

21/08/2020

DRAFT BASIC ASSESSMENT REPORT

**PROPOSED SEWER PIPELINE AND
PIPE BRIDGE, PAUL ROUX,
DIHLABENG LOCAL MUNICIPALITY
DESTEAF REF. NO.: EMB/19,12/20/09**



NSVT CONSULTANTS
ENVIRONMENTAL & SOCIAL SCIENTISTS



destea

department of
economic, small business development,
tourism and environmental affairs
FREE STATE PROVINCE

(For official use only)

File Reference Number:

Application Number:

Date Received:

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

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 as amended 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.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.



EXECUTIVE SUMMARY

NSVT Consultants has been appointed by SM-TB JV on behalf of Dihlabeng Local Municipality, as the independent EAP to undertake a Basic Assessment process for the proposed 1.58km gravity-fed sewer outfall pipeline from the new development, Extension 5, Fateng tse Ntsho to a connection point to the Paul Roux wastewater treatment works. The proposed pipeline will cross Sand River, seasonal wetland, and a drainage line before it connects to the existing outfall sewer connection point. At the section where the sewer pipeline crosses the Sand River, it will be carried by a proposed sewer pipe bridge of 138m and 1m wide. The sewer pipeline will be laid underground except at the Sand River crossing. Dihlabeng Local Municipality proposed this development so that they can provide sanitation services to the new development, which has not been constructed yet and the existing wastewater treatment works has adequate capacity to accommodate the proposed development. The proposed uPVC pipeline had a DN150mm diameter with an estimated flow rate of 21.492l/s throughput of, therefore it is below the EIA threshold for pipeline specifications as outlined in the EIA Regulations, however, due to the fact that the pipeline will cross watercourses and the site is shown as an open space according to the Dihlabeng Local Municipality's Spatial Development Framework, the activity triggers Listed Activities, therefore an Environmental Authorisation must be obtained from the Department of Economic, Small Business Development, Tourism and Environmental Affairs. A water use license will also be required from the Department of Water and Sanitation for Section 21(c) and (i) in terms of the National Water Act (At 36 of 1998). No alternative sites were considered as part of the Basic Assessment Process as route selection was completed prior to the appointment of the Environmental Assessment Practitioner and the route was based on the topography of the area, so that there would not be a need to include a pump station, i.e. a gravity-fed pipeline. The photographic history depicting the conditions and land uses within and surrounding the proposed pipeline route is provided. The development is not compromising the integrity of the municipality's Integrated Development Plan and local and provincial Spatial Development Framework. The development priority of providing and facilitating sustainable infrastructure development will be realized. Development also fit in with the aim of the National Development Programme 2013, whereby on completion, there will be a fully serviced settlement, with sanitation facilities, which would not threaten the soil and groundwater conditions and the health and wellbeing of the beneficiaries, thus their constitutional right to adequate housing will upheld. The principles of the National Environmental Management Act (Act 107 of 1998) have also been considered as part of the process. During the public participation process, identified Interested and Affected Parties, were notified directly in addition to placing an advertisement in the local newspaper, Die Telegraaf, on-site notice and posters at prominent places about the proposed development but no objections or comments were received. A draft report has been sent for review and the comments and input will be

incorporated into the final report before submission to the competent authority for decision making. To identify environmental impacts associated with the proposed pipeline, a site visit was undertaken, a desktop study/literature review, involvement of specialists, *i.e.* Heritage Specialist, Ecologist and Geotechnical Engineer. There were direct, indirect and cumulative impacts that were anticipated if the proposed would go ahead as planned. They were assessed using the Significance Assessment Methodology based on the nature of the impact, extent and duration, reversibility, probability, magnitude, and whether there will be any residual risks. The significance of the impacts were evaluated without and with adoption of the mitigation and management measures. With mitigation measures outlined, the significance of impacts ranged between low and medium and due to the nature of the project, the disturbed area footprint would be narrow. The sensitive area is the Sand River, wetland and drainage line crossings, thus management measures have been outlined to ensure that the impact is greatly reduced, especially during the operation phase. The recommendations from specialists include conducting a comprehensive SASS, collecting water samples and obtaining permit must be obtained for the removal of the provincially protected species prior to site preparation and commencement of the construction phase. During the construction at the river crossing, an archaeologist must be appointed to monitor excavations. The material found along the proposed route should not be used for backfilling, bedding or as a blanket material because it is clayey, thus suitable material must be sourced from a commercial quarry. Given the above information, the Environmental Assessment Practitioner hereby recommends that the proposed development go ahead as planned provided recommendations, conditions and mitigation measures outlined in the Basic Assessment Report and Environmental Management Programme including the management plans are adhered to. It is expected that adequate information is provided to the competent authority to enable them to make an informed decision regarding the proposed pipeline and sewer pipe bridge.

