis water desalination plant and associated infrastructure to augment the supply of portable water to the town of Paulshoek. This additional water will be provided through the existing water distribution system.

The following proposed developments:

- Equipment of existing boreholes and equipment for additional boreholes,
- construction of a 228Kl clean water storage reservoir,
- installation of pipelines (maximum diameter of 160mm and maximum flow rate of 3l/sec.),
- construction of a Water Treatment Works (desalination plant) with a capacity of 180 kl/day operated over a period of 8 hours per day.
- 0.8 ha evaporation ponds (waste brine). Approximately 45kl/day of wastewater/effluent will be produced per day, which will be stored in the evaporation ponds. The evaporation ponds have a brine capacity designed for 20years. The evaporation ponds will be equipped with leak detections systems.

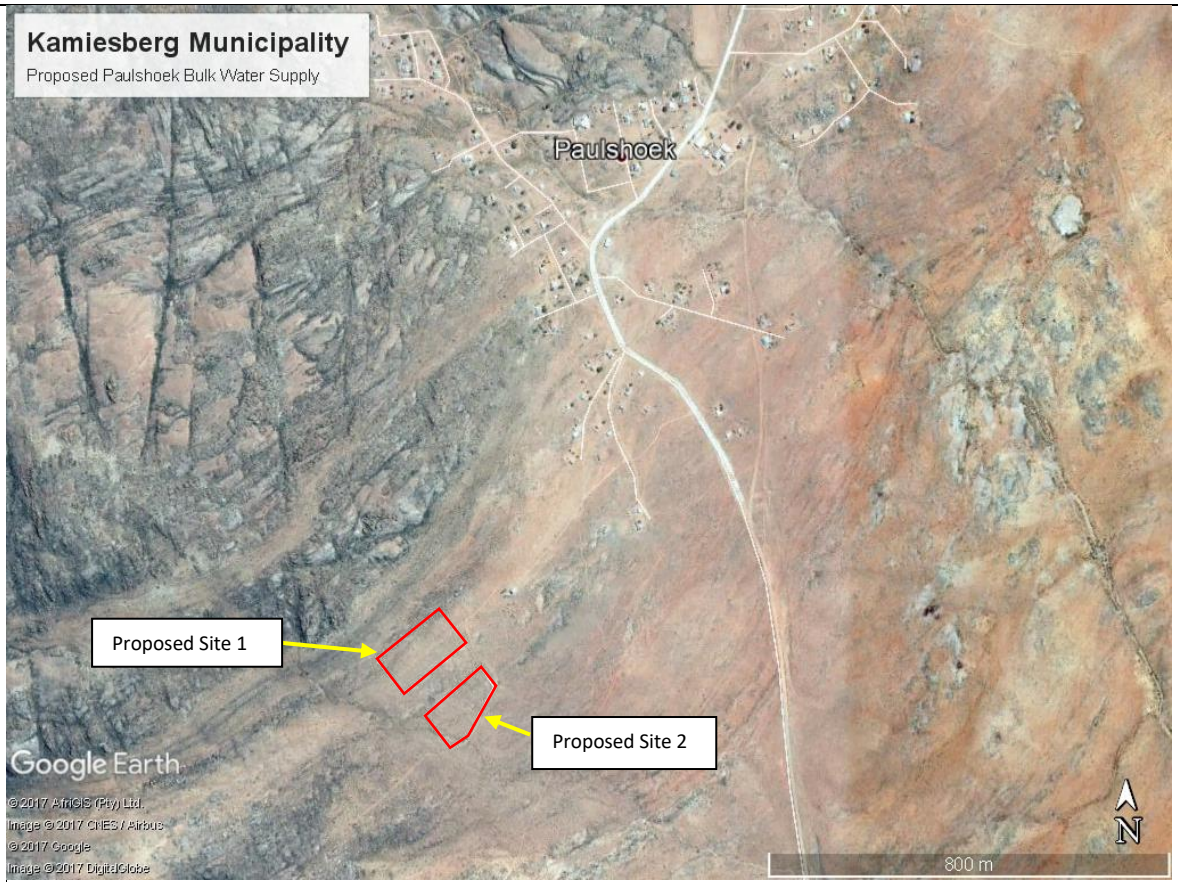

Figure 1: Aerial view of the proposed development site

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

Listed activity as described in GN 324, 325 and 327	Description of project activity
GN 327 (Item 27): The **clearance of an area** of 1 hectares or more, but less than 20 hectares of **indigenous vegetation**, except where such clearance of indigenous vegetation is required for; (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	The proposed evaporation ponds will have an area of 0.8ha and with the combined development footprints including the reservoir, pipelines and desalination plant, will require the clearance of more than 1ha of indigenous vegetation,
GN 324 (Item 12): The **clearance of an area** of 300 square metres or more of **indigenous vegetation** except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.	More than 300m^2 of vegetation will need to be cleared to construct the evaporation ponds, pipelines, reservoir and desalination plant

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

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014.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.

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, 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

Site alternatives are limited, however, a second site alternative has been identified directly south of the preferred alternative (see Figure 1 above)

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
	30°22'33.40"S	18°15'01.39"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
	30°22'36.82"S	18°15'04.45"E
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
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		

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 of this form.

b) Lay-out alternatives

There are no feasible layout alternatives that were considered

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
There are no feasible alternative layouts considered that would mitigate any potential environmental impact, as the entire site will be developed		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

No technology alternatives were considered.

