



**DRAFT BASIC ASSESSMENT FOR THE PROPOSED  
CONSTRUCTION OF A POTABLE WATER SUPPLY PIPELINES  
NEAR NOENIEPUT, NORTHERN CAPE.**

**July 2020**

**PREPARED FOR:**

**KALAHARI EAST WATER USERS ASSOCIATION**

**PREPARED BY:**

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Today's Impact | Tomorrow's Legacy

## EXECUTIVE SUMMARY

### Introduction and Background

BVI Consulting Engineers appointed Enviroworks, as an independent Environmental Assessment Practitioner (EAP) on behalf of Kalahari- East Water Users Association (The Applicant) to undertake the required Basic Assessment Process for the Noenieput potable water supply pipeline (hereafter referred to as the proposed project), Northern Cape Province.

The proposed project is a listed activity in terms of Sections 24(2) and 24(d) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) (as amended). The Environmental Impact Assessment (EIA) Regulations, 2017 promulgated in terms of Chapter 5 of the NEMA provide for the control of certain activities that are listed in Government Notice Regulations No. (GN R) No. R327, R325 and R324. Activities listed in these notices must comply with the regulatory requirements listed in GN R No. R326, which prohibits such activities until written authorisation is obtained from the Competent Authority. Such Environmental Authorisation, which may be granted subject to conditions, will only be considered once there has been compliance with the EIA regulations, 2017. GN R No. 326 sets out the procedure and documentation that need to be compiled with undertaking a Basic Assessment Report.

### Project Description

The Kalahari- East Users Association proposes the construction of a portable water supply pipeline (approximately 25km) near Noenieput, Northern Cape Province. The connection point will be at Noenieput where the water supply pipeline that is currently under construction terminates. The water will flow from the connection point at Noenieput to Swartkopdam. Connection points will be provided for small and commercial farmers along the pipeline route. The approximate usage per month is 0.9l/s at peak summer demand.

The pipeline material is UPVC of various pipe classes and diameters (110-160mm). The pipeline shall be installed in a trench with a minimum depth of six hundred millimetres (600 mm). At the two crossings of the Molopo River the pipe cover will be increased to one point metres (1.2 m) below the surface. Noenieput is located approximately one hundred and sixty kilometres (160km) north-west of Upington within the ZF Mgcau District Municipality in the Northern Cape Province.

### Legislative Context

*The proposed project constitutes the following listed activities in terms of the NEMA:*

Government Notice 327 of 2017: Listing Notice 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

**Activity 12:** The development of –

(xi) infrastructure or structures with a physical footprint of 100 m<sup>2</sup> or more; where such development occurs –

(c) if no development setback exists, within 32 m of a watercourse, measured from the edge of the watercourse.

Triggering reason: The proposed project will have a physical footprint of more than 100 m<sup>2</sup> and lies within 32 meters of a wetland.

**Activity 19:** The infilling or depositing of any material of more than 5 m<sup>3</sup> into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 m<sup>3</sup> from –

(i) a watercourse.

Triggering reason: Due to the nature of the proposed project, more than 5 m<sup>2</sup> of excavations will take place.

Government Notice 324 of 2017: Listing Notice 3 of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

**Activity 12:** The clearance of an area of 300 m<sup>2</sup> or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

**Activity 14:** The development of –

(xii) infrastructure or structures with a physical footprint of 10 m<sup>2</sup> or more,

where such infrastructure occurs –

(a) within a watercourse;

(c) if no development setback has been adopted, within 32 m of a watercourse, measured from the edge of the watercourse;

**National Heritage Resources Act, 1999 (Act No. 25 of 1999):**

Section 38(1): Subject to the provision of subsections (7), (8) and (9), any person who intends to undertake a development categorised as –

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length.

Triggering reason: The proposed project will cover a distance of 25 000 m

### **Specialist Studies**

#### **Heritage Impact Assessment:**

**The preferred alternative:** This alignment is preferred in terms of other environmental indicators and is preferred in terms of impacts to archaeological heritage resources as the archaeological resources identified along this alignment are of moderate to low local significance (Grade IIIB and Grade IIIC), and impacts to these resources can be mitigated. However, this alignment has very HIGH sensitivity in terms of impacts to significant palaeontological heritage with chances of poorly known Cambrian trace fossils in the Nababis Formation and such, is not preferred in terms of impacts to palaeontology.

**The alternative Site:** This alternative is not preferred in terms of impacts to archaeological heritage. The field assessment identified a number of significant archaeological resources of high local significance (Grade IIIA) within this alignment which must not be impacted by the proposed development. However, this alignment has LOW to MODERATE sensitivity for impacts to palaeontological heritage with a low chance of fossil remains in the Dwyka Tillites and a high chance of these being metamorphosed.

#### **Recommendations from the Heritage Specialist**

- Archaeologically speaking, proposed Alternative 1, the Swartkopdam alignment, is deemed the most feasible and provided that the recommended mitigations are implemented on sites that may be negatively impacted upon, there are no objections to the proposed development proceeding along the Swartkopdam alignment.
- It is recommended that a no-go buffer of 50 m from the edge of each site extent, be implemented for sites graded as IIIB.
- If it is not possible to avoid the sites mentioned above, they must be mitigated by a qualified archaeologist. A permit in terms of section 35 of the NHRA and Chapter II and IV of the NHRA Regulations must be applied for from SAHRA via SAHRIS before construction.

- We recommend the appointment of a Heritage officer to monitor development during the construction phase of the project to mitigate the impact on resources that may be uncovered by the excavation process. PHASE 1 AIA FIELD REPORT Proposed development of pipelines near Noenieput, Northern Cape Province
- From a heritage standpoint, proposed Alternative 2, the Noenieput alignment, is deemed NOT feasible and identified sites along this alignment are no-go areas.
- All the dunes within this area should be treated as sensitive zones and potential heritage sites and avoided where possible.
- The sites graded as IIIA and IIIB should be added to the heritage register.
- Although all possible care has been taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the assessment. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA.
- If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- UBIQUE Heritage Consultants and its personnel will not be held liable for such oversights or costs incurred as a result of such omissions.

Please refer to Appendix D for the Phase 1 Heritage Impact Assessment.

**Ecological Impact Assessment:**

A site visit took place on the 24 March 2020 to assess the Preferred Alternative. A walkthrough was done, assessing environmental conditions and pictures were taken of the environment and plant species. The site visits took place in late summer at the end of the rainy season, when most species were in flower. The weather conditions were accommodating, where clear visibility facilitated the inspection of the facility and surrounding vegetation.

The entire pipeline footprint could not be surveyed during the site visit. Instead, 100m transects were sampled every 2 km, and opportunistic observations were made at watercourses. This is thought to give a relatively good representative sample of the vegetation type and species that occurs within the proposed route footprint.

The proposed alternatives traverses two vegetation types, namely Kalahari Karroid Shrubland, alternating with *Gordonia Duneveld* (Figure 8) (ecological report). The distribution of the two vegetation types correspond with the Plant Species Theme in Figure 7 (ecological report). Thus, the Kalahari Karroid Shrubland is classified as having a medium plant sensitivity and *Gordonia Duneveld* has a low plant sensitivity. The Kalahari Karroid Shrubland vegetation type is distributed within the Northern Cape Province. It typically forms belts alternating with belts of *Gordonia Duneveld* on plains northwest of Upington through Lutzputs and Noenieput to the Rietfontein/Mier area in the north. Other patches occur around Kakamas and north of Groblershoop. The unit is also found in the neighbouring Namibia. Altitude varies mostly from seven hundred meters to one thousand one hundred meters (700 m –1 100 m). The unit is characterised by low karroid shrubland on flat, gravel plains. Karoo-related elements (shrubs) meet here with northern floristic elements, indicating a transition to the Kalahari region and sandy soils. The vegetation type is classified as Least Threatened. Very little of the unit is statutorily conserved in Augrabies Falls National Park. Although only a small area has been transformed many of the belts of this type were preferred routes for early roads, thus promoting the introduction of alien plants (about a quarter of the unit has scattered *Prosopis* species). Erosion potential is very low for this unit (Mucina et al., 2006)

### **Report Structure**

This report is set out as followed:

- **Section A:** Activity Description provides an overview of the development proposal and listed activities which are triggered in terms of listing notices GN R. 327 and R. 324; of the EIA Regulations, April 2017.
- **Section B:** Description of Receiving Environment provides detail on the affected landscape in its present state. A range of aspects relating to the biophysical (e.g. geology, soil surface and sub-surface water and biodiversity), socio-economic and historic and cultural character of the immediate route and surrounding area are described herein, whilst applicable legislation, policy and guidelines considered are recognised.

- **Section C:** Public Participation describes the consultation component of this study between the EAP and Interested or Affected Parties (I&APs) and organs of state. Regulatory requirements of this process are discussed, with a summary of consultation made with state departments and comments and response given. Comment periods were afforded to parties, with an initial registration period provided to parties.

- **Section D:** Impact Assessment, Management, Mitigation and Monitoring Measures, describe how the proposed development may impact on the geographical and physical, biodiversity, socio-economic and historical and cultural aspects of the receiving environment. Resource uses of the proposed development phases, attributed to waste and emissions, water use, power supply and energy efficiency are further discussed.

- **Section E:** Recommendation of the EAP provides, based on such findings as various site surveys, impact assessment, investigation of alternatives and the review of strategic policy to consider the needs and desirability, the outgoing opinion of the EAP is detailed. Any noteworthy recommendations emanating from the study are described here.

- **Section F:** Appendices lists of all supportive documents enclosed with this report, after which declarations of the Applicant, EAP and Specialist Parties are given.

### **Public Participation Process**

A comprehensive public participation will be undertaken to engage stakeholders and interested and affected parties on the development proposal. I&AP's will be informed of the Basic Assessment Process through an advertisement in the local newspaper and poster notices will be placed at strategic locations. The surrounding landowners will be informed of the project by means of the distribution of comment forms and the Basic Assessment Report (BAR), as well as relevant Organs of State.

This BAR will be made available for a 30 day comment period from 28 September 2020 to 28 October 2020. The Basic Assessment (BA) will also be available on Enviroworks website ([www.enviroworks.co.za](http://www.enviroworks.co.za)) and a link to Enviroworks website will be sent via email to all relevant stakeholders and organs of state.