DRAFT BASIC ASSESSMENT REPORT

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

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<p>CONSULTANTS  ENVIRONMENTAL & SOCIAL SCIENTISTS</p>	

PROJECT INFORMATION

REPORT TITLE: Basic Assessment Report

REPORT STATUS: Draft

PURPOSE OF REPORT: The purpose of this BAR is to present the proposed development and the need for the development; provide details of the Environmental Assessment Practitioner (“EAP”) appointed to undertake the Basic Assessment (“BA”) process; provide an overview of the public participation process; and to set out the environmental outcomes, impacts and residual risks.

PROJECT TITLE: Paul Roux Sewer Pipeline and Pipe Bridge

APPLICANT: Dihlabeng Local Municipality

PROJECT ENGINEERS: SM-TB JV

ENVIRONMENTAL CONSULTANTS: NSVT Consultants

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SECTION A: ACTIVITY INFORMATION

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

<input type="checkbox"/>	<input type="checkbox"/> NO
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If YES, please complete the form entitled “Details of specialist and declaration of interest” for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

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

To connect the new Extension 5 residential development in Fateng tse Ntsho to the existing outfall sewer line, a new sewer line of 1.58km must be constructed. The sewer pipe bridge, which is approximately 140m in length and 1m wide, will be used to carry a DN150mm uPVC sewer pipe across Sand River, thereafter the sewer pipeline will cross a wetland to connect to the existing outfall sewer to the Paul Roux wastewater treatment works.

The Basic Assessment Report is undertaken to determine possible environmental impacts that the proposed construction of a sewer bridge pipeline and pipeline across Sand River and wetland, may have on the receiving and surrounding environment. The sewer pipeline diameter and throughput doesn't fall within the ambit of the 2014 NEMA regulations as amended, but since there will be excavation, removal and backfilling of material of more than 10m³ for the founding of the pier footings in the ground and laying of the pipeline across the wetland, a Basic Assessment process is required.

The activities to be undertaken for the construction of the sewer bridge would be to dig the required level then cast a concrete base and on top a concrete pier to the required height, which would be cast to supports a lattice steel frame concrete sewer bridge held down on to the sewer and spanning from pier to pier. The bridge will have 6 piers across the watercourse to support the bridge structure, which will carry the sewer pipeline.

The technical report providing more information on the sewer pipeline specification is attached hereto as **Appendix J**.

The Google Satellite Imagery below shows the location of the proposed sewer line and sewer bridge, where it crosses Sand River and a wetland and the location of the wastewater treatment plant in relation to the proposed development.



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
GNR 327: - Activity 19: The infilling of material of more than 10m ³ and excavation and removal of soil of more than 10m ³ from a watercourse	Construction of a pipe bridge across Sand river. Material that will be removed from the watercourses and backfilled is approximately 250m ³ .
	Laying of the new sewer pipeline across a wetland, whereby more than 10m ³ of material will be removed and backfilled.
GNR. 324:- Activity 12 (b)(iii)(iv): The clearance of an area of 300 square metres 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. b. Free State i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or iv. Areas within a watercourse or wetland; or within 100 metres from the edge of a watercourse or wetland.	The proposed site will be subjected to indigenous vegetation clearance on an area zoned as open space in the SDF Map and from watercourse (wetland and Sand River).

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) of GN 326, Regulation 2014 as amended. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

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

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

a) Site alternatives

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

In the case of linear activities:

Alternative:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
• Starting point of the activity	28° 18' 23.28"	27° 57' 23.22"
• Middle/Additional point of the activity	28° 18' 12.92"	27° 57' 31.65"
• End point of the activity	28° 17' 47.22"	27° 57' 33.88"
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S3 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

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.
(No route alternatives)

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 (N/A)

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

c) Technology alternatives

Alternative 1 (preferred alternative)
The material of the proposed pipeline, uPVC was selected because it would not deteriorate to exposure of the direct sunlight, where it crosses the Sand River. The proposed sewer bridge will fully support the pipeline at a straight gradient so that it does not experience sagging pressure. The sewer pipeline will be gravity-fed; thus, the flow will not be pressurized. Thus, no further technology alternatives were considered.
Alternative 2
Alternative 3

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

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

e) No-go alternative

If the construction of the proposed sewer pipeline and pipe bridge does not go ahead as planned, the new residential development of Extension 5 in Fateng tse Ntsho, won't be able to connect to the wastewater treatment plant, therefore the municipality would fail to provide basic sanitation services to the residents and this could end in social unrests within the area. The residents could also resort to building sub-standard sanitation facilities, e.g. pit latrines, which could contaminate the groundwater, endanger their lives and threatens their dignity too.