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

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

Additional boreholes

Alternative 1 (preferred alternative)		

Alternative 2
Drilling of additional boreholes that does not require treatment by a Desalination Process was attempted, however, these proved unsuccessful.
Alternative 3

e) No-go alternative

This would mean that no-development would take place and the proposed site will remain as is. No new bulk water supply system will be constructed, and no new water supply will be created for the town of Paulshoek.

Although this option would result in no potential negative environmental impacts, the socio-economic benefits from implementing the activity would not be achieved.

The no-go option would only have been recommended if it were found that the construction of the proposed development on this site or in this area might potentially cause substantial detrimental harm to the environment.

According to the Biodiversity Assessment (**Appendix D1**), the anticipated impacts will not occur, and the status quo will remain (livestock grazing as the main land use). In this case livestock grazing has already degraded the veld significantly.

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

- **PHYSICAL SIZE OF THE ACTIVITY**

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

Alternative:		**Size of the activity:**
Alternative A1 (preferred activity alternative)		Approximately 0.8ha
Alternative A2 (if any)		0.8ha
Alternative A3 (if any)		m^2

or, for linear activities:

Alternative:		**Length of the activity:**
Alternative A1 (preferred activity alternative)		m
Alternative A2 (if any)		m
Alternative A3 (if any)		m

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

Alternative:		**Size of the site/servitude:**
Alternative A1 (preferred activity alternative)		m^2
Alternative A2 (if any)		m^2

Alternative A3 (if any)		m^2

- **SITE ACCESS**

Does ready access to the site exist?	YES	~~NO~~
If NO, what is the distance over which a new access road will be built		N/A

Describe the type of access road planned:

No new access roads will be required.

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.

- **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).

- **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.

- **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 DWS);
- 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.

- **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.

- **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.

- **ACTIVITY MOTIVATION**

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

• **Is the activity permitted in terms of the property's existing land use rights?**	~~YES~~	NO	Please explain
The site is located on Communal Land owned by the municipality			
• **Will the activity be in line with the following?**			
(a) Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
Kamiesberg Municipality faces numerous challenges in terms of sustainable provision of water which put significant pressure on the limited available water resources. Paulshoek currently has only one borehole that is operational. One additional borehole was drilled whereby the quality is not adequate for human consumption.			

The new borehole was tested and the quantity of water that can be abstracted over the long term for use was found to be sufficient. The water quality was also tested and found to be unfit for long-term human consumption due to high levels of dissolved salts posing health related problems The Kamiesberg Municipality is proposing to install a Reverse Osmosis water desalination plant and associated infrastructure to augment the supply of portable water to the town of Paulshoek. This additional water will be provided through the existing water distribution system.			
(b) Urban edge / Edge of Built environment for the area	~~YES~~	NO	Please explain
Although the site is located near Paulshoek, it is within a large undeveloped area just outside the town.			
(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	~~NO~~	Please explain
Kamiesberg Municipality faces numerous challenges in terms of sustainable provision of water which put significant pressure on the limited available water resources. Paulshoek currently has only one borehole that is operational. One additional borehole was drilled whereby the quality is not adequate for human consumption. The Kamiesberg Municipality is proposing to install a Reverse Osmosis water desalination plant and associated infrastructure to augment the supply of portable water to the town of Paulshoek. This additional water will be provided through the existing water distribution system.			
(d) Approved Structure Plan of the Municipality	YES	NO	Please explain
Unknown. Kamiesberg Municipality faces numerous challenges in terms of sustainable provision of water which put significant pressure on the limited available water resources. Paulshoek currently has only one borehole that is operational. One additional borehole was drilled whereby the quality is not adequate for human consumption. The Kamiesberg Municipality is proposing to install a Reverse Osmosis water desalination plant and associated infrastructure to augment the supply of portable water to the town of Paulshoek. This additional water will be provided through the existing water distribution system.			
(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
No EMF was identified			
(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain

• **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	NO	Please explain
• **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	~~NO~~	Please explain
Kamiesberg Municipality faces numerous challenges in terms of sustainable provision of water which put significant pressure on the limited available water resources. Paulshoek currently has only one borehole that is operational. One additional borehole was drilled whereby the quality is not adequate for human consumption. The Kamiesberg Municipality is proposing to install a Reverse Osmosis water desalination plant and associated infrastructure to augment the supply of portable water to the town of Paulshoek. This additional water will be provided through the existing water distribution system. The project will also create work opportunities during the construction phase of the development.			
• **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	~~NO~~	Please explain
The proposed project is to provide additional water supply service to the town of Paulshoek. This additional water will be provided through the existing water distribution system.			
• **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
The Applicant is the municipality			
• **Is this project part of a national programme to address an issue of national concern or importance?**	YES	~~NO~~	Please explain
Sufficient and functioning basic services, including water supply, is a national concern			