### **EAP Recommendations**

- Personnel are not allowed to create any fires on site;
- It is important that all mitigation measures within the EMP are strictly adhere to;

- Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately and Heritage North West must be notified without delay;
- Prior to construction a walkthrough investigation to identify, map and translocate all protected plant species must be conducted;
- Translocation of indigenous species should not be done without permits from relevant Competent Authorities;
- Alien vegetation eradication program should be developed and implemented for the site to remove alien vegetation during all operational phases;
- Follow-up clearing and monitoring should be done to detect any new invasive species establishment and spread during operation and decommissioning. It is important that monitoring and control operations should extend into the surrounding natural grassland;
- Alien plant material removed during construction and eradication efforts should be contained and disposed of properly to limit accidental spread; and,
- Future expansion and construction activities should be limited to the smallest possible area.
- Archaeologically speaking, proposed Alternative 1, the Swartkopdam alignment, is deemed the most feasible and provided that the recommended mitigations are implemented on sites that may be negatively impacted upon, there are no objections to the proposed development proceeding along the Swartkopdam alignment.
- It is recommended that a no-go buffer of 50 m from the edge of each site extent, be implemented for sites graded as IIIB.
- If it is not possible to avoid the sites mentioned in the Heritage Impact Assessment Report, they must be mitigated by a qualified archaeologist. A permit in terms of section 35 of the NHRA and Chapter II and IV of the NHRA Regulations must be applied for from SAHRA via SAHRIS before construction.
- We recommend the appointment of a Heritage officer to monitor development during the construction phase of the project to mitigate the impact on resources that may be uncovered by the excavation process. PHASE 1 AIA FIELD REPORT Proposed development of pipelines near Noenieput, Northern Cape Province
- From a heritage standpoint, proposed Alternative 2, the Noenieput alignment, is deemed NOT feasible and identified sites along this alignment are no-go areas.



- All the dunes within this area should be treated as sensitive zones and potential heritage sites and avoided where possible.
- The sites graded as IIIA and IIIB should be added to the heritage register.
- Although all possible care has been taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the assessment. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA.
- If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- UBIQUE Heritage Consultants and its personnel will not be held liable for such oversights or costs incurred as a result of such omissions.

Christoff du Plessis reviewed and assisted with the project.



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**Thandeka Moabi**

**Relevant Qualifications**

**B.A Geography and Environmental Management:** University of the Free State (2016)

**Environmental Impact Assessment for Practitioners:** North West University (Centre for Environmental Management) (2018)

**B.A Hons in Environmental Management:** University of South Africa (in progress)

**Work Experience**

August 2018 – Present                      Environmental Consultant at Enviroworks

AIAI:6277

**Key Project Experience**

**Basic Assessment Experience**

- Hydroponics Project, LMC Farms, North West Province
- The periodic maintenance of tr1/2, tr1/3, tr44/1, tr88/1, mr401 and mr402, near Uniondale, Western Cape Province
- Willie Bheaurrain Composting Facility, Gauteng Province
- Potable water pipelines, Kalahari East Water Users Association, Noenieput, Northern Cape

**Environmental Control Officer (ECO)**

- Vista Park ECO Inspections, Bloemfontein

**Experience in Permits and Licencing**

- Water Use License for BloemSkou, Bloemfontein, Free State.

- Water Use License for LMC Farms, Hydroponics Project, Molote City, North West.
- Water Use License for ClinVet International Pty (Ltd), Free State Province
- Water Use License for Peppadew International (pty), Limpopo Province
- Water Use License for Kalahari East Water Users Association, potable water pipelines, Northern Cape

**Environmental Management Plans**

- Lafarge Olive Hill Quarry EMP Review

## ACRONYMS AND ABBREVIATIONS

<b>BA</b>	–	Basic Assessment
<b>BAR</b>	–	Basic Assessment Report
<b>CBA</b>	–	Critical Biodiversity Area
<b>DEA</b>	–	Department of Environmental Affairs
<b>EAP</b>	–	Environmental Assessment Practitioner
<b>ECO</b>	–	Environmental Compliance Officer
<b>EIA</b>	–	Environmental Impact Assessment
<b>EMF</b>	–	Environmental Management Framework
<b>EMPr</b>	–	Environmental Management Programme
<b>ESA</b>	–	Ecological Support Area
<b>GN R</b>	–	Government Notice Regulation
<b>I&amp;AP</b>	–	Interested & Affected Party
<b>IDP</b>	–	Integrated Development Plan
<b>LED</b>	–	Local Economic Development
<b>LM</b>	–	Local Municipality
<b>NDT</b>	–	National Department of Tourism
<b>NEM: PAA</b>	–	National Environmental Management: Protected Areas Act
<b>NEM: WA</b>	–	National Environmental Management: Waste Act
<b>NEMA</b>	–	National Environmental Management Act
<b>NHRA</b>	–	National Heritage Resources Agency
<b>NWA</b>	–	National Water Act
<b>PSDF</b>	–	Provincial Spatial Development Framework
<b>SAHRA</b>	–	South African Heritage Resources Agency
<b>SANRAL</b>	–	South African National Roads Agency Limited
<b>SAPS</b>	-	South African Police Service
<b>SDF</b>	–	Spatial Development Framework

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## BASIC ASSESSMENT REPORT



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Environment & Nature Conservation  
NORTHERN CAPE PROVINCE  
REPUBLIC OF SOUTH AFRICA

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(For official use only)

File Reference Number:	<input type="text"/>
Application Number:	<input type="text"/>
Date Received:	<input type="text"/>

**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.**

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**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, 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.
2. This report format is current as of 07 April 2017. 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.



## Section A: Activity information

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

YES X

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

### 1. ACTIVITY DESCRIPTION

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

##### Introduction and Background

BVI Consulting Engineers appointed Enviroworks, as an independent Environmental Assessment Practitioner (EAP) on behalf of Kalahari- East Water Users Association (The Applicant) to undertake the required Basic Assessment Process for the Noenieput water pipelines construction (hereafter referred to as the proposed project), Northern Cape Province.

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The pipeline material is UPVC of various pipe classes and diameters (110-160mm). The pipeline shall be installed in a trench with at least 600mm cover above the pipe. At the two crossings of the



Triggering reason: The proposed project will have a physical footprint of more than 100 m<sup>2</sup> and lies within 32 meters of a wetland.

**Activity 19:** The infilling or depositing of any material of more than 5 m<sup>3</sup> into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 m<sup>3</sup> from –

(i) a watercourse.

Triggering reason: Due to the nature of the proposed project, more than 5 m<sup>3</sup> of excavations will take place.

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**Activity 12:** The clearance of an area of 300 m<sup>2</sup> or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

**Activity 14:** The development of –

(xii) infrastructure or structures with a physical footprint of 10 m<sup>2</sup> or more, where such infrastructure occurs –

(a) within a watercourse;

(c) if no development setback has been adopted, within 32 m of a watercourse, measured from the edge of the watercourse;

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

Listed activity as described in GN 327, 325 and 324	Description of project activity
<b>Listing Notice 1</b>	
<b>Activity 12</b> infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs— (a) within a watercourse;	The proposed project will have a footprint of more than 100 square metres.
<b>Listing Notice 3</b>	
<b>Activity 12</b> The clearance of an area of 300 square metres or more of indigenous vegetation	The proposed project has a footprint of more than 300 square meters
<b>Northern Cape:</b>	

## BASIC ASSESSMENT REPORT

<p><b>Activity 14</b></p> <p>The development of –</p> <p style="padding-left: 20px;">(xii) infrastructure or structures with a physical footprint of 10 square meters or more:</p> <p style="padding-left: 40px;">(a) within a watercourse</p>	<p>The proposed project has a footprint of more than 10 square meters and situated within a watercourse.</p>
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### 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
- (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

**Alternative 1 (preferred alternative) As it is a linear activity no site alternatives were investigated or are applicable**

In the case of linear activities:

Alternative:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
• Starting point of the activity	27° 30' 47.44" S	20° 8' 17.38" E
• Middle/Additional point of the activity	27° 37' 46.35" S	20° 6' 36.17" E
• End point of the activity	27° 40' 16.90" S	20° 12' 41.88" E

## BASIC ASSESSMENT REPORT

### Alternative S2 (if any)

• Starting point of the activity	27° 30' 44.91" S	20° 8' 28.74" E
• Middle/Additional point of the activity	27° 35' 43.12" S	20° 14' 21.35" E
• End point of the activity	27° 40' 19.15" S	20° 12' 49.74" E

### Alternative S3 (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

<b>Alternative 1 (preferred alternative)</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
Start Point (Noenieput)	27° 30' 47.44" S	20° 8' 17.38" E
End Point (Swartkopdam)	27° 40' 16.90" S	20° 12' 41.88" E
<b>Alternative 2</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
Start Point (Noenieput)	27° 30' 44.91" S	20° 8' 28.74" E
End Point (Swartkopdam)	27°40' 19.15" S	20°12'49.74" E
<b>Alternative 3</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)

### c) Technology alternatives

<b>Alternative 1 (preferred alternative)</b>
The water will flow from the connection point at Noenieput to Swartkopdam. Connection points will be provided for small and commercial farmers along the pipeline route. The approximate usage per month is 0.9 l/s at peak summer demand. The pipeline material is UPVC of various pipe classes and diameters (110-160mm). The pipeline shall be installed in a trench with at least 600mm cover above the pipe.
<b>Alternative 2</b>
Alternative 2 consists of using steel piping, Steel piping is not a preferred alternative due to the fact that it is more expensive, and more maintenance is required to prevent corrosion.

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

**e) No-go alternative**

The no-go option will result in the non-construction of the potable water supply pipeline. Noenieput and Swartkopdam are totally dependent on groundwater for water supply, which is unsuitable in terms of quality and quantity. The boreholes cannot meet the summer peak demand and the quality of the water is detrimental to the health of the communities. Both commercial and small-scale farmers will not be able to survive another summer season without adequate and sustainable water resources. The past droughts and inadequate rainfall had a detrimental effect on grazing resources and stock loss will be inevitable. Due to the aforementioned, the no-go alternative is not considered to be a viable alternative.

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

**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 A1<sup>1</sup> (preferred activity alternative)  
 Alternative A2 (if any)  
 Alternative A3 (if any)

**Size of the activity:**

N/A
N/A
N/A

or, for linear activities:

**Alternative:**

Alternative A1 (preferred activity alternative)  
 Alternative A2 (if any)  
 Alternative A3 (if any)

**Length of the activity:**

+/- 25 000 Km
23 000 Km
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)

**Size of the site/servitude:**

37 500 m <sup>2</sup>
34 500 m <sup>2</sup>

**4. SITE ACCESS**

Does ready access to the site exist?

YES	
X	

<sup>1</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

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

N/A

Describe the type of access road planned:

N/A

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). **Please Refer to Appendix A**

## 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 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.

## 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):

<b>1. Is the activity permitted in terms of the property's existing land use rights?</b>	YES X		Please explain
The proposed project is permitted in terms of the property land use rights.			
<b>2. Will the activity be in line with the following?</b>			
<b>(a) Provincial Spatial Development Framework (PSDF)</b>	YES X		Please explain
Bulk water supply and energy distribution are the main priorities according to the PSDF. Basic infrastructure includes ensuring efficient supply of water. Therefore, the proposed project is in line with the PSDF.			
<b>(b) Urban edge / Edge of Built environment for the area</b>	YES X		Please explain
A part of the project will traverse through the urban edge of Noenieput, However, the majority of the footprint is situated outside of the urban edge of Noenieput.			