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 A1¹ (preferred activity alternative)
 Alternative A2 (if any)
 Alternative A3 (if any)

Size of the activity:

	m ²
	m ²
	m ²

or, for linear activities:

Alternative: (Pipeline)

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

Length of the activity:

	1580m
	m
	m

Alternative: (Bridge)

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

Length of the activity:

	140m
	m
	m

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

Alternative:

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

Size of the site/servitude:

	m ²
	m ²
	m ²

4. SITE ACCESS

Does ready access to the site exist?

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

YES	

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

Describe the type of access road planned:

Should there be a need to make new dirt road, it would be used only for construction purposes and thereafter, it will be rehabilitated to enable plant succession.

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.

Locality Map for the Proposed Route is attached hereto as **Appendix A1**.

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.

Route Plan is attached hereto as **Appendix A2**.

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.

Sensitivity Map for the Proposed Route is attached hereto as **Appendix A3**.

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.

Photographic History is attached hereto as **Appendix B**.

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.

Facility Illustration (Design Drawings) are attached hereto as **Appendix C**.

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	NO	Please explain
The proposed activity does not alter the existing land use rights. The proposed pipeline runs south of the N5 National Road and the proposed sewer pipe bridge runs parallel to the traffic bridge.		
2. Will the activity be in line with the following?		
(a) Provincial Spatial Development Framework (PSDF)	YES	Please explain
The undertaking of the BA Process will ensure that the development is carefully and sensitively managed to promote spatial sustainability. In the PSDF, the Strategic Framework for water services sets out seven goals for water and sanitation and the one relevant for this project is <i>“All people living in South Africa should have access to an appropriate, acceptable and affordable basic water supply and sanitation”</i> . There are key provincial priorities that have been identified and the second key priority area focuses on human and social development, whereby it is indicated that basic infrastructure backlogs still exists, thus it is imperative for municipality to address such, as a result the proposed development will decrease the number of people without adequate sanitation within the Paul Roux/Fateng tse Ntsho area. The project will enable safe and appropriate treatment and/or removal of human waste and wastewater in an environmentally friendly manner at the new Extension 5 settlement. It is evident that the residents would have access to decent sanitation facilities, that will not compromise their health and wellbeing and they will be able to use them with dignity. This proposed project is in line with the Provincial efforts to improve social services and infrastructure for the community of Paul Roux/Fateng tse Ntsho, especially the residents of Extension 5 in this instance.		
(b) Urban edge / Edge of Built environment for the area	YES	Please explain
Yes, it is located within the urban edge between Fateng the Ntsho and Paul Roux and the pipeline servitude will be registered after it has been constructed.		

<p>(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?).</p>	<p>YES</p>		<p>Please explain</p>
<p>According to the IDP 2015 – 2016/2012-2017, the municipality’s target for Basic Service Delivery and Infrastructure outlines sanitation as one of the services that must be met within its municipal area, therefore with the planned sewer pipeline and sewer pipe bridge, this target will be met for the new extension of Fateng tse Ntsho. The undertaking of the BA process will also address the municipality’s strategy of ensuring services are provided in a sustainable manner thus promoting a safe and healthy environment. One of the municipality’s objectives is to increase the number of households with access to sanitation and to provide quality Basic Sanitation services, therefore with this planned development, the objective would be met for the new residential development. Some of the development priorities within DLM is providing and facilitating sustainable infrastructure through infrastructure provision and alleviate housing need. The vision established for Paul Roux and Fateng tse Ntsho is “<i>To be a unique farm village with sustainable and environmentally friendly development</i>”. The extension of Fateng tse Ntsho is also identified in the SDF and for every settlement that is developed, basic services must be provided by the municipality, hence the proposed infrastructure development is crucial. The urban and rural objectives contained in the SDF are for the effective integration of communities especially low income communities into the urban area as a whole, provision of services/bulk infrastructure for the purpose of appropriate land development and expansion and lastly improvement of basic living conditions standards. Given, the above it is evident that the development would not compromise the integrity of the IDP and SDF.</p>			
<p>(d) Approved Structure Plan of the Municipality</p>		<p>NO</p>	<p>Please explain</p>
<p>Dihlabeng Local Municipality does not have an approved structure plan.</p>			

<p>(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?)</p>	<p>YES</p>		<p>Please explain</p>
<p>It is indicated in the DLM's EMF that pressure on the environment within the municipal area include the need to provide services such as water, sanitation, and electricity. The lack of proper sanitation poses a serious threat of polluting groundwater, therefore, with implementation of the proposed development, adequate sanitation facilities will be provided and proper management of sewer in place. It should be noted that the DLM's priorities contained in the IDP are linked to the EMF with priority 1 being to improve services, e.g. sanitation, maintenance and upgrading of sanitation infrastructure including provision of new infrastructure, of which in this application it would be new sewer pipeline and sewer pipe bridge. Therefore, during the undertaking of the Basic Assessment, mitigation measures must be put in place to address and risk of pollution as a result of the proposed development and must be aligned with the principles of sustainable development.</p>			
<p>(f) Any other Plans (e.g. Guide Plan)</p>	<p>YES</p>		<p>Please explain</p>
<p>The proposed development is in line with the Free State Provincial Growth Development Strategy, as 4 Key Performance Areas are identified and the one applicable is to develop and enhance infrastructure for economic growth and social development and to ensure a safe and secure environment for all people of the province.</p>			
<p>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)?</p>	<p>YES</p>		<p>Please explain</p>
<p>Infrastructure development and provision of adequate sanitation facilities is one of the priorities within the municipal area.</p>			
<p>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.)</p>	<p>YES</p>		<p>Please explain</p>
<p>On the local level it is crucial the proposed development takes place for the provision of basic services (sanitation provision/sanitation infrastructure). There will be temporary creation of jobs during the construction phase for skilled and general workers as well as involvement of local sub-contractors for upskilling.</p>			