• **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	~~NO~~	Please explain
The proposed location has been identified by the engineers as suitable for the proposed development. There are no significant negative environmental impacts that have been identified by the botanical or heritage specialists.			
• **Is the development the best practicable environmental option for this land/site?**	YES	NO	Please explain
The proposed development will result in the loss of indigenous vegetation over the site, however, the Namaqualand Blomveld and Namaqualand Granite Renosterveld is considered least threatened. The Namaqualand Blomveld vegetation encountered is also degraded due to overgrazing. The proposed site falls within the edge of an ESA according to the Northern Cape Critical Biodiversity Areas (2016). No NEM:BA, NFA protected or red-listed plant species were observed within the proposed footprint. The proposed development will not negatively impact on any significant archaeological resources according to the Archaeological Impact Assessment (**Appendix D3**). According to the Palaeontological Exemption letter (**Appendix D4**), The overall palaeontological impact significance is considered to be VERY LOW. This is because the study area is underlain by unfossiliferous metamorphic basement rocks (granite-gneisses *etc*) and / or mantled by superficial sediments of low palaeontological sensitivity while the development footprint is very small.			
• **Will the benefits of the proposed land use/development outweigh the negative impacts of it?**	YES	~~NO~~	Please explain
No significant negative environmental impacts are expected by the proposed development and the benefits of additional freshwater supply of better quality water to the town of Paulshoek will outweigh any negative impacts.			
• **Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?**	~~YES~~	NO	Please explain
Similar projects are proposed in other towns in the municipality Similar projects are proposed in other towns in the municipality.			
• **Will any person's rights be negatively affected by the proposed activity/ies?**	YES	NO	Please explain
No person's rights are expected to be negatively affected by the proposed development. The activity is expected to have a general positive impact on the surrounding area.			
• **Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?**	~~YES~~	NO	Please explain
Unknown. The development is located outside the built up/urban area of Paulshoek,			
• **Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?**	YES	~~NO~~	Please explain
The proposed bulk water supply system in Paulshoek is considered to contribute to SIPS 18:			

SIP 18: Water and sanitation infrastructure

A 10-year plan to address the estimated backlog of adequate water to supply 1.4m households and 2.1m households to basic sanitation.

The project will involve provision of sustainable supply of water to meet social needs and support economic growth. Projects will provide for new infrastructure, rehabilitation and upgrading of existing infrastructure, as well as improve management of water infrastructure.

• **What will the benefits be to society in general and to the local communities?**	Please explain

The project will provide job opportunities during the construction and the operational phase.

This development has the potential to provide an economic injection in the local community, by means of creating employment opportunities.

The proposed development will increase the income generated by the study area, which is currently non-existent.

Most importantly, it will provide additional water supply of better quality water to the town of Paulshoek.

• **Any other need and desirability considerations related to the proposed activity?**	Please explain

N/A

• **How does the project fit into the National Development Plan for 2030?**	Please explain

N/A

- **Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.**

The general objectives of Integrated Environmental Management have been taken into account through the following:

- 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 – *please refer to Section D below*.
- The effects of the activity on the environment have been considered before actions taken in connection with them – *alternatives have been considered and investigated (please refer to Section A below).*
- Adequate and appropriate opportunity for public participation was ensured through the public participation process – *please refer to Section C for the public participation information, including the list of identified Interested and Affected parties, as well as the methods for identifying and informing I&APs of the application and proposed activity*.
- The environmental attributes have been considered in the management and decision-making of the activity – *an EMP has been included (**Appendix G**) with the proposed activity and must adhere to the requirements of all applicable state Authorities.*

- **Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.**

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:

- People and their needs have been placed at the forefront while serving their physical, psychological, developmental, cultural and social interests – *the proposed activity will have a beneficial impact on people, as it will provide much needed additional housing opportunities.*
- 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.
- 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 – *no exploitation of non-renewable natural resources occurs with the proposed activity.*
- 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 - *refer to Section F below*.
- The interests, needs and values of all interested and affected parties have been taken into account in any decisions through the Public Participation Process – *please refer to Section C for the public participation information.*
- The social, economic and environmental impacts of the activity have been considered, assessed and evaluated, including the disadvantages and benefits – *refer to Section B below.*
- 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 – *the proposed activity is expected to have minimal/negligible environmental impacts, especially after mitigation measures as described under Section D and E and in the EMP are implemented.*

• 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**
National Water Act	Water Use Licence	Department of Water and Sanitation	Not yet
Northern Cape Nature Conservation Act, Act 9 of 2009	NCNCA Protected plant species located on the site	Department of Environment and Nature Conservation (DENC)	Not yet

• WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES	~~NO~~
If YES, what estimated quantity will be produced per month? Unknown		m^3

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

The general solid waste generated during construction will be consolidated on site during construction, and disposed of at the nearest approved municipal landfill site.

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

The general solid waste generated during construction will be consolidated on site during construction, and disposed of at the nearest approved municipal landfill site.

Will the activity produce solid waste during its operational phase?	YES	~~NO~~
If YES, what estimated quantity will be produced per month?		m^3
How will the solid waste be disposed of (describe)?		
No solid waste is expected to be generated during the operational phase.		
If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.		
No solid waste is expected to be generated during the operational phase.		
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.		

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?	Approximately 45kl/day	
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.		
Approximately 45kl/day of wastewater/effluent will be produced per day, which will be stored in the evaporation ponds.		

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:

Wastewater/effluent will be stored in 0.8ha evaporation ponds

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that 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:

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA? A Waste management is not required in our opinion, as the activity will be producing effluent/ wastewater to be stored in ponds	~~YES~~	NO

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?	YES	~~NO~~
If YES, is it controlled by any legislation of any sphere of government?	~~YES~~	NO

Describe the noise in terms of type and level:

The activity is not expected to produce significant noise that would be a nuisance to any nearby residents.