BASIC ASSESSMENT REPORT

<p><b>(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?).</b></p>	<p>YES X</p>		<p>Please explain</p>
<p>According to the David Kruiper SDF the establishment or procurement, where appropriate, operation, management, and regulation of a potable water supply system, including the services and infrastructure required for the regulation of water conservation, purification, reticulation, and distribution.</p>			
<p><b>(d) Approved Structure Plan of the Municipality</b></p>	<p>YES X</p>		<p>Please explain</p>
<p>The proposed project is in line with the structure plan of the local municipality as it is a collaboration between the Local Municipality and the water board/association.</p>			
<p><b>(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?)</b></p>	<p>YES X</p>		<p>Please explain</p>
<p>The Environmental Management Framework could not be obtained.</p>			
<p><b>(f) Any other Plans (e.g. Guide Plan)</b></p>		<p>NO X</p>	<p>Please explain</p>
<p>N/A</p>			
<p><b>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)?</b></p>	<p>YES X</p>		<p>Please explain</p>
<p>The proposed project, however, is listed as a priority in the IDP and SDF of the Dawid Kruiper Local Municipality, due to the fact that it will contribute to service delivery.</p>			
<p><b>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.)</b></p>	<p>YES X</p>		<p>Please explain</p>
<p>The proposed project will benefit the farmers and the village of Swartkopdam; therefore, it is a societal priority.</p>			

BASIC ASSESSMENT REPORT

<p><b>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.)</b></p>	<p>YES X</p>		<p>Please explain</p>
<p>The proposed project will contribute to the Dawid Kruiper Local Municipality service delivery infrastructure. The farmers and the village of Swartkopdam currently have challenges concerning water supply. The connection point will be at Noenieput where the water supply pipeline that is currently under construction terminates. The water will flow from the connection point at Noenieput to Swartkopdam. Connection points will be provided for small and commercial farmers along the pipeline route. The approximate usage per month is 0.9l/s at peak summer demand. The pipeline material is UPVC of various pipe classes and diameters (110-160mm). The pipeline shall be installed in a trench with at least 600mm cover above the pipe.</p> <p>Challenges faced include:</p> <p>Noenieput and Swartkopdam are totally dependent on groundwater for water supply, which is unsuitable in terms of quality and quantity. The boreholes cannot meet the summer peak demand and the quality of the water is detrimental to the health of the communities. Both commercial and small-scale farmers will not be able to survive another summer season without adequate and sustainable water resources. The past droughts and inadequate rainfall had a detrimental effect on grazing resources and stock loss will be inevitable</p>			
<p><b>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.)</b></p>	<p>YES X</p>		<p>Please explain</p>
<p>The Dawid Kruiper Local Municipality listed portable water supply as a priority. The proposed project will ensure that water is supplied for the local farmers and the Swartkopdam village.</p>			
<p><b>7. Is this project part of a national programme to address an issue of national concern or importance?</b></p>	<p>YES X</p>		<p>Please explain</p>
<p>Service delivery is a priority as most the farmers and villages have the challenge of portable water supply. Therefore, the proposed project is part of a national plan and falls under the SIP 17 projects.</p>			
<p><b>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.)</b></p>	<p>YES X</p>		<p>Please explain</p>
<p>The connection point will be at Noenieput where the water supply pipeline that is currently under construction terminates. The water will flow from the connection point at Noenieput to Swartkopdam. Connection points will be provided for small and commercial farmers along the pipeline route.</p>			

BASIC ASSESSMENT REPORT

<b>9. Is the development the best practicable environmental option for this land/site?</b>	YES X		Please explain
Ecological Sensitivity is low, the area is already disturbed and there is no other development within the road reserve.			
<b>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</b>	YES X		Please explain
Benefits associated with the proposed project include an increase in bulk water supply for the local level. The area is already disturbed due to existing road.			
<b>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</b>		NO	Please explain
The proposed project will contribute to basic service delivery of water and will not generate an income. Thus, it won't set a precedent in the area.			
<b>12. Will any person's rights be negatively affected by the proposed activity/ies?</b>		NO	Please explain
The proposed project will contribute to basic service delivery.			
<b>13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</b>	YES	NO	Please explain
The proposed project will supply potable water from Noenieput to Swartkopdam, the pipelines for the project are situated outside the urban edge.			
<b>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</b>	YES	NO	Please explain
<b>15. What will the benefits be to society in general and to the local communities?</b>	Please explain		
The proposed project will contribute to basic service delivery of potable water to the farmers along the route and the village of Swartkopdam.			
<b>16. Any other need and desirability considerations related to the proposed activity?</b>	Please explain		
New employment opportunities will be created.			
<b>17. How does the project fit into the National Development Plan for 2030?</b>	Please explain		
The National Development Plan aims to improve the quality of public services as this is critical to achieving transformation. This will require provinces to focus on identifying and overcoming the obstacles to achieving improved outcomes, including the need to strengthen the ability of local government to fulfil its developmental role.			

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

Through the undertaking of a Basic Assessment Process by a competent EAP, informed by guidelines, the consideration of impacts and alternatives (advantages and disadvantages coupled thereto) has been made. Moreover, the conducting of public participation and specialist investigations form part of the process, whilst mitigation measures and the need and desirability of the proposed project were interrogated. This ensured that all provisions of the Act were considered and as such Integrated Environmental Management were accounted for.

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

Through the undertaking of a Basic Assessment process by a competent EAP, informed by guidelines, the consideration of impacts and alternatives (advantages and disadvantages coupled thereto) has been made. Moreover, the conducting of a public participation process and specialist investigations formed part of this basic assessment process, whilst mitigation measures and the needs and desirability of the proposed project were interrogated. This ensured that all provisions of the Act were considered and as such integrated environmental management were accounted for as follow:

*(2) Environmental Management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural heritage and social interests equitably.*

The goal of this BA is to identify and mitigate potential socio-economic impacts in order to meet the terms of Section 24 of the Constitution.

*(3) Development must be socially, environmentally and economically sustainable.*

The overall goal of this BA is to predict, identify and manage potential positive and negative impacts in the socio-economic, cultural-heritage and biophysical environments in order to meet the needs of present generations without compromising the needs of future generations which will give effect to sustainable development.

*(4)(a) Sustainable development requires the consideration of all relevant factors including the following:*

- i. That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*
- ii. that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*
- iii. that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;*
- iv. that waste is avoided, or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;*
- v. that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;*
- vi. that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;*
- vii. that a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and*
- viii. that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.*

Specialists were appointed to undertake, Ecological, Palaeontological and Archaeological Impact Assessments as part of this Basic Assessment Process to consider all impacts relating to the above.

An Environmental Management Program Report (EMPr) was compiled to mitigate and manage all activities during the planning, construction and operational phases.

*(b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.*

All aspects, including socio-economic, cultural-heritage and biophysical was evaluated and assessed in order to minimize potential negative impacts which will give effect to Integrated Environmental Management, as set out in Chapter 5 of NEMA, 1998.

*(c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.*

A public participation process will be undertaken in terms of Section 41 of the NEMA EIA Regulations, which came into effect on 4 December 2014, in order to give effect to Section 32 of the Constitution in such a way that adherence is given to Section 24 of the Constitution.

*(d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.*

The proposed project will contribute to service delivery to meet basic human needs.

*(e) Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.*

The EMPr will be applicable throughout the lifecycle of the project.

*(f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.*

A public participation process will be undertaken in terms of Section 41 of the NEMA EIA Regulations, which came into effect on 4 December 2014, in order to give effect to Section 32 of the Constitution in such a way that adherence is given to Section 24 of the Constitution.

*(g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.*

The Department of Environment and Nature Conservation (DENC) decision making process has to be in accordance with the above.

*(h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.*

*(i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.*

This BAR does give effect to Section 5 of NEMA whereby all social, economic and environmental impacts of activities were considered, assessed and evaluated.

*(j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.*

Human rights will be taken into account during all phases of the proposed project.

*(k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.*

The decision will take place in an open and fair manner and to give effect to Section 32 of the Constitution. I&AP's will be notified of the decision in terms of the requirements as set out in Section 41 of the NEMA EIA Regulations, 2014.

*(l) There must be intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment.*

All Governmental Authorities will be considered during the BA process to give their inputs on the project.

*(m) Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedure.*

*(n) Global and international responsibilities relating to the environment must be discharged in the national interest.*

The proposed project will contribute to local service delivery. Potable water will be pumped from the Noenieput take-off to the Swartkopdam.

*(o) The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.*

It is not foreseen that any cultural-heritage resources will be affected by the proposed project. The appropriate Heritage Specialists were appointed to undertake Impact Assessments in this field.

*(p) The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.*

An EMPr were compiled in order to prevent or minimize any potential negative impacts to the environment. It will be the responsibility of the Applicant and Contractor to adhere to all measures set out in the EMPr, in order to give effect to Section 28 (1) of NEMA.

*(q) The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.*

*(r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.*

An Ecologist was appointed to undertake an Ecological Impact Assessment in which all possible impacts on wetlands, rivers and ecosystems were assessed and mitigation measures will be implemented. Refer to the **EMP-r in Appendix G** of this report.

## 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:



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Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act (Act No. 107 of 1998)	The proposed project triggers listed activities which may not commence without authorisation as stipulated in Section 24 (2)(a) of The National Environmental Management Act.	The Department of Environment and Nature Conservation, Northern Cape.	1998
Environmental Impact Assessment Regulations 2014 promulgated in terms of Section 24(5) of NEMA	The proposed project triggers activities that would require environmental authorisation as set out in GN R No. 327 and GN R No. 324.	The Department of Environment and Nature Conservation, Northern Cape.	2017
National Heritage Resources Act (Act No. 25 of 1999)	The proposed project will exceed 300 metres in length as stipulated in Section 38 (1)(a) of the National Heritage Resources Act.	South African Heritage Resource Agency (SAHRA)	1999
National Water Act (Act 36 of 1998)	The proposed project will traverse within a radius of 32 metres from wetlands.	The Department of Water and Sanitation (DWS).	1998
Dawid Kruiper Local Municipality Northern Cape Province Spatial Development Framework (2017-2022) (SDF)	The need for the proposed project is described in Section 5.3: Water Infrastructure in the SDF.	Dawid Kruiper Local Municipality, Northern Cape Province.	2017-2022
Dawid Kruiper Local Municipality Northern Cape Province Integrated Development Framework (2017-2022)	The proposed project forms part of key service delivery risks that need to be addressed.	Dawid Kruiper Local Municipality, Northern Cape Province.	2017 - 2022
National Environmental Management: Biodiversity Act (Act No. 10 of 2004)		The Department of Environment and Nature Conservation, Northern Cape.	2004

**12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT**

**a) Solid waste management**

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

YES	<input type="checkbox"/>
X	<input checked="" type="checkbox"/>
If YES, what estimated quantity will be produced per month?	
	10 m <sup>3</sup>

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

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

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Solid Waste generated on site during the construction phase will be collected on site and be disposed of at a registered landfill site. This will be included in the EMPr.