<p>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	<p>YES</p>		<p>Please explain</p>
<p>During the undertaking of the EIA for the new settlement, it was confirmed that the treatment works has adequate capacity to accommodate the new Extension 5 residential development.</p>			
<p>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	<p>YES</p>		<p>Please explain</p>
<p>There will be no implication on the infrastructure planning of the municipality as the municipality is the applicant in this regard and on completion of the construction phase, after site handover, the municipality will be responsible for the operation and maintenance of the pipeline.</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>		<p>NO</p>	<p>Please explain</p>
<p>The project is to benefit the residents to be relocated to the new Extension 5 settlement, therefore, it will be to address a local concern for DLM.</p>			
<p>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</p>	<p>YES</p>		<p>Please explain</p>
<p>The location favours the proposed development as there is no other feasible alternative that the municipality could implement to provide sanitation facilities to the new development. The pipeline is required to connect to the existing outfall sewer located on the north eastern side of the Sand River, from the new Extension 5 located on the south western side. Due to the topography of the area, the pipeline must be a gravity fed network so that maintenance costs are not excessive during operation. Therefore, for the new development to be connected to the outfall sewer line, the sewer pipeline must cross the Sand River, hence a sewer pipe bridge is part of the development, so that it could carry the sewer pipeline across.</p>			

9. Is the development the best practicable environmental option for this land/site?	YES		Please explain
<p>For the sewer pipeline to be constructed from Extension 5 to the water treatment plant via connection to the existing outfall sewer near Fateng tse Ntsho, there will be watercourse crossings along the route, hence it is proposed that a sewer pipe bridge must be constructed so that the pipeline can be carried across the Sand River. The impacts will be temporary and with implementation of outlined mitigation measures during construction and management measures for operation, it is considered a best practicable environmental option.</p>			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES		Please explain
<p>The identified environmental impacts are short-term, therefore with careful planning and practicing due diligence during the construction phase, together with proper site re-instatement any potential residual environmental impacts will be limited. After rehabilitation, the receiving environment will be returned to its natural state to a greater extent and functionality reinstated. This will negate the long-term significant impacts imposed on the respective systems. The residents of the Extension 5 development, although construction phase has not commenced will benefit from the proposed infrastructure development, because they will have access to adequate sanitation facilities, and this will be a permanent positive impact. Therefore, the positive impacts do outweigh the negative impacts. During the operation phase, the municipality will be responsible for the operation and maintenance of the sewer pipeline.</p>			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?		NO	Please explain
<p>There will be no need to construct a new sewer pipeline that would need to cross the Sand River, drainage line and the wetland; therefore, the proposed infrastructure development would not set a precedent.</p>			
12. Will any person's rights be negatively affected by the proposed activity/ies?		NO	Please explain
<p>From the public participation process undertaken, no objections were received thus it is assumed that no person's rights will be negatively affected.</p>			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		NO	Please explain
<p>The proposed development occurs between Paul Roux and Fateng tse Ntsho, therefore, it does not compromise the urban edge.</p>			

14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	Please explain
<p>It will contribute to SIP 6-Integrated Municipal Infrastructure Project- Develop national capacity to assist the 23 least resourced districts (19 million people) to address all the maintenance backlogs and upgrades required in water, electricity, and sanitation bulk infrastructure. As the construction of the pipeline will contribute to the sanitation bulk infrastructure in Paul Roux/Fateng tse Ntsho.</p>		
15. What will the benefits be to society in general and to the local communities?	Please explain	
<p>The community will have access to safe and adequate sanitation facilities including an environment in which wastewater is handled and disposed in a way that would not harm their health and wellbeing.</p>		
16. Any other need and desirability considerations related to the proposed activity?	Please explain	
<p>The municipality would be in a good position to ensure provision of basic services, <i>i.e.</i> adequate sanitation to the new establishment.</p>		
17. How does the project fit into the National Development Plan for 2030?	Please explain	
<p>The aim of the NDP is to eliminate poverty and reduce inequality by 2030 and one of the challenges is that infrastructure is inadequate. Therefore, the proposed infrastructure development is in line with the NDP as it would enable the new settlement to be connected to the outfall sewer network and this would ensure that the municipality is working onwards transforming human settlements. It is also indicated that infrastructure is not only essential for faster economic growth and higher employment, it also promotes inclusive growth, providing citizens with the means to improve their own lives and boost their income. Although sanitation is not covered under economic infrastructure, but to have a fully developed settlement, it is a necessity.</p>		