• 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~~

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:	180 kilolitres/day	
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES	~~NO~~
If YES, please provide proof that the application has been submitted to the Department of Water Affairs.		

Please note that this application is for the desalination of groundwater currently being extracted from boreholes, as well as any additional boreholes that will be required.

• ENERGY EFFICIENCY

Describe the design measures, if any, which 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.

• Has a specialist been consulted to assist with the completion of this section?	YES	NO
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	Namakwa District Municipality
	Local Municipality	Kamiesberg Municipality
	Ward Number(s)	
	Farm name and number	Remainder of Farm Leliefontein 614
	Portion number	
	SG Code	C05300060000061400000
	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:	Communal Land
	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?	YES	~~NO~~

- **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~~

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

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

- **LOCATION IN LANDSCAPE**

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

2.1 Ridgeline		2.4 Closed valley		2.7 Undulating plain / low hills	
2.2 Plateau		2.5 Open valley	x	2.8 Dune	
2.3 Side slope of hill/mountain		2.6 Plain		2.9 Seafront	
2.10 At sea					

- **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)	~~YES~~	NO		YES	NO		YES	NO
Dolomite, sinkhole or doline areas	~~YES~~	NO		YES	NO		YES	NO
Seasonally wet soils (often close to water bodies)	~~YES~~	NO		YES	NO		YES	NO
Unstable rocky slopes or steep slopes with loose soil	~~YES~~	NO		YES	NO		YES	NO
Dispersive soils (soils that dissolve in water)	~~YES~~	NO		YES	NO		YES	NO
Soils with high clay content (clay fraction more than 40%)	~~YES~~	NO		YES	NO		YES	NO
Any other unstable soil or geological feature	~~YES~~	NO		YES	NO		YES	NO
An area sensitive to erosion	~~YES~~	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.

- **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 - 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.

- **SURFACE WATER**

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

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

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

There are no watercourses (streams or wetlands) on the preferred site (Site 1), or within 32m of Site 1. The closest watercourse is a small ephemeral stream located approximately 50m south of the site. The proposed development on Site 1 is therefore expected to have no direct impacts on this watercourse.

The same ephemeral stream does cut over a small portion of Site 2. However, due to the proposed size of the evaporation ponds, these can be located on the site without having a direct impact on the ephemeral stream.

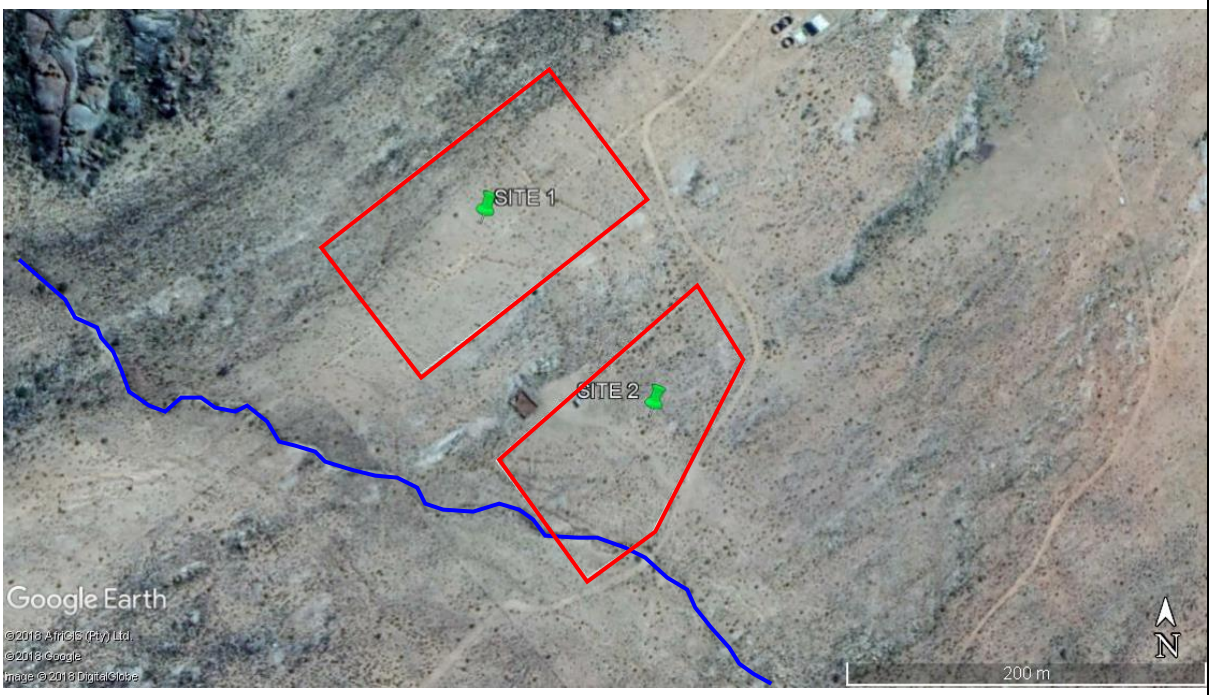

Figure 2: Google Earth image of the site, showing the nearest watercourse (blue line) in relation to the two site alternatives (red polygons).

• 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 (livestock grazing)
~~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)

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

No impacts are expected.

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:

No impacts are expected.