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

At a registered landfill site.

Will the activity produce solid waste during its operational phase?

	NO
	X
	N/A

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

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

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.*

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

	NO
	X

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?

	NO
	X

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?

	NO
	X

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

m<sup>3</sup>

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

	NO
	X

*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.*

## BASIC ASSESSMENT REPORT

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

	NO X

If YES, provide the particulars of the facility:

<b>Facility name:</b>	N/A		
<b>Contact person:</b>			
<b>Postal address:</b>			
<b>Postal code:</b>			
<b>Telephone:</b>		<b>Cell:</b>	
<b>E-mail:</b>		<b>Fax:</b>	

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

N/A as the proposed development will provide potable water to farmers and communities.

### c) Emissions into the atmosphere

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

	NO X
N/A	

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

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?

	NO X
--	---------

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 X	
	NO X

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

Describe the noise in terms of type and level:

---

Noise impacts will be limited to the construction phase. The level of noise generated will be temporary and is anticipated not to be significant.

The sources of noise includes:

- Establishment of the construction camp site;
- Delivery of materials to the construction camp site;
- Movement of heavy vehicles; and
- Excavation of trenches for the potable pipes

### 13. WATER USE

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

Municipal X	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:

N/A	
YES X	

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.

**Note:** The project requires a permit from the Department of Water and Sanitation (DWS) for construction within 500m from a wetland. An application will be submitted to DWS.

### 14. ENERGY EFFICIENCY

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

The proposed project will not use electricity.

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:**

1. 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):

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section?  YES  X

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:**

<b>Province</b>	Northern Cape
<b>District Municipality</b>	ZF Mgcawu District Municipality
<b>Local Municipality</b>	Dawid Kruiper Local Municipality
<b>Ward Number(s)</b>	
<b>Farm name and number</b>	Farm Witkop No. 350 Portions, 2,3,4,5,18,28&29 Farm Abiquas Arr No.352 Portions 1,2,3,5,8 & 9
<b>Portion number</b>	Farm Witkop No. 350 Portions, 2,3,4,5,18,28&29 Farm Abiquas Arr No.352 Portions 1,2,3,5,8 & 9
<b>SG Code</b>	See attached the list

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:**

The proposed project will transverse through land zoned as agricultural 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?  NO  X

## BASIC ASSESSMENT REPORT

### 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

#### Alternative S1:

Flat	1:50 – 1:20 X	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"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input checked="" type="checkbox"/>
2.10 At sea	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
		2.8 Dune	<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)	YES		YES		YES
Dolomite, sinkhole or doline areas		NO		NO	NO
Seasonally wet soils (often close to water bodies)	YES		YES		YES
Unstable rocky slopes or steep slopes with loose soil		NO		NO	YES
Dispersive soils (soils that dissolve in water)		NO		NO	YES
Soils with high clay content (clay fraction more than 40%)		NO		NO	YES
Any other unstable soil or geological feature		NO		NO	YES
An area sensitive to erosion		NO		NO	YES

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

If any of the boxes marked with an “<sup>E</sup>” 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 X	
Non-Perennial River		NO X	
Permanent Wetland		NO X	
Seasonal Wetland	YES X		
Artificial Wetland	YES X		
Estuarine / Lagoonal wetland		NO X	

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

The watercourses delineated during the desktop and subsequent field assessment revealed small drainage lines and depression pans. Watercourses were only identified within a 100m buffer from the proposed pipeline, in order to determine where crossings with watercourses will occur. No surface water was present in the pans or drainage lines, despite evidence of recent rains.

### 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 <sup>H</sup>
Medium density residential	School	Landfill or waste treatment site

## BASIC ASSESSMENT REPORT

High density residential	Tertiary education facility	Plantation
Informal residential	Church	Agriculture
Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant <sup>A</sup>	Nature conservation area
Medium industrial <sup>AN</sup>	Train station or shunting yard <sup>N</sup>	Mountain, Koppie or ridge
Heavy industrial <sup>AN</sup>	Railway line <sup>N</sup>	Museum
Power station	Major road (4 lanes or more) <sup>N</sup>	Historical building
Office/consulting room	Airport <sup>N</sup>	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam <sup>A</sup>	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:

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

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  
X



## BASIC ASSESSMENT REPORT

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Section 38(1): Subject to the provision of subsections (7), (8) and (9), any person who intends to undertake a development categorised as –

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length.

Triggering reason: The proposed project will cover a distance of 25 000 m

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:

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UBIQUE Heritage Consultants inspected the proposed development corridors and surrounding areas on the 20th and 21st of January 2020. The areas surveyed for the impact assessment was dictated by the Google Earth maps of the development footprints provided by the client, as well as the Heritage Screener compiled by CTS Heritage. The two pipeline routes were surveyed from Noenieput towards Swartkopdam. The access point for the surveys was 27° 30' 42.49" E; 20° 08' 16.36" S. All the study areas were surveyed in transects of approximately 30 - 50m where possible. The development corridors were surveyed on foot and by 4x4 vehicle by a team of two experienced surveyors.

The archaeological survey was done with no substantial attempt to clear brush, sand, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures fortuitously observed. report covers the survey of the two alternative pipeline routes proposed. These routes are referred to in this report as the Noenieput alignment and the Swartkopdam alignment (see Fig.1)

**The preferred alternative:** This alignment is preferred in terms of other environmental indicators and is preferred in terms of impacts to archaeological heritage resources as the archaeological resources identified along this alignment are of moderate to low local significance(Grade IIIB and Grade IIIC), and impacts to these resources can be mitigated. However, this alignment has very HIGH sensitivity in terms of impacts to significant palaeontological heritage with chances of poorly known Cambrian trace fossils in the Nababis Formation and such, is not preferred in terms of impacts to palaeontology.

**The alternative Site:** This alternative is not preferred in terms of impacts to archaeological heritage. The field assessment identified a number of significant archaeological resources of high local significance (Grade IIIA) within this alignment which must not be impacted by the proposed development. However, this alignment has LOW to MODERATE sensitivity for impacts to palaeontological heritage with a low chance of fossil remains in the Dwyka Tillites and a high chance of these being metamorphosed.

### Recommendations

- Archaeologically speaking, proposed Alternative 1, the Swartkopdam alignment, is deemed the most feasible and provided that the recommended mitigations are implemented on sites that may be negatively impacted upon, there are no objections to the proposed development proceeding along the Swartkopdam alignment.
- It is recommended that a no-go buffer of 50 m from the edge of each site extent, be

implemented for sites graded as IIIB.

- If it is not possible to avoid the sites mentioned above, they must be mitigated by a qualified archaeologist. A permit in terms of section 35 of the NHRA and Chapter II and IV of the NHRA Regulations must be applied for from SAHRA via SAHRIS before construction.
- We recommend the appointment of a Heritage officer to monitor development during the construction phase of the project to mitigate the impact on resources that may be uncovered by the excavation process. PHASE 1 AIA FIELD REPORT Proposed development of pipelines near Noenieput, Northern Cape Province
- From a heritage standpoint, proposed Alternative 2, the Noenieput alignment, is deemed NOT feasible and identified sites along this alignment are no-go areas.
- All the dunes within this area should be treated as sensitive zones and potential heritage sites and avoided where possible.
- The sites graded as IIIA and IIIB should be added to the heritage register.
- Although all possible care has been taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the assessment. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA.
- If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;
- UBIQUE Heritage Consultants and its personnel will not be held liable for such oversights or costs incurred as a result of such omissions.

Please refer to Appendix D for the Phase 1 Heritage Impact Assessment.

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

	NO X
YES X	

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

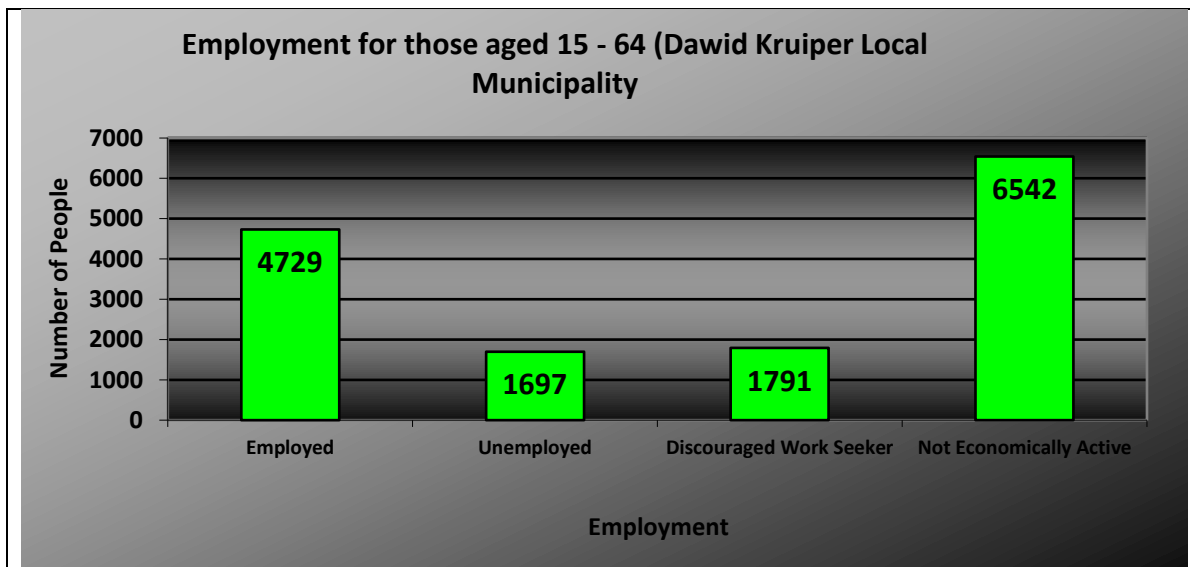
If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