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

The objectives of IEM have been considered because DLM, as the applicant will be accountable and take responsibility of ensuring implementation and compliance of the conditions that will be set out in the Environmental Authorisation and Water use License. The Department of Water and Sanitation will ensure that the impacts on the watercourse during the laying of the pipeline are localized and mitigated to a greater extent as well as review and approval of the Emergency Preparedness in case of accidental leaks during operation phase. Public Participation Process was undertaken and during the process, means of empowering people so that they can have meaningful involvement were sought. Comments and input received during review of the Draft BAR, will be captured so that they can be considered during decision-making. Some of the identified aspects were addressed by specialists to ensure that proper mitigation measures and recommendations are outlined to minimize the negative impacts on the receiving environment. Mitigation and management measures that are outlined will ensure that no-one is adversely affected, particularly the vulnerable and disadvantaged individuals. On completion of the project, there will be access to adequate sanitation for the Extension 5 community. The information obtained during the Basic Assessment and Water Use License Processes will be reported to DESTEA, and DWS in a manner that will enable them to make an informed decision with regard to the proposed development.

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

The proposed development will enable the municipality to serve the Extension 5 community with adequate sanitation facility that can promote their dignity, therefore the needs of the people are placed at the forefront of Environmental management and it will serve their social interest. The sensitivity of the receiving environment has been taken into consideration and specialists' studies have been undertaken to ensure aspects related to the proposed development are addressed so that the negative impacts are localised and there will be no residual environmental degradation of the river system thus deteriorating the river health. During construction, there will be containers provided to contain general and construction waste and the contents thereof will be emptied to the registered landfill site in Paul Roux. All the legislation and regulations relevant to the proposed development will be complied with and the municipality will implement the mitigation and management measures outlined in the environmental reports. Public participation process was undertaken as part of the BA and Water Use License Application Process.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)	<p>Chapter 2-Bill of Rights</p> <p>Section 10: Right for the dignity to be respected</p> <p>Section 24: Environmental Right</p> <p>Section 27(1)(b): Right of access to enough water</p> <p>Section 32: Right to access of Information</p> <p>The provision of sanitation would ensure the dignity of Extension 5 residents is respected and no-one's environmental right is infringed upon as a result of the proposed development. During the public participation process, information regarding the proposed development would be made available and no-one will be prohibited from accessing the environmental report.</p>	Government of South Africa	04 February 1997
National Environmental Management Act (Act 107 of 1998)	<p>Chapter 1-National Environmental Management Principles</p> <p>Section 2: National Environmental management principles.</p> <p>Chapter 5-Integrated Environmental Management</p> <p>Section 24: Environmental Authorisation (control of activities which may have a detrimental effect on the environment).</p> <p>Chapter 7: Compliance and Enforcement</p> <p>Section 28: Duty of care and remediation of environmental damage.</p> <p>Section 29: Protection of workers refusing to do</p>	Department of Environmental Affairs	29 January 1999

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	<p>environmentally hazardous work.</p> <p>Measures must be in place to ensure activities that are to be undertaken during the duration of this project will not result in environmental degradation. The environmental legislation must be complied with and no-one must be exposed to hazardous working conditions.</p>		
Environmental Impact Assessment Regulation, 2014 as amended	Listing Notice 1 of 2014 (GNR 387) – which set out activities which require a BA before an Environmental Authorisation may be issued	Provincial Environmental Affairs-DESTE A	07 April 2017
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	Chapter 4-Air Quality Management. Measures Section 32: Control of Dust Section 34: Control of Noise. Measures must be in place to control excessive generation of dust and noise during the construction phase.	Department of Environmental Affairs	11 September 2005
National Environmental Management: Biodiversity Act (Act 10 of 2004)	Chapter 5-Species and organisms posing threat to the Biodiversity Section 75: Control and eradication of Listed Alien Invasive Species To ensure measures are in place to eradicate and control establishment of alien invasive species along the proposed route.	Department of Environmental Affairs	01 September 2004
National Environmental Management: Waste Act (Act 59 of 2008)	Chapter 4-Waste Management Measures Section 21: General Requirements for Storage of Waste Section 26: Prohibition of unauthorised disposal Section 27(2)(a): Littering To ensure waste generated is handled and disposed efficiently in a way that it would not pollute the receiving environment.	Department of Environmental Affairs	01 July 2009