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)	~~YES~~	NO
Core area of a protected area?	~~YES~~	NO
Buffer area of a protected area?	~~YES~~	NO
Planned expansion area of an existing protected area?	~~YES~~	NO
Existing offset area associated with a previous Environmental Authorisation?	~~YES~~	NO
Buffer area of the SKA?	~~YES~~	NO

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

- **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	~~NO~~
	Uncertain	
The following are the findings according to the Heritage Screener (**Appendix D2**): The central Namaqualand region has been inhabited since the Early Stone Age (ESA) and was increasingly exploited throughout the Middle and Later Stone Ages (MSA and LSA, respectively). In the period of recent prehistory, the area was home to Khoekhoen who moved seasonally through the landscape with their flocks, a pattern of transhumance that was repeated by the early European settlers in the region. The proposed development area is situated on the farm Leliefontein, on which the Leliefontein Mission Station was established in 1812, some 15km northwest of Paulshoek. The Mission Station was the site of the Leliefontein Massacre in		

1902, which saw the slaughter of 35 local inhabitants by the Boer Leader Manie Maritz.

Very little heritage survey work has been conducted in this region, with only two previous archaeological surveys completed within a 50km radius (Figures 2a and 2b). A study conducted some distance to the southwest of the study area indicated that at least parts of the area are of low archaeological heritage significance (Webley 2012, SAHRIS NID 26814). However, a study conducted some 45kms to the southeast, identified several open surface scatters of Middle Stone Age artefacts, noting the presence of buried material in places; they recorded Later Stone Age sites and a number of highly patinated artefacts that were likely Early Stone Age in origin (Lanham and Manhire 2007, SAHRIS NID 4820). This disparity between findings is not surprising given the distance between the two surveys (approximately 90kms), and indicates spatially diverse archaeological signatures across the broader Namaqualand landscape. This pattern is more likely a consequence of the lack of reconnaissance and research in the area rather than a real lack of archaeological material.

Known heritage sites in the area include two Provincial Heritage Sites, being the Letterklip at Garies (SAHRIS SID 28126) and the Methodist Church and Manse at nearby Leliefontein (SAHRIS SID 28127) (Figure 3a), while a single graveyard has been graded Grade IIIa (SAHRIS SID 105575). The remaining known sites comprise twenty artefact locations recorded some 43km to the south east at Kliprand, Western Cape (Figure 3b), and a single rock art site (Figure 3a) located on a rocky outcrop to the west (SAHRIS SID 93814).

According to the SAHRIS Palaeosensitivity Map (2014) the development area is underlain by the Kamiesberg Formation which includes rock types such as migmatitic banded biotite gneiss. These are of **insignificant/zero fossil sensitivity** as they are metamorphosed deposits that are unfossiliferous. While no Palaeontological Impact Assessments have been undertaken in the area, a Letter of Exemption (LOE) compiled by Dr John Almond (2012, SAHRIS NID 108434) some 37kms west of the area describes the geology thus: “The Kamieskroon Gneiss...is part of the highly-metamorphosed Late Precambrian rocks of the Garies Terrane (Bushmanland Subprovince, Namaqua-Natal Metamorphic Belt). This bedrock is not fossiliferous. Minor Quaternary regolith and colluvial soil mantles the bedrock, but these deposits are very poorly fossiliferous.” (This LOE has not been mapped, but covers the area indicated in Figure 2b by SAHRIS NID 108432).

Given that the proposed study area is in hilly terrain, largely undisturbed, and given the paucity of information about the local archaeology, it is recommended that the development site be subject to an archaeological survey.

The following are the findings of the Archaeological Impact Assessment (**Appendix D3**):

The proposed development will not negatively impact on any significant archaeological resources, however the proposed pipeline runs alongside rock art site PLSK1 (grade IIIB).

In summary;

- The proposed development will not negatively impact on any significant archaeological resources, however it is recommended that site PLSK1 be formally recorded.
- PLSK1 must not be impacted by the proposed development and a 20m buffer around the site must be implemented.
- There is no heritage objection to the proposed development and neither site is preferred from a heritage perspective.

According to the Palaeontological Letter of Exemption (**Appendix D4**):

The overall palaeontological impact significance of the proposed Bulk Water Supply System development on the Remainder of Leliefontein 614 near Paulshoek, Namaqualand region of the Northern Cape, is considered to be VERY LOW. This is because the study area is underlain by unfossiliferous metamorphic basement rocks (granite-gneisses *etc*) and / or mantled by superficial sediments of low palaeontological sensitivity while the development footprint is very

small. It is therefore recommended that, pending the exposure of significant new fossils during development, exemption from further specialist palaeontological studies and mitigation be granted for this development.

There are no objections on palaeontological heritage grounds to authorisation of the proposed bulk water supply development. Should any substantial fossil remains (*e.g.* vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za).

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:

Will any building or structure older than 60 years be affected in any way?	~~YES~~	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	~~NO~~
If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.		
Please note that the site is larger than 5 000m^2 and the character of the site will change. The project is therefore subject to Section 38(1) of the NHRA. The project will be registered with SAHRA through SAHRIS.		

- **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:

According to the Kamiesberg Municipality IDP 2017-2022, unemployment and poverty affects a large number of people within the municipal area. According to the Census 2011, 2205 people are employed, 981 are unemployed, 723 are classified as discourage work-seekers and 2535 are not economically active. Kamiesberg Local Municipality has three main economic sectors: livestock grazing, mining and tourism. The main economic activity in the Rural areas are Agriculture.