8. SOCIO-ECONOMIC CHARACTER

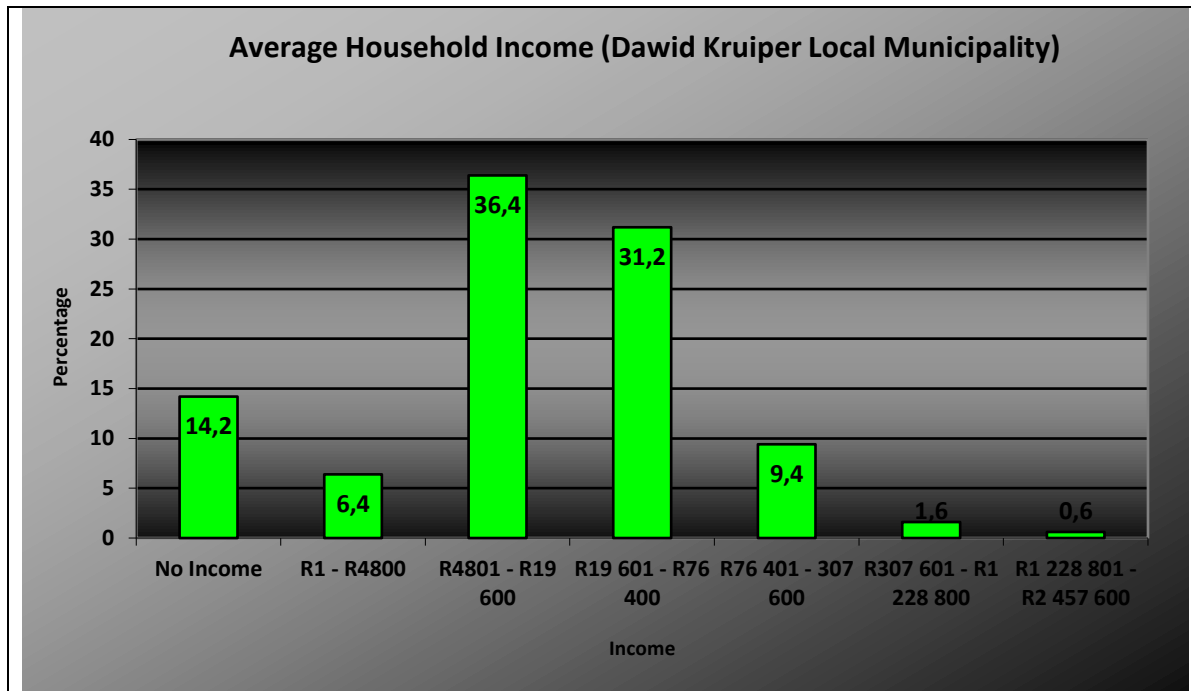
a) Local Municipality

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

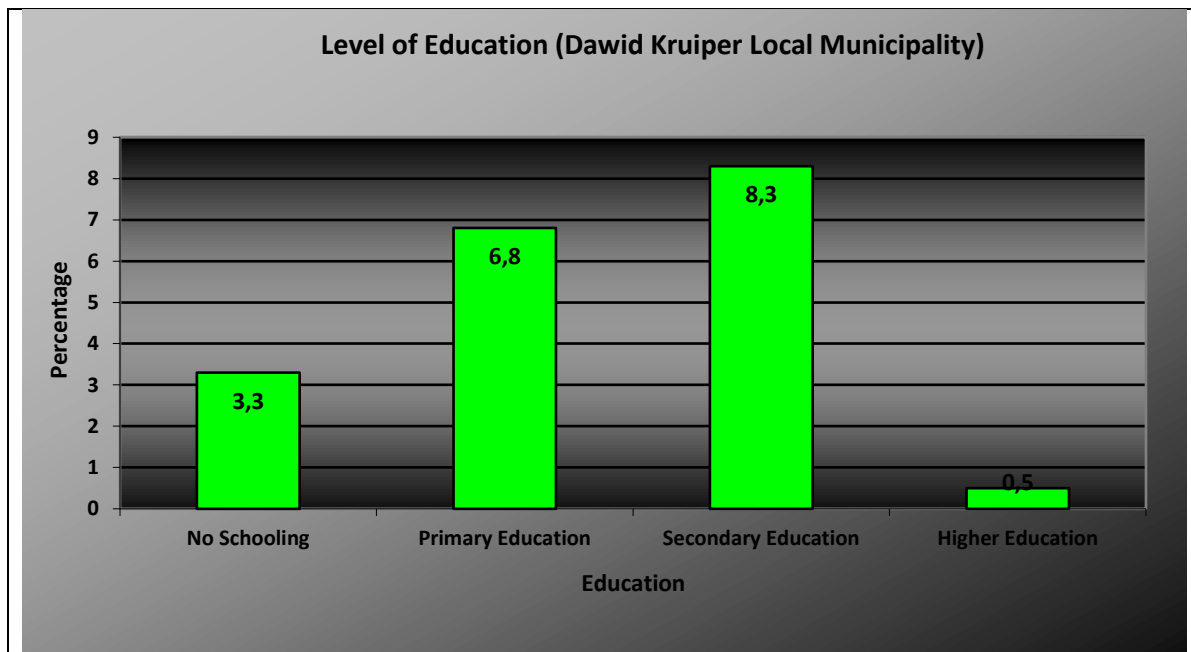
Level of unemployment:



Economic profile of local municipality:



Level of education:



**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?

R 10 million	
R420k	
YES	
YES	

## BASIC ASSESSMENT REPORT

How many new employment opportunities will be created in the development and construction phase of the activity/ies?	20
What is the expected value of the employment opportunities during the development and construction phase?	R6 million
What percentage of this will accrue to previously disadvantaged individuals?	50%
How many permanent new employment opportunities will be created during the operational phase of the activity?	5
What is the expected current value of the employment opportunities during the first 10 years?	R6 million
What percentage of this will accrue to previously disadvantaged individuals?	50%

### 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](mailto: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)	N/A
				N/A
				N/A

- 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	50%	The proposed alternatives traverses two vegetation types, namely Kalahari Karroid Shrubland, alternating with Gordonia Duneveld (Figure 8). The distribution of the two vegetation types correspond with the Plant Species Theme in Figure 7. Thus the Kalahari Karroid Shrubland is classified as having a medium plant sensitivity and Gordonia Duneveld has a low plant sensitivity.
Near Natural	30%	The vegetation type is classified as Least Threatened. Very little of the unit is statutorily conserved in Augrabies Falls

**BASIC ASSESSMENT REPORT**

(includes areas with low to moderate level of alien invasive plants)		National Park. Although only a small area has been transformed many of the belts of this type were preferred routes for early roads, thus promoting the introduction of alien plants (about a quarter of the unit has scattered Prosopis species).
Degraded (includes areas heavily invaded by alien plants)	40%	The proposed site is situated in an already disturbed area; therefore, it is degraded, and it has low ecological impacts.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	80 %	The proposed site is situated next to a reserved gravel road and there are farms nearby and artificial wetlands.

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

- 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)**



A site visit took place on the 24 March 2020 to assess the Preferred Alternative. A walkthrough was done, assessing environmental conditions and pictures were taken of the environment and plant species. The site visits took place in late summer at the end of the rainy season, when most species were in flower. The weather conditions were accommodating, where clear visibility facilitated the inspection of the facility and surrounding vegetation.

The entire pipeline footprint could not be surveyed during the site visit. Instead, 100m transects were sampled every 2 km, and opportunistic observations were made at watercourses. This is thought to give a relatively good representative sample of the vegetation type and species that occurs within the proposed route footprint.

The proposed alternatives traverses two vegetation types, namely Kalahari Karroid Shrubland, alternating with *Gordonia Duneveld* (Figure 8). The distribution of the two vegetation types correspond with the Plant Species Theme in Figure 7. Thus, the Kalahari Karroid Shrubland is classified as having a medium plant sensitivity and *Gordonia Duneveld* has a low plant sensitivity. The Kalahari Karroid Shrubland vegetation type is distributed within the Northern Cape Province. It typically forms belts alternating with belts of *Gordonia Duneveld* on plains northwest of Upington through Lutzputs and Noenieput to the Rietfontein/Mier area in the north. Other patches occur around Kakamas and north of Groblershoop. The unit is also found in the neighbouring Namibia. Altitude varies mostly from 700–1 100 m. The unit is characterised by low karroid shrubland on flat, gravel plains. Karoo-related elements (shrubs) meet here with northern floristic elements, indicating a transition to the Kalahari region and sandy soils. The vegetation type is classified as Least Threatened. Very little of the unit is statutorily conserved in Augrabies Falls National Park. Although only a small area has been transformed many of the belts of this type were preferred routes for early roads, thus promoting the introduction of alien plants (about a quarter of the unit has scattered *Prosopis* species). Erosion potential is very low for this unit (Mucina et al., 2006).

#### **The preferred Site/Alternative**

The proposed pipeline originates in the town of Noenieput and closely follows the dirt road connecting the towns of Noenieput and Swartkopdam (where the pipeline end). The sections of the footprint within each of the towns consist of transformed areas but the rest of the pipeline is within a largely natural landscape. The pipeline is confined to the road reserved in most cases or stays within a very close distance of the road. The surrounding landscape consist of farms, where the predominant use is livestock production. The route traverses a few drainage lines, one pan and there are pans situated on either sides of the pipeline footprint as per the Freshwater Impact Assessment

(Mostert, 2020). The vegetation surveyed along the footprint was homogenous, with very little significant differences in species composition. The vegetation structure had subtle differences, ranging between riparian area, shrubland, gravel plains that were sparsely vegetated, open pans and duneveld. The plant species sampled during the survey are listed in the table below. No species of conservation concern were encountered during the survey. Pictures from the site visit can be viewed in Appendix A. Two alien invasive cactus species occur in the footprint that were planted in Swartkopdam. Other listed alien invasive species encountered include White-flowered Mexican Poppy and Velvet Mesquite. A plant removal permit will need to be applied for, for the Schedule 2 & 3 species listed below according to Section 51 of the Northern Cape Nature Conservation Act No. 9 of 2009: “1) No person may, without a permit, pick an indigenous plant [Picking, receipt, possession, acquisition or handling of indigenous plants] — (a) On a public road; (b) on land next to a public road within a distance of 100 meters measured from the centre of the road.

Gordonia Duneveld is also distributed within the Northern Cape Province and in areas with dunes comprising the largest part of the South African side of the Kgalagadi Transfrontier Park. South of the Molopo River border with Botswana (west of Van Zylsrus) the unit interleaves Kalahari Karroid Shrubland in the west (south of Rietfontein to the Orange River area) and in the south (around Upington and north of Groblershoop). It also occurs as a number of loose dune cordons south of the Orange River near Keimoes and between Upington and Putsonderwater. The eastern boundary is found at the longitude of Pearson’s Hunt, but with outliers near Niekerkshoop in the southeast and Floradora in the northeast. Altitude ranges between 800–1 200 m. The landscape features consist of parallel dunes about 3–8 m above the plains. Open shrubland characterise the vegetation with ridges of grassland dominated by *Stipagrostis amabilis* on the dune crests and *Vachellia haematoxylon* on the dune slopes, also with *Senegalia mellifera* on lower slopes and *Rhigozum trichotomum* in the interdune straiten. The vegetation type is classified as Least Threatened. Some 14% is statutorily conserved in the Kgalagadi Transfrontier Park. Very little of the unit is transformed. Generally, the unit has low erosion potential, but some areas have spectacular destabilisation of normally vegetated dunes (through local overstocking) favoured by photographers (Rutherford et al., 2006).