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National Water Act (Act No. 36 of 1998)	Chapter 3 – Protection of Water Resources. Section 19 – Prevention and remedying effects of pollution. Section 20 – Control of emergency incidents. Chapter 4 – Use of Water Section 21: Licensing of Water Uses To ensure measures are in place to prevent pollution of the wetland and Sand River, which will be crossed by the proposed pipeline and sewer pipe bridge.	Department of Water and Sanitation	06 December 1999
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	Section 5: Prohibition of spreading of weeds. Section 6(e)(f)(j)(l): Control Measures To ensure there are measures in place to control spreading of weeds.	Department of Agriculture, Forestry and Fisheries	01 June 1984
Occupational Health and Safety Act (Act 15 of 1993)	Provisions for Occupational Health & Safety in the workplace.	Department of Labour	23 June 1993
Water Services Act, 1997 (Act No 108 of 1997)	To provide for the rights of access to basic water supply and basic sanitation	Dihlabeng Local Authority	19 December 1997

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

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

YES

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

It is not possible to estimate the amount of solid waste that will be generated during the construction phase, as spoil material from the trenches may vary greatly and little general solid waste will be generated.

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

Refuse bins with lids will be provided in the construction site and when full it will be transported from the site for disposal. The engineer will indicate how the spoil material will be disposed or used.

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

Construction solid waste will be disposed of at the solid waste site in Paul Roux.

Will the activity produce solid waste during its operational phase?

	NO
	m ³

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

	m ³
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Will the activity produce any effluent that will be treated and/or disposed of on site?

	NO
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If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility? YES NO

If YES, provide the particulars of the facility:

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

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

Due to the nature of the proposed project, no wastewater will be generated during the construction or operational phase of the activity.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities? YES NO

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

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

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

The carbon monoxide emission from construction vehicles, will be in exceptionally low quantities therefore negligible. However, construction vehicles would be kept in a good working condition by ensuring regular inspection and maintenance is in place. There will be excessive generation of dust from construction related activities, which is temporarily, and measures will be in place to ensure that it is controlled and does not cause any harm to human health or well-being. The nearest sensitive receptor that could be affected by the dust generation is the N5 road users, as this could reduce visibility on the road but due to the project specifications, the probability is exceptionally low.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA? YES NO

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

e) Generation of noise

Will the activity generate noise?

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

YES	<input type="checkbox"/>
<input type="checkbox"/>	NO

Describe the noise in terms of type and level:

The noise that will be generated will be associated with construction activities, e.g. excavation, earthmoving, drilling, pumping, movement of construction machinery and equipment, however, these activities would be during normal working hours. Potential sensitive receptors within proximity of the construction site are the national Road N5 road users, Paul Roux located ±400m and Fateng tse Ntsho in ±600m. However, mitigation measures would be put in place to control noise emissions to acceptable standards.

13. WATER USE

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

Municipal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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 litres

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

YES	<input type="checkbox"/>
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If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

Pre-application consultation was held with the DWS and an application will have to be lodged online using the e-WULAAS portal.

14. ENERGY EFFICIENCY

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

The pipe has been designed in a way that it gravitates and would not require any pumpstation during operation. This will ensure municipality does not incur additional costs for maintenance and operation of a pumpstation during operation of the pipeline.

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

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

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

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

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

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

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

**Property description/
physical address:**

Province	Free State
District Municipality	Thabo Mofutsanyane District
Local Municipality	Dihlabeng Local Municipality
Ward Number(s)	17
Property 1	
Farm name and number	Farm Mary Ann 711
Portion number	Remainder
SG Code	F03000000000071100000

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.

The property description for the properties involved in addition to the one above is attached hereto as **Appendix A4**.

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

Open Space per Paul Roux/Fateng tse Ntsho SDF Map

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**

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50	-		1:20	
------	------	---	--	------	--

Alternative S2 (if any):

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

Alternative S3 (if any):

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

2. LOCATION IN LANDSCAPE

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

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input checked="" type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>
2.10 At sea	<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)	NO		
Dolomite, sinkhole or doline areas	NO		
Seasonally wet soils (often close to water bodies)	YES		

Unstable rocky slopes or steep slopes with loose soil	<input type="checkbox"/>	<input type="checkbox"/>	NO	
Dispersive soils (soils that dissolve in water)	<input type="checkbox"/>	<input type="checkbox"/>	NO	
Soils with high clay content (clay fraction more than 40%)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	YES	
Any other unstable soil or geological feature	<input type="checkbox"/>	<input type="checkbox"/>	NO	
An area sensitive to erosion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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.

The Geotechnical Report is attached hereto as **Appendix D1**.

4. GROUND COVER

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).

	<input checked="" type="checkbox"/> Natural veld with scattered aliens ^E	
Sport field		Gardens
		Bare soil

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

The Ecological Report is attached hereto as **Appendix D2**.