Economic profile of local municipality:

According to the Kamiesberg Municipality IDP 2017-2022, Kamiesberg Local Municipality has three main economic sectors: livestock grazing, mining and tourism. The main economic activity in the Rural areas is Agriculture.

The municipality is dependent on the following economic activities -Quantec Data 2009:

Industry	**Northern Cape**	**Namakwa DM**	**Kamiesberg**
Agriculture, forestry and fishing	16%	12.6%	10%
Mining and quarrying	8.2%	16.3%	21.5%
Manufacturing	3.8%	2.8%	3.3%
Electricity, gas & Water	0.6%	0.4%	0.1%
Construction	4.6%	5.7%	5.5%
Wholesale & Retail trade, catering & accommodation	16.1%	14.6%	14.3%
Transport, storage and communication	3.2%	3.3%	1.5%
Finance, insurance, real estate and business services	9.2%	8.1%	6.2%
Community, social and personal services	15.5%	17.7%	18.1%
General Government	22.3%	18.6%	19.4%

Level of education:

Unknown

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 8776 364-00	
What is the expected yearly income that will be generated by or as a result of the activity?	R	
Will the activity contribute to service infrastructure?	YES	~~NO~~
Is the activity a public amenity?	YES	~~NO~~
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	12	
What is the expected value of the employment opportunities during the	R800 000-00	

development and construction phase?	
What percentage of this will accrue to previously disadvantaged individuals?	100%
How many permanent new employment opportunities will be created during the operational phase of the activity?	1
What is the expected current value of the employment opportunities during the first 10 years?	R 1 140 000-00
What percentage of this will accrue to previously disadvantaged individuals?	100%

- **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)~~	According to the Botanical Assessment (**Appendix D1**), the 2016 Northern Cape Critical Biodiversity Areas (NCCBA) gives both aquatic and terrestrial Critical Biodiversity Areas (CBAs) and ecological support areas for the Northern Cape. According to the NCCBA, the proposed development falls within an ecological support area (ESA)

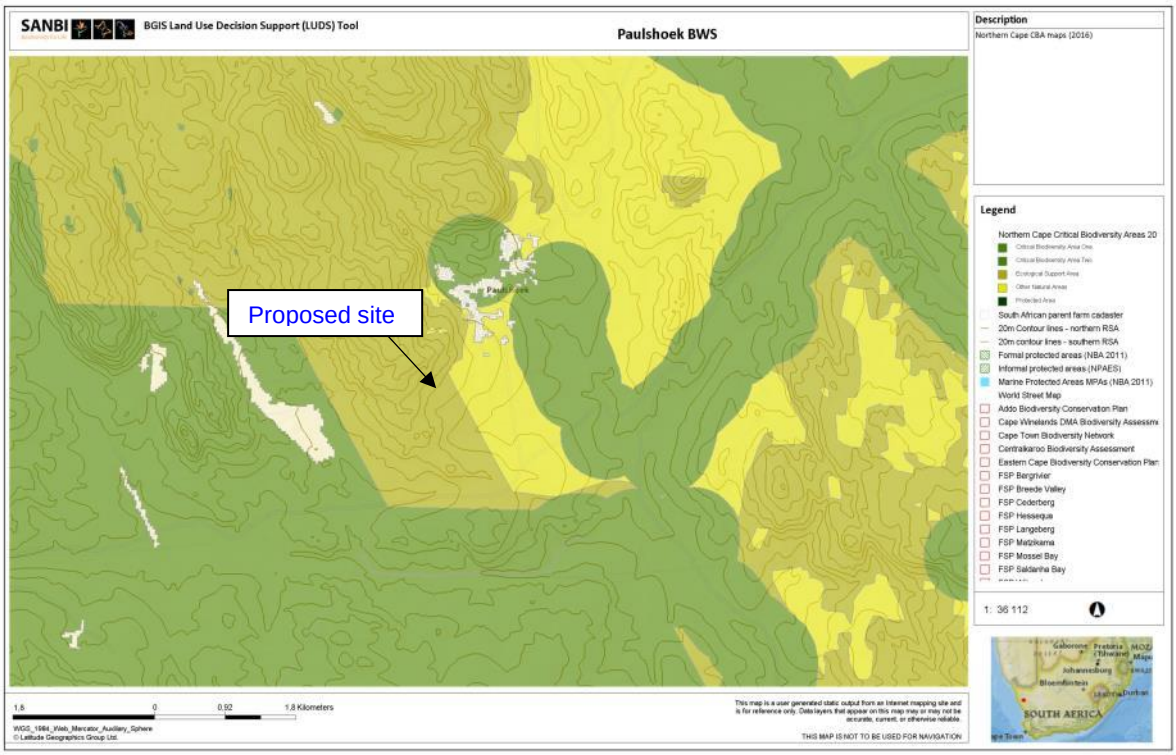

Figure 3: SANBI BGIS map of the Northern Cape Critical Biodiversity Areas (2016) showing the location of the proposed development site.

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 of alien invasive plants)	%	
Degraded (includes areas heavily invaded by alien plants)	100 %	According to the Botanical Assessment (**Appendix D1**), the larger development footprint falls within the Paulshoek settlement and show all the signs of being degraded as a result of overgrazing over a long period of time. Due to overgrazing and poor fire management regimes, complete destruction of natural vegetation is quite common around settlements in the region. In this case the veld that will be impacted can be described as degraded and is dominated by *Galenia africana* (Kraalbos) a well-known disturbance indicator.
Transformed	0%	

(includes cultivation, dams, urban, plantation, roads, etc)		

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.