## SECTION C: PUBLIC PARTICIPATION

### 1. ADVERTISEMENT AND NOTICE

<b>Publication name</b>	Gemsbok Local Newspaper	
<b>Date published</b>		
<b>Site notice position</b>	<b>Latitude</b>	<b>Longitude</b>
<b>Date placed</b>		

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 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

<b>Title, Name and Surname</b>	<b>Affiliation/ key stakeholder status</b>	<b>Contact details (tel number or e-mail address)</b>
Will be included once the PPP has been conducted.		

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

<b>Summary of main issues raised by I&amp;APs</b>	<b>Summary of response from EAP</b>
To be included in the Final Basic Assessment	To be included in the Final Basic Assessment

#### 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
Department of Environment & Nature Conservation (DENC)		(053)8077300			
Dawid Kruiper Local Municipality		(054)3387000			
Department of Water and Sanitation		(053)8367600			
Heritage Department Northern Cape (Official)		(053)8312537			
Ward Councillor					
South African Heritage Resource Agency					

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, 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.

### 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.

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>			
<b>Nature of Impact:</b> Negative impact of haphazard placement of infrastructure on the environment.	<b>Activity:</b> The establishment of a main site office and storage site during the construction period will ensure that the poor placement of materials and infrastructure will be avoided. This could also result in the damage or pollution to surrounding areas caused by construction activities		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium	Low	-
<b>Cumulative Impact:</b>	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Draw up and submit for approval a Site Layout Master Plan. This plan must show the final positions and extent of all permanent and temporary site structures and infrastructure;</li> <li>• The planning for layout must be done in consultation on-site with the Environmental Control Officer (ECO);</li> <li>• Locate all structures and storage areas, including offices, workshops, and stores in approved locations as per the site layout plan;</li> <li>• After the final layout has been approved, conduct a thorough footprint investigation to detect and map (by GPS) any protected plant species and animal burrows;</li> </ul>		-

BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> <li>• The contractor may not deface, paint, damage or mark any natural features situated in or around the site for survey or other purposes;</li> <li>• The contractor must ensure that all construction personnel, labourers, and equipment remain within the demarcated construction sites at all times;</li> <li>• No servicing of vehicles may be permitted on site, unless for emergency purposes;</li> <li>• Stockpiles should not be situated such that they obstruct pathways;</li> <li>• Location of storage area must take into account prevailing winds, distance to water bodies and general on-site topography;</li> <li>• Protected Plant Species must be relocated (where possible);</li> <li>• Animal burrows must be monitored by the Environmental Control Officer (ECO) prior to construction for activity/presence of animal species. If detected, such animals must be removed and relocated by a qualified professional/contractor;</li> <li>• Place infrastructure as far as possible on sites that have already been transformed; and,</li> <li>• Facilities may not be used as staff accommodation.</li> </ul>		
<b>Nature of Impact:</b> Soil and Geology	<b>Activity:</b> The clearing of topsoil and excavation for the establishment of administration offices, guard rooms etc.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium – High	Low	-
<b>Cumulative Impact:</b>			-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Remove topsoil approximately 300mm deep from establishment area and stockpile areas;</li> <li>• Topsoil stockpiles to be kept free from weeds;</li> <li>• Topsoil stockpiles to be placed on a levelled area and measures to be implemented to safeguard the piles from being washed away in the event of heavy rain/storm water;</li> <li>• Topsoil need to be stored on designated areas only. This need to be planned and indicated in the site-layout plan;</li> <li>• Strip and stockpile herbaceous vegetation, overlying grass and fine organic matter along with the topsoil;</li> <li>• Ensure that topsoil is not mixed with subsoil and/or any other excavated material;</li> <li>• Provide containment and settlement facilities for effluents from concrete mixing and washing facilities;</li> </ul>		-

BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> <li>Temporarily stored topsoil must be re-applied within 6 months, topsoil stored for longer need to be managed according to a detailed topsoil management plan;</li> <li>Do not strip topsoil when it is wet;</li> <li>Provide spill containment facilities for hazardous materials like fuel and oil; and,</li> <li>Topsoil must be used in all rehabilitation activities and may not be compacted to ensure that its plant support capacity remain of high quality.</li> </ul>		
<b>Nature of Impact:</b> Soil, Surface and groundwater contamination due to construction activities such as the use of hazardous materials on site e.g. fuel and oil.	<b>Activity:</b> Construction camp site establishment, construction of stormwater infrastructure movement of vehicles and use of construction heavy machinery can cause spillages on site. And mismanagement of construction waste and hazardous substances resulting in these substances entering and polluting natural environments either directly through surface runoff, or subsurface water movement.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium-HIGH	Low	-
<b>Cumulative Impact:</b>	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Water in the stream must be diverted around the area of placement of culvert structures until they are completely set and do not pose a risk of water contamination.</li> <li>No washing of concrete mixing and pouring equipment or any object that is contaminated with cement in any water resource. No concrete mixing trucks must be washed on site; they must return to the supplier for cleaning out.</li> <li>Concrete can be mixed on mixing trays only and not on exposed soil. Concrete must be mixed only in areas which have been specially demarcated for this purpose (preferable where no natural vegetation occur);</li> <li>Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces;</li> <li>Material Safety Data Sheets (MSDSs) should be available on site for all chemicals and hazardous substances to be used on-site, including information on their ecological impacts and how to minimise the impacts in case of leakage;</li> <li>All spillage must be cleaned up immediately after they have occurred;</li> </ul>		



BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> <li>Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bioremediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site;</li> <li>Do not locate any ablution facilities, sanitary convenience, septic tank or French drain within the 1:100 year flood line, or within a horizontal distance of 100m (whichever is greater) of a watercourse or drainage line;</li> <li>Vehicles and machinery must be regularly serviced to avoid leakages;</li> <li>No vehicles may be parked within 100m from a watercourse; and,</li> <li>No uncontrolled discharges from the site or working area to depressions may be permitted. All discharge points will require approval from the Environmental Site Agent (ESA).</li> </ul>		
<b>Nature of Impact:</b> Road safety and disturbance of traffic	<b>Activity:</b> Temporary disturbance for movement of pedestrians and vehicular traffic in the area.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Low	Low	-
<b>Cumulative Impact:</b>	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>The necessary traffic safety warning signage must be erected during construction as per the engineers' specifications to warn motorists and pedestrians of the potential dangers of the construction site</li> <li>The necessary traffic safety warning signage must be erected during construction as per the engineers' specifications to warn motorists and pedestrians of the potential dangers of the construction site</li> <li>Share information prior to projects beginning. Warning commuters before the construction starts gives them an opportunity to think about alternate routes to their destination. Warning messages, a week or two prior to the start date is a good benchmark.</li> <li>Advice motorists to use alternative routes, especially in the mornings and during the rush/pick up hours in the afternoon to avoid traffic congestions.</li> </ul>		
<b>Nature of Impact:</b> Uncontrollable fire outbreak	<b>Activity:</b> Due to the presence of construction personnel in natural areas, fires can occur if not managed correctly.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium	Low	

BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
Cumulative Impact:	-	-	
Proposed Mitigation:	<ul style="list-style-type: none"> <li>• The potential risk of veld fires are heightened by windy conditions in the area, specifically during the dry, windy summer months;</li> <li>• Ensure the work site and the contractor’s camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veldt areas, and at least one fire extinguisher of the appropriate type irrespective of the site;</li> <li>• Workers must be adequately trained in the handling of firefighting equipment;</li> <li>• No open fires are permitted anywhere on site;</li> <li>• Do not store any fuel or chemicals under trees;</li> <li>• Do not store gas and liquid fuel in the same storage area (Hazardous substances to be stored in accordance with SANS);</li> <li>• The Contractor should ensure that construction related activities that pose a potential fire risk, such as welding, heating of bitumen etc., are properly managed and confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include clearing working stations and avoid working in high wind speed conditions when the risk of fires is greater;</li> <li>• No smoking is allowed near any natural areas;</li> <li>• Do not permit any smoking within 3m of any fuel or chemical storage area, or refueling area. A designated smoking area must be established on site; and,</li> <li>• All construction vehicles must be fitted with at least one fire extinguisher.</li> </ul>		

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>POTENTIAL IMPACTS ON BIOLOGICAL ASPECTS:</b>			
Nature of Impact: Destruction of terrestrial fauna species	<b>Activity:</b> Potential to destroy to disturb, harm or injure faunal species (especially species with limited mobility) inhabiting the sites directly, reduce habitat and species diversity and disruption of access to grazing and crop areas.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
Significance Rating:	Low	Low	-

BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>Cumulative Impact:</b>	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Selected workers must be given training on the possible fauna that may be encountered along the road under maintenance.</li> <li>Site workers are to be informed of any sensitive fauna on the site prior to construction activities commencing and be informed that poaching or disturbance is strictly prohibited.</li> <li>Under no circumstances shall any fauna be handled, removed, killed or interfered with by the Proponent, Project Manager, Resident Engineer, contractors, engineers, and their employees, including subcontractors or their subcontractors' employees. However, if construction activities are likely to injure, kill or interfere with any fauna encountered on the site, appropriate action must be taken to ensure their protection.</li> <li>Any fauna found within the construction corridor must be moved to the closest point of natural or semi-natural vegetation outside the construction servitude. This includes those species perceived to be vermin (such as snakes and rats). The latter species may require the services of a specialist to catch and relocate dangerous/venomous species.</li> </ul>		-
<b>Nature of Impact:</b> Traffic impacts associated with the movement of construction vehicles on site.	<b>Activity:</b> The movement of vehicles on site may result in the destruction of biodiversity, compaction of valuable topsoil and mortalities of fauna on site.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium	Low	-
<b>Cumulative Impact:</b>	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>After the final layout has been approved, conduct a thorough footprint investigation (walk-through) to detect and map (by GPS) all protected plant species, which must be removed and animal, burrows, present within the project site.</li> <li>Animal burrows must be monitored by the ECO prior to construction for activity/presence of animal species. If detected, such animals must be removed and relocated by a qualified professional/contractor;</li> </ul>		-

BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> <li>• During construction create designated turning areas and strictly prohibit any off-road driving or parking of vehicles and machinery outside designated areas;</li> <li>• Ensure that runoff from compacted or sealed surfaces is slowed down and dispersed sufficiently to prevent accelerated erosion from being initiated (storm water and erosion management plan required).</li> <li>• Ensure adequate drainage where roads cross drainage lines or ephemeral tributaries;</li> <li>• Monitor the establishment of (alien) invasive species and remove as soon as detected, before regenerative material can be formed;</li> <li>• Abnormal loads and machinery should avoid movement over gravel roads during and immediately after rainfall events, so as to limit destruction of road surfaces and sedimentation of downhill rivers/streams;</li> <li>• All vehicles must be road-worthy, be maintained to prevent fuel or oil leaks and drivers are to be licensed appropriately for the driving of their assigned vehicle. Drivers responsible for the transportation of personnel must be specifically licensed to do so;</li> <li>• Construction vehicles may not leave the designated roads and tracks, whilst U-Turns are prohibited on all roads;</li> <li>• Signage is to be placed on vehicles at all times;</li> <li>• All construction vehicles should adhere to construction sites and avoid off road to minimise impact on vegetation and soil;</li> <li>• Construction Vehicles may not be parked in the road reserve, specific parking areas must be identified prior to construction and these areas must be inspected to ensure no red data species occur;</li> <li>• After decommissioning, if access roads or portions thereof will not be of further use to the landowner, remove all foreign material and rip area to facilitate the establishment of vegetation, followed by a suitable revegetation program; and,</li> <li>• Construction-related vehicles and machinery may not operate on site without reflective safety signage, car-top lights and reflective personnel gear.</li> </ul>		
<b>Nature of Impact:</b> Destruction of vegetation cover	<b>Activity:</b> The construction of several permanent structures on site will result in the loss of vegetation due to foundation excavation.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium- high	Low	-
<b>Cumulative Impact:</b>	-	-	-

BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• After the final layout has been approved, conduct a thorough footprint investigation to detect and map (by GPS) any protected plant species and active animal burrows;</li> <li>• Protected plant species must be relocated where possible;</li> <li>• Keep areas affected to a minimum, strictly prohibit any disturbance outside the demarcated construction footprint area;</li> <li>• Clear as little indigenous vegetation as possible, aim to maintain vegetation where it will not interfere with the construction or operation of the development, rehabilitate an acceptable vegetation layer according to rehabilitation recommendations of the relevant EMP'r, if possible;</li> <li>• Indigenous vegetation unique to the area must be used during landscaping activities;</li> <li>• There should be a preconstruction environmental induction for all construction staff on site to ensure that basic environmental biodiversity principles are adhered to;</li> <li>• Where the ECO deems it necessary (e.g. sensitive, natural areas) the ecologist appointed to do the vegetation study will be utilized;</li> <li>• No vehicles may be parked within the road reserve, designated parking areas must be identified during the planning phases;</li> <li>• Restoration measures will be required to reinstate functionality in the disturbed soil and vegetation;</li> <li>• Impacts to sensitive sites (drainage lines) should be avoided;</li> <li>• No vegetation may be gathered for the purpose of creating fire; and,</li> <li>• No fires are allowed on site.</li> </ul>		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS:</b>			
<b>Nature of Impact:</b> Employment creation during construction period	<b>Activity:</b> During the construction period of the project people will be employed especially those residing in the area of Noenieput and Swartkopdam.		<ul style="list-style-type: none"> <li>• No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.</li> </ul>

BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
			<ul style="list-style-type: none"> <li>No construction will result in no job creation within the Local Area</li> </ul>
<b>Significance Rating:</b>	Medium +	Medium +	-
<b>Cumulative Impact:</b>	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Where reasonable and practical the contractors appointed by the applicant should appoint local contractors and implement a “local first” policy, especially for semi and low-skilled job categories. However; due to the low skill levels in the area, the majority of skilled posts are likely to be filled by personnel from outside the area;</li> <li>The recruitment selection process should seek to promote gender equality and the employment of women wherever possible, particularly for less labour-intensive work such as flag bearing and supervision; and,</li> <li>The ongoing presence of semi and high skilled personnel involved in the project construction phase will generate sustained clientele to a portion of the guest house industry within the vicinity of the development.</li> </ul>		-
<b>Nature of Impact:</b> Prevent danger to trespassing of persons.	<b>Activity:</b> Keep the site secure from Local Communities and thieves in order to avoid any injuries and/or theft of equipment		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium	Low	-
<b>Cumulative Impact:</b>	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Be responsive to open or closed status of gates;</li> <li>New or the upkeep of fences should align to ensure safety of animals and maintain a reliable boundary area;</li> <li>All equipment must be stored properly in a site camp with a lockable gate to ensure no risk to local communities at night; and,</li> <li>It is recommended that a security guard be appointed to see to equipment after hours.</li> </ul>		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS:</b>			
<b>Nature of Impact:</b>	<b>Activity:</b> Excavation activities can result in the discovery of cultural and historical artefacts beneath the earth surface. Damage or loss can occur if the correct procedures are not followed.		No construction phase impacts are associated with the no-go

## BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
Damage and destruction of vertebrate fossils during excavation activities.			alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Low	Low	-
<b>Cumulative Impact:</b>	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Should any heritage resources (including but not limited to fossil bones, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts or bone remains, structures and other built features, rock art and rock engravings) be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped. A trained palaeontologist or heritage specialist must be notified to assess the finds, and this must then be reported to the applicable heritage authority;</li> <li>• Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from the heritage authority. A registered heritage specialist must be called to the site for inspection and removal once authority to do so, has been given;</li> <li>• Excavations must be limited to the footprint area and be maintained in a narrow corridor;</li> <li>• All operations of excavation equipment must be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures must be followed: <ul style="list-style-type: none"> <li>○ All construction in the immediate 50 m vicinity radius of the site must cease;</li> <li>○ The heritage practitioner must be informed as soon as possible;</li> <li>○ In the event of obvious human remains SAPS must be notified;</li> <li>○ Mitigation measures (such as refilling, etc.) must not be attempted;</li> <li>○ The area in a 50 m radius of the find must be cordoned off with hazard tape;</li> </ul> </li> <li>• Public access must be limited and the area must be placed under guard;</li> <li>• The Furnace area must be protected and declared a no-go area until the developer appoints a suitably qualified archaeologist to conduct a Phase 2 archaeological assessment of the terrain and to draw up a heritage management plan for the site; and, The appointed archaeologist must apply for a valid permit from SAHRA to excavate the furnace for display and educational purposes.</li> </ul>		-

BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>POTENTIAL IMPACTS ON VISUAL ASPECTS:</b>			
<b>Nature of Impact:</b> Impact on the sense of place for surrounding users.	<b>Activity:</b> The movement of construction vehicles, machinery and personnel on site shall result in a visual impact on surrounding users. Furthermore to this, the storage of materials and excavation shall result in disturbance and an unsightly character.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium	Low	-
<b>Cumulative Impact:</b>	Low	Low	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Access roads are to be kept clean and dust suppression techniques should be implemented to minimise impacts of vehicle movement;</li> <li>• Site offices and structures should be limited to one location and carefully situated to reduce visual intrusions. Roofs should be grey and non-reflective;</li> <li>• Construction camps as well as development areas should be screened with netting;</li> <li>• Lights within the construction camp should face directly down (angle of 90°);</li> <li>• Vegetation should remain intact and development must be situated behind the vegetation screen to minimise the visual impact;</li> <li>• Minimum vegetation should be removed to ensure the visual absorption capacity remain high;</li> <li>• Litter should be strictly controlled, as the spread thereof through wind could have a very negative visual impact; and,</li> <li>• Avoid shiny materials in structures. Where possible shiny metal structures should be darkened or screened to prevent glare.</li> </ul>		-

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>POTENTIAL IMPACTS ON NOISE ASPECTS:</b>			
<b>Nature of Impact</b> Noise will be generated during the construction phase	<b>Activity:</b> Noise levels along the road will increase during the construction activities due to the use of heavy machinery and vehicles.		No construction phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium	Low	-



## BASIC ASSESSMENT REPORT

Planning, Design and Construction Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>Cumulative Impact:</b>			-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• All machinery must be serviced at regular intervals in order to ensure that they do not emit unnecessary noise.</li> <li>• Vegetation along the road servitude must not be removed unnecessarily in order to maintain a vegetative barrier which will assist with preventing noise from travelling to residents and neighbouring farms;</li> <li>• During construction keep noise levels within acceptable limits in compliance with all relevant guidelines and regulations;</li> <li>• All vehicles and machinery must be fitted with appropriate silencing technology that must be properly maintained;</li> <li>• The use of all plant and machinery must be appropriate to the task required in order to reduce noise levels.</li> <li>• Increased attention to maintenance of tools and equipment will reduce worksite noise levels.</li> <li>• Use light equipment or machinery such as the hand-held (“jackhammers”) and machine breakers (“woodpeckers”).</li> </ul>		-

### 2. POTENTIAL IMPACTS DURING THE OPERATIONAL PHASE:

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS:</b>			
<b>Nature of Impact:</b> Handling of general waste materials on the maintenance site	<b>Activity:</b> The presence of maintenance personnel on site will increase the likelihood of littering and dumping of solid waste.		No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium	Low	-
<b>Cumulative Impact:</b>	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• An adequate number of scavenger proof litter bins are to be placed throughout the site;</li> <li>• Waste sorting and separation bins should be placed at all public facilities, to encourage visitors to dispose waste paper, glass and general waste separately;</li> </ul>		-

BASIC ASSESSMENT REPORT

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> <li>• Keep all work sites including storage areas, offices and workshops neat and tidy;</li> <li>• All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site;</li> <li>• Care should be taken to ensure that no waste fall of disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised;</li> <li>• The burning or burying of solid waste on site is prohibited. Do not burn PVC pipes or other plastic materials, as this is regarded as hazardous waste;</li> <li>• Minimise waste by sorting wastes into recyclable and non-recyclable waste; and,</li> <li>• A bi-weekly litter patrol of the entire site shall be conducted by the designated ESA.</li> </ul>		
<b>Nature of Impact:</b> Soil and ground water contamination	<b>Activity:</b> Oil spillages and other chemical from the vehicles can contaminate the soil and ground water due to run off.		No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium High	Low	-
<b>Cumulative Impact:</b>	Low	None	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Concrete can be mixed on mixing trays only and not on exposed soil. Concrete must be mixed only in areas which have been specially demarcated for this purpose (preferable where no natural vegetation occur);</li> <li>• Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces;</li> <li>• Material Safety Data Sheets (MSDSs) should be available on site for all chemicals and hazardous substances to be used on-site, including information on their ecological impacts and how to minimise the impacts in case of leakage;</li> <li>• All spillage must be cleaned up immediately after they have occurred;</li> <li>• Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bioremediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site;</li> <li>• Do not locate any ablution facilities, sanitary convenience, septic tank or French drain within the 1:100 year flood line, or within a horizontal distance of 100m (whichever is greater) of a watercourse or drainage line;</li> <li>• Vehicles and machinery must be regularly serviced to avoid leakages;</li> <li>• No vehicles may be parked within 100m from a watercourse;</li> </ul>		-