5. SURFACE WATER

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

Perennial River	YES	
Non-Perennial River		
Permanent Wetland		
Seasonal Wetland	YES	
Artificial Wetland		
Estuarine / Lagoonal wetland		

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

The area falls within the Upper Vaal Catchment Management Area (C42A) and the proposed sewer pipeline crosses the Sand River and a wetland from the new Extension 5 settlement, which is still to be constructed to connect via an existing outfall sewer line to the Paul Roux Water treatment plant. Sand River forms part of the Regional Surface Water Catchment and Drainage area and subsequently supports an important habitat, which is likely utilised a wide variety of specialised water birds, amphibians species and aquatic invertebrates for breeding and foraging persistence purposes. The small portion to be crossed constitute mainly of aquatic species, hydrophytic grass species, few individuals of the legally declared invasive species within the broader landscape and no woody representation due to the more constant water flows.

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	
Medium density residential	
Landfill or waste treatment site	
River, stream or wetland	
	Nature conservation area (Conservancy)

Major road (4 lanes or more)^N	Graveyard
Other land uses (describe)	Eskom overhead powerline

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

N/A

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

N/A

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

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

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

7. CULTURAL/HISTORICAL FEATURES

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

	NO
Uncertain	

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

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

	NO
--	----

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

	NO
--	----

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

The Heritage Assessment Report is attached hereto as **Appendix D3**.

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:

Largest percentage in the municipal area are unemployed. Dependency Ratio per 100 (15-64) 2011 was 53.5%. According to the Global Insight, Region eXplorer, 2013, the poverty rate within the municipal area was at 35.0% in 2012.

Economic profile of local municipality:

The local economy in Paul Roux/Fateng tse Ntsho is dominated by the Community and Government Services Centre. The largest portion of employed adults earn less than R401. There are no industrial sites. Paul Roux is located 35km west of Bethlehem, the large service centre within DLM.

Level of education:

According to the Thabo Mofutsanyana IDP (2012/2016), in 2011, Dihlabeng Local Municipality's level of education for Primary Educational Enrolment was 96.2%, Matric was 25.4%, Higher Education was 5.4% and no schooling was 8.5%.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 14 887 086.50
What is the expected yearly income that will be generated by or as a result of the activity?	N/A
Will the activity contribute to service infrastructure?	YES
Is the activity a public amenity?	YES
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?	R4 466 125.95
What percentage of this will accrue to previously disadvantaged individuals?	30%
How many permanent new employment opportunities will be created during the operational phase of the activity?	0
What is the expected current value of the employment opportunities during the first 10 years?	R0
What percentage of this will accrue to previously disadvantaged individuals?	N/A

9. BIODIVERSITY

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

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

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
				The localised surrounding areas fall within a Critical Biodiversity Area 1 and that ESA's are areas that must be maintained in at least fair ecological condition (semi-natural/moderately modified state) in order to support the ecological functioning of a Critical Biodiversity Area or protected area or that play an important role in delivering ecosystem services (Collins, 2017).

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

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	-	
Near Natural (includes areas with low to moderate level of alien invasive plants)	77	The Present Ecological State (PES) of the proposed sewer tunnel bridge area is classified as Class B as it is largely natural. A small change in natural habitats and biota may have taken place due to the presence of the N5 national highway and the subsequent existing traffic bridge which traverses the Sand River, but the ecosystem functionality has remained essentially unchanged. Virtually the entire portion of the proposed pipeline route which runs parallel and directly

		<p>adjacent south of the N5 national highway (majority of pipeline), is situated within a significantly sized wetland associated with the relevant Eastern Free State Clay Grassland vegetation type (Gm 3). This large wetland area has however been fragmented into a northern and southern portion by the presence of the N5 national highway.</p> <p>Although continuous grazing by cattle from the local community takes place within the hydrophytic grassy wetland area, no signs of any significant overgrazing are evident.</p> <p>The remaining south-western portion of the proposed pipeline route which diverts away from the N5 national highway, mainly runs along the boundary fence of the adjacently located cemetery. This portion constitutes a terrestrial area associated with the relevant Eastern Free State Clay Grassland vegetation type (Gm 3).</p> <p>With the exception of the pipeline portions discussed as degraded below, the terrestrial portions of the proposed pipeline route support undisturbed relatively natural grassland associated with the relevant Eastern Free State Clay Grassland vegetation type (Gm 3).</p> <p>The Present Ecological State (PES) of the majority of the proposed pipeline route is classified as Class B as it is largely natural. A small change in natural habitats and biota may have taken place due to the presence of the N5 national highway, the cemetery boundary fence as well as historic road and pipeline construction, but the ecosystem functionality has remained essentially unchanged. With the exception of the provincially protected species <i>Helichrysum rugulosum</i> only found to be present within the remaining relatively undisturbed natural portions of the terrestrial grassland, no Red Data Listed species or any other species of conservational significance were found to be present within the proposed sewer tunnel bridge area or along the proposed pipeline route.</p>
Degraded	23	The terrestrial pipeline portion running along the