<table>
<tr><th colspan="2">Terrestrial Ecosystems</th><th colspan="7">Aquatic Ecosystems</th></tr>
<tr><td rowspan="5">Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</td><td><s>Critical</s></td><td rowspan="2" colspan="3">Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)</td><td rowspan="2" colspan="2">Estuary</td><td rowspan="2" colspan="2">Coastline</td></tr>
<tr><td><s>Endangered</s></td></tr>
<tr><td><s>Vulnerable</s></td><td rowspan="3">Least Threatened</td></tr>
<tr><td><s>YES</s></td><td>NO</td><td><s>UNSURE</s></td><td><s>YES</s></td><td>NO</td><td><s>YES</s></td><td>NO</td></tr>
</table>

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)

The site would historically have been covered in Namaqualand Klipkoppe Shrubland (Least Threatened).

According to the Biodiversity Assessment (**Appendix D1**), the proposed Site 1 is located on almost level open sandy patch running east –west along the lower slopes of the low rocky hill to its north. The vegetation can be described as a sparse dwarf shrubland, representing a degraded form of Namaqualand Blomveld dominated by *Galenia africana* and *Eriocephalus* cf. *microphyllus* with *Lycium cinereum* and *Hermannia trifurca* also common. Vegetation cover was relatively low, usually between 20-40% and normally showed two stratums. The top stratum (about 60 cm in height) was dominated by the four species mentioned above, while the lower stratum reached about 20 cm in height. In general the site can be described as degraded with only hardy unpalatable shrubs left.

Other species encountered at Site 1 includes; *Aptosimum spinescens*, *Asparagus capensis*, *Crassula brevifolia* and *Crassula cotyledonis* (both plants normally associated with rocky outcrops along the edges of the site), the low growing form of the shrub *Searsia undulata*, a heavily grazed *Osteospermum* species and *Tylecodon wallichii* (usually also only encountered within the rocky outcrops to the south and east of the site). The very low species diversity is most probably the result of the impact of constant overgrazing. It is very likely that the site will support a number of geophytes and annual plants that were not visible at the time of the study, but they should only emphasise the degraded status of the veld.

According to the Biodiversity Assessment (**Appendix D1**), both sites overlaps already disturbed footprints located in a disturbed form of Namaqualand Blomveld (the result of continual overgrazing over a very long period of time). At present only very hardy unpalatable species remains at both sites.

From a botanical point of view, both sites overlaps disturbed open sandy areas, that can be described as degraded. Although both sites can be considered for development, Site 2 is floristically in slightly better shape (slightly less disturbed) than Site 1 and it overlaps a small seasonal drainage line (in its south-western corner) which will add to its potential significance. In both cases the development footprint should stay within the already disturbed sandy footprints, and away from the small drainage line.

There are no watercourses (streams or wetlands) on the preferred site (Site 1), or within 32m of Site 1. The closest watercourse is a small ephemeral stream located approximately 50m south of the site. The proposed development on Site 1 is therefore expected to have no direct impacts on this watercourse.

The same ephemeral stream does cut over a small portion of Site 2. However, due to the proposed size of the evaporation ponds, these can be located on the site without having a direct impact on the ephemeral stream.

SECTION C: PUBLIC PARTICIPATION

• ADVERTISEMENT AND NOTICE

Publication name	Die Plattelander	
Date published	03 November 2017	
Site notice position	**Latitude**	**Longitude**
Date placed	See Appendix E1	

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

• DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)

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.

• ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
No comments were received during the initial PPP period	
Only comment from SAHRA was received, requesting that an Archaeological Impact Assessment and Palaeontological Impact Assessment be conducted.	This was noted, and an Archaeological Impact Assessment and Palaeontological Letter of Exemption was compiled.

- **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.

- **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
NC Department of Agriculture & Land Reform	W. Mothibi (HOD)	(053)838 9102			Private Bag X5018, Kimberley, 8300
Department of Cooperative Governance, Human Settlements and Traditional Affairs (NC)	Gladys Botha	053 830 9513			Private bag X5005, Kimberley, 8300
Department of Roads and Public Works	K. Nogwili (HOD)	(053)839 2241			P O Box 3132, Kimberley, 8300
Directorate Forestry Management	J. Mans	054 338 5909			PO Box 2782, Upington, 8800
Department of Water and Sanitation	A. Abrahams	053 830 8803	053 831 4534		28 Central Road, Beaconsfield, Kimberley, 8301
Department of Water Affairs-Northern Cape	R. Mazwi	053 7731239			Private Bag X6101, Kimberley, 8300
SAHRA	Natasha Higgitt	021 462 4502			P.O.Box 4637, Cape Town, 8000

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.

- **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, 2014 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.