BASIC ASSESSMENT REPORT

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> <li>• No uncontrolled discharges from the site or working area to depressions may be permitted. All discharge points will require approval from the Environmental Site Agent (ESA);</li> <li>• No water courses may be used to clean equipment, or for bathing. All cleaning operations should take place off site at a location where waste water can be disposed of correctly;</li> <li>• The discharge of any pollutants such as cement, concrete, lime, chemicals, etc. into the natural environment and the storm water system must strictly be prohibited;</li> <li>• Fuel and chemical storage should be done within a designated area only, which is properly bund and able to contain 110% of the capacity of fuel or chemicals stored within;</li> <li>• Construction vehicles must be inspected every morning before work commence to ensure that no leakages do occur;</li> <li>• All personnel must receive induction on how to report spillages, contain them and treat them accordingly;</li> <li>• Spill kits must be available at each working station;</li> <li>• Drip trays must be placed beneath all construction equipment that is stationary on site or within the site camp; and,</li> <li>• Hazardous waste must be stored in bins with a lid in a demarcated waste area, and must be disposed of at a hazardous treatment facility with records on file.</li> </ul>		

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>POTENTIAL IMPACTS ON BIOLOGICAL ASPECTS:</b>			
<b>Nature of Impact:</b> Infestation of the area with Alien and Invasive Species	<b>Activity:</b> Implementation of alien and invasive Programme to control invasive plant species.		No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium (M)	Low (L)	-
<b>Cumulative Impact:</b>	Low (L)	Low (L)	-
<b>Proposed Mitigation:</b>	<i>Clearing and Guiding Principles</i>		-

## BASIC ASSESSMENT REPORT

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> <li>• Alien control programs are long-term management projects and should include a clearing plan which includes follow up actions for rehabilitation of the cleared area;</li> <li>• The lighter infested areas should be cleared first to prevent seed build-up;</li> <li>• Pre-existing dense areas should be left for last, as they probably will not increase in density or pose a greater threat than they are currently; and,</li> <li>• All clearing actions should be monitored and documented to keep track of which are due for follow-up clearing.</li> </ul> <p><b>Clearing Methods</b></p> <ul style="list-style-type: none"> <li>• Different species require different control methods such as manual, chemical or biological methods or a combination of the two;</li> <li>• Care should be taken to ensure that the clearing methods used do not encourage further invasion. As such, regardless of the methods used, soil disturbance should be kept to a minimum. The vegetative stage of the plants should also be considered before clearing;</li> <li>• Fire is not a natural phenomenon in the area and should not be used in general for alien control or vegetation management at the site.</li> <li>• The best-practice clearing method for each species identified should be used. The preferred clearing methods for most alien species can be obtained from the Department of Water and Agricultural Affairs (DWAF) Working for Water website: <a href="http://www.dwaf.gov.za/wfw/Control/">http://www.dwaf.gov.za/wfw/Control/</a>.</li> </ul> <p><b>Use of Herbicides for Alien Control</b></p> <p>Although it is usually preferable to use manual clearing methods where possible, such methods may create additional mechanical disturbance which may stimulate alien invasion and may also be ineffective for many woody species which resprout. Where herbicides are to be used , the impact of the eradication program on the natural environment should be minimised by observing the following:</p> <ul style="list-style-type: none"> <li>• Area contamination must be minimised by careful, accurate application with a minimum amount of herbicide to achieve good control;</li> <li>• Care must be taken to prevent contamination of water bodies. This includes special care in storage, application, cleaning equipment and disposal of containers, product and spray mixtures;</li> </ul>		

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Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
	<ul style="list-style-type: none"> <li>Equipment should be washed where there is no danger of contaminating water sources and washings carefully disposed of in a suitable place;</li> <li>To avoid damage to indigenous or other desirable vegetation, herbicides that would have the least effect on the indigenous vegetation should be used;</li> <li>Droplet nozzles with a course spray pattern should be fitted to avoid drift of herbicides onto neighbouring vegetation; and,</li> <li>The appropriate health and safety precautions should be followed regarding the storage, handling and disposal of herbicides.</li> </ul>		

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS:</b>			
<b>Nature of Impact:</b> Increased availability of water	<b>Activity:</b> The increase in the water availability will benefit both the farmers and the village of Swartkopdam. This can be considered as the positive impact of the proposed improvement.		No construction would lead to the water pipelines being unsafe to the local communities.
<b>Total SP:</b>	80	-	
<b>Significance Rating:</b>	High Positive	-	
<b>Cumulative Impact:</b>		-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>No proposed mitigation</li> </ul>		-
<b>Nature of Impact:</b> The creation of job opportunities during the operational phase,	<b>Activity:</b> Continues maintenance of the freeway will contribute to employment opportunities for the Operational life span of the freeway.		No construction will result in no job creation within the Local Area
<b>Significance Rating:</b>	Medium High Positive	Medium High Positive	
<b>Cumulative Impact:</b>	-	-	
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>No proposed mitigation measures.</li> </ul>		-

BASIC ASSESSMENT REPORT

Operational Phase	Alternative 1		No-Go Alternative
	Before Mitigation	After mitigation	
<b>POTENTIAL IMPACTS ON NOISE ASPECTS:</b>			
<b>Nature of Impact:</b> Noise Pollution	<b>Activity:</b> The operating of vehicles and machinery on site results in the generation of noise disturbing users of the surrounding area.		No operational phase impacts are associated with the no-go alternative thus no assessment has been undertaken.
<b>Significance Rating:</b>	Medium	Low	-
<b>Cumulative Impact:</b>	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• All reasonable precautions must be taken to minimize noise generated on site.</li> <li>• Construction vehicles must be kept in good working order so as not to generate excessive noise.</li> <li>• Activities which will lead to excessive noise near residential areas should be limited to take place during the day.</li> </ul>		-

A complete impact assessment in terms of Regulation 19(3) of GN 733 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)**

Impact on vegetation and loss of species	<b>Direct impacts:</b>	Moderate
Transformation and loss of habitat	<b>Direct impacts:</b>	Moderate
Impact on fauna	<b>Direct impacts:</b>	Moderate
Dust nuisance	<b>Direct impacts:</b>	Low
<b>Potential impacts on geological and physical aspects:</b>		
Erosion	<b>Direct impacts:</b>	Moderate
Impact on surface and groundwater	<b>Direct impacts:</b>	Low
Waste management	<b>Direct impacts:</b>	Low
Traffic impact	<b>Direct impacts:</b>	Low
Increased risk of veld fires	<b>Direct impacts:</b>	Moderate
<b>Potential noise impact:</b>		
Noise nuisance	<b>Direct impacts:</b>	Moderate
<b>Potential impacts on socio-economic aspects:</b>		
Job creation	<b>Direct impacts:</b>	Low (positive)
Presence of construction workers in the area	<b>Direct impacts:</b>	Moderate
<b>Potential impact on cultural-historical aspects</b>		
Impact on fossils	<b>Direct impacts:</b>	Moderate
Discovery of any heritage resources.	<b>Direct impacts:</b>	Low (positive)
Impacts on archaeological resources	<b>Direct impacts:</b>	Moderate
Impact on trees which is part of the cultural landscape	<b>Direct impacts:</b>	Low
<b>Potential impacts on visual aspects:</b>		
Impact on sense of place	<b>Direct impacts:</b>	Low

Alternative B

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Alternative C

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**No-go alternative (compulsory)**

The no-go option will result in the non-construction of the potable water pipeline. Noenieput and Swartkopdam are totally dependent on groundwater for water supply, which is unsuitable in terms of quality and quantity. The boreholes cannot meet the summer peak demand and the quality of the water is detrimental to the health of the communities. Both commercial and small-scale farmers will not be able to survive another summer season without adequate and sustainable water resources. The past droughts and inadequate rainfall had a detrimental effect on grazing resources and stock loss will be inevitable.

**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 X	
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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
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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.

<p><b><u>Recommendations</u></b></p> <ul style="list-style-type: none"> <li>• Personnel are not allowed to create any fires on site.</li> <li>• It is important that all mitigation measures within the EMP are strictly adhere to;</li> <li>• Should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage North West must be notified without delay;</li> <li>• Prior to construction a walkthrough investigation to identify, map and translocate all protected plant species must be conducted.</li> <li>• Translocation of indigenous species should not be done without permits from relevant Competent Authorities;</li> <li>• Alien vegetation eradication program should be developed and implemented for the site to remove alien vegetation during all operational phases;</li> <li>• Follow-up clearing and monitoring should be done to detect any new invasive species establishment and spread during operation and decommissioning. It is important that monitoring and control operations should extend into the surrounding natural grassland;</li> <li>• Alien plant material removed during construction and eradication efforts should be contained and disposed of properly to limit accidental spread; and,</li> </ul>
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- Future expansion and construction activities should be limited to the smallest possible area.
- Archaeologically speaking, proposed Alternative 1, the Swartkopdam alignment, is deemed the most feasible and provided that the recommended mitigations are implemented on sites that may be negatively impacted upon, there are no objections to the proposed development proceeding along the Swartkopdam alignment.
- It is recommended that a no-go buffer of 50 m from the edge of each site extent, be implemented for sites graded as IIIB.
- If it is not possible to avoid the sites mentioned above, they must be mitigated by a qualified archaeologist. A permit in terms of section 35 of the NHRA and Chapter II and IV of the NHRA Regulations must be applied for from SAHRA via SAHRIS before construction.
- We recommend the appointment of a Heritage officer to monitor development during the construction phase of the project to mitigate the impact on resources that may be uncovered by the excavation process. PHASE 1 AIA FIELD REPORT Proposed development of pipelines near Noenieput, Northern Cape Province
- From a heritage standpoint, proposed Alternative 2, the Noenieput alignment, is deemed NOT feasible and identified sites along this alignment are no-go areas.
- All the dunes within this area should be treated as sensitive zones and potential heritage sites and avoided where possible.
- The sites graded as IIIA and IIIB should be added to the heritage register.
- Although all possible care has been taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the assessment. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA.
- If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or

palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;

- UBIQUE Heritage Consultants and its personnel will not be held liable for such oversights or costs incurred as a result of such omissions.

**Conclusion**

The contents of this report have sought to identify and assess key issues relating to the proposed construction of potable water pipelines supply near Noenieput, Northern Cape.

In consolidation thereof, no environmental fatal flaws were identified to be associated with the proposed facility. The majority of impacts identified were of a medium to low significance and can be suitably mitigated to acceptable levels, provided that specifications are stipulated in the EMP-r are followed and adhered to.

It is thus the opinion of the EAP, supported by the findings of specialist determinations that the development of the proposed potable water pipelines from Noenieput to Swartkopdam, with the guidance of the EMP-r, be authorised for construction and operation.

Is an EMP-r attached?

YES	
X	

The EMP-r 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.

Thandeka Moabi

\_\_\_\_\_  
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