- **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: **Potential impact on freshwater ecosystems**	Insignificant and unlikely	No watercourses on the preferred site.
	Biodiversity impacts: Land-use and Cover: Possible impact on socio-economic activities as a result of the physical footprint or associated activities. Vegetation Status: Possible loss of vulnerable or endangered vegetation and associated habitat. Conservation Priority Areas: Possible impact on Protected areas, CBA, ESA or centres of endemism. Connectivity: Possible loss of identified terrestrial and aquatic critical biodiversity areas, ecological support areas or ecological corridors.	Insignificant Insignificant Insignificant Insignificant	- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must include these recommendations. - A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and any other conditions pertaining to specialist studies. - Site 1 should be the preferred site, with Site 2 as an alternative. Please note that during the site visit the author also identified a further potential option immediately to the east of the existing reservoir site (Refer to point 3 in Figure 8), which can also be considered (as it also shows the same disturbance footprint as encountered at Site 1). - Impacts on the small drainage line near the south-western corner of Site 2 should be avoided as it should be easy to fit the proposed

	Flora: Potential impact on threatened or protected plant species. Invasive Alien Species: Possible alien infestation as a result of activities. Veld Fire: The risk of veld fires as a result of the proposed activities.	Low Insignificant Low	evaporation ponds within the disturbed footprint without impacting on this feature. - An application must be made to DENC for a flora permit in terms of the NCNCA with regards to impacts on species protected in terms of the act. - Search & rescue operation must be implemented for individual plants that might be impacted as recommended in Table 3 (Page 21). - Access must be limited to routes approved by the ECO. - Before any work is done the site and access routes must be clearly demarcated (with the aim at minimal width/smallest footprint). The demarcation must include the total footprint necessary to execute the work, but must aim at minimum disturbance. - Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value (e.g. near the existing reservoir site) and must be pre-approved by the ECO. - Indiscriminate clearing of any area outside of the construction footprint must be avoided. - All areas impacted as a result of construction must be rehabilitated on completion of the project. • This includes the removal of all excavated material, spoil and rocks, all construction related material and all waste material. • It also included replacing the topsoil back on top of the excavation as well as shaping the area to represent the original shape of the environment. - An integrated waste management approach must be implemented during construction. • Construction related general and hazardous waste may only be disposed of at Municipal approved waste disposal sites.

			• All rubble and rubbish should be collected and removed from the site to a suitable registered waste disposal site.
	The loss of palaeontological resources	Insignificant	It is recommended that, pending the exposure of significant new fossils during development, exemption from further specialist palaeontological studies and mitigation be granted for this development. There are no objections on palaeontological heritage grounds to authorisation of the proposed bulk water supply development. Should any substantial fossil remains (*e.g.* vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za).
	The loss of archaeological resources	Insignificant	- The proposed development will not negatively impact on any significant archaeological resources, however it is recommended that site PLSK1 be formally recorded. - PLSK1 must not be impacted by the proposed development and a 20m buffer around the site must be implemented. - There is no heritage objection to the proposed development and neither site is preferred from a heritage perspective.
	Indirect impacts: **Temporary jobs will be created in the construction industry during the construction phase.**	Low - positive	No mitigation measures are required. Temporary jobs will be created during the construction phase
	Cumulative impacts: Biodiversity: Accumulative impact associated with the proposed activity.	Insignificant	

	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
Alternative 2			
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
Alternative 3			
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
No-go option			
	Direct impacts: This would mean that no-development would take place and the proposed site will remain as is. No new bulk water supply system will be constructed, and no new water supply will be created for the town of Paulshoek. Although this option would result in no potential negative environmental impacts, the socio-economic benefits from implementing the activity	Insignificant	N/A

	would not be achieved. The no-go option would only have been recommended if it were found that the construction of the proposed development on this site or in this area might potentially cause substantial detrimental harm to the environment. According to the Biodiversity Assessment (**Appendix D1**), the anticipated impacts will not occur, and the status quo will remain (livestock grazing as the main land use). In this case livestock grazing has already degraded the veld significantly.		
	Indirect impacts:		
	Cumulative impacts:		

A complete impact assessment in terms of Regulation 19(3) of GN 326 must be included as Appendix F.

• 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)

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

Construction phase.

Freshwater ecosystems **– None, unlikely.**

Loss of vegetation:

Land-use and Cover – **Negligible, Possible.**

Vegetation Status – **Negligible, unlikely.**

Conservation Priority Areas – **Negligible, unlikely.**

Connectivity – **Negligible, unlikely.**

Flora – **Negligible, possible.**

Invasive Alien Species – **Negligible, unlikely.**

Potential impacts on heritage resources – **Very Low, Unlikely.**

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

Noise impact - **Low (negative), definite, during construction phase.**

Visual impact – **Low (negative), definite, during construction**

Operational Phase

Geographical and/or physical aspects - **No impact expected**

Freshwater ecosystems **– No impact expected**

Potential impacts on archaeological heritage – **No impact expected**

Socio-economic (additional job opportunities) – **Low (Positive), Definite**

Noise impact – Very **Low, Possible**

Visual impact – **Low, Probable**

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)

This would mean that no-development would take place and the proposed site will remain as is. No new bulk water supply system will be constructed, and no new water supply will be created for the town of Paulshoek.

Although this option would result in no potential negative environmental impacts, the socio-economic benefits from implementing the activity would not be achieved.

The no-go option would only have been recommended if it were found that the construction of the proposed development on this site or in this area might potentially cause substantial detrimental harm to the environment.

According to the Biodiversity Assessment (**Appendix D1**), the anticipated impacts will not occur, and the status quo will remain (livestock grazing as the main land use). In this case livestock grazing has already degraded the veld significantly.

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	~~NO~~

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).

N/A

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.

Compliance with the EMP and recommendations of the specialists and appointment of an ECO during the construction phase.		
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