(includes areas heavily invaded by alien plants)		cemetery boundary fence as well as the most southerly portion of the proposed pipeline route is in a slightly disturbed state caused by anthropogenic disturbances such as historic fence, road, and pipeline construction.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)		

c) Complete the table to indicate:

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

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

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

The entire assessment falls within the Eastern Free State Clay Grassland vegetation type (GM 3), which is characterized by flat to slightly undulating and undulating /rolling grasslands with streams and rivers that drain the foothills of the Drakensberg. The vegetation type is classified as a Nationally Listed Vulnerable Ecosystem in accordance with the Department of Environmental Affairs' 2011 List of Nationally Threatened Ecosystems. This also renders the entire vegetation type a priority ecosystem for conservation on a national scale. The proposed sewer bridge crosses the Sand River and constitutes a significant perennial watercourse and forms an important part of the regional surface water catchment and drainage area. The small portion of the River where the sewer pipe bridge is to be constructed, mainly constitutes an aquatic environment dominated by aquatic and hydrophytic vegetation. There is no significant woody component present and merely a small number of the individuals of the legally declared invasive species *Populus spp*, (Category 2) and the exotic species *Salix babylonica* are sparsely present within the broader landscape. Individuals of the legally declared invasive species *Rosa rubiginosa* (Category 1b) are also sparsely present. The development area is mainly dominated by aquatic species *Typha capensis*, *Phragmites australis* and *Cyperus spp*. Other hydrophytic grass species area also found to be present on the banks of the River include *Eragrostis plana*, *Paspalum dilatatum* and *Sporobolus africanus*. No Red Data Listed species or any other species of conservational significance were found to be present within the proposed sewer tunnel bridge site, except for the provincially protected *Helichrysum rugulosum*. Although no important bird species were identified during the site assessment, the River supports an important aquatic habitat, which is likely utilised by a wide variety of specialised waterbirds, amphibians species and aquatic invertebrates for breeding, foraging and persistence purposes. The PES of the proposed site is classified as Class B as it is largely natural and the Ecological Importance and Sensitivity is classified as Class C (Moderate) as it is viewed as being ecologically important and sensitive on a local or possibly provincial scale mainly due to the Sand River forming part of the regional surface water catchment and drainage area. There is a large wetland that has been fragmented into a northern and southern portion by the presence of the N5. The wetland area is dominated by the hydrophytic grass species. There are no Red Data Listed or any other species of conservational significance found to be present along the wetland area. The proposed pipeline will transverse a small water drainage line before it connects to the outfall sewer line near Fateng.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Die Telegraaf	
Date published	February 2020	
Site notice position	Latitude	Longitude
	28°18'02.5"	27°57'29.6"
Date placed	13 February 2020	

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

Proof of Newspaper Advertisement, On Site Notice and Posters are attached hereto as **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 326

The measures that were undertaken to include the potential I&APs are as follows:

The on site notice was placed at the sewer pipeline crossing site and thereafter posters were placed at the library in Fateng tse Ntsho, Police Station and Municipal office. No public meetings were held as no-one registered as an interested and affected party and no concerns/objections were received.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 326

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
Cllr. Mkwanazi	Councillor (Ward 17)	060 576 3309 cllausanamkhwanazi@dihlabeng.co.za

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.

The Background Information Document was emailed to the Ward Councillor, Cllr. Mkhwanazi but no read receipt was received. However, telephonic discussions were also held with regards to the application and there are no concerns regarding the proposed pipeline route.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES (

(No issues were received during the notification phase of the Public Participation Process)

Summary of main issues raised by I&APs	Summary of response from EAP

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.

No comments were received from the notification phase of the Public Participation Process. The Comments and Responses Report will be included after the reviewing of the Draft BAR.

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
DESTEА	Ms. Refiloe Likhoele	051 400 4813	-	likhoeler@detea.gov.za	Private Bag X20801 Bloemfontein 9300
Dihlabeng Local Municipality (Environmental Officer)	Mr. Mpho Motaung	079 052 0486	058 303 4703	mphom@dihlabeng.co.za	P.O. Box 551 Bethlehem, 9700
SANRAL	Ms. Thandeka Ngema		086 275 7396	ngemat@nra.co.za	
Eskom	Ms Jeanine Burger/ Mr. Earl Daniels	051 404 2439	051 404 5759	Burgerje@eskom.co.za DanielEC@eskom.co.za	P.O Box 356 Bloemfontein 9300
Department of Water and Sanitation	Mr George Nel	051 405 9000	051 430 8146	NelG@dws.gov.za	P.O. Box 528 Bloemfontein 9300
SAHRA	Ragna Redelstorff	012 462 4502	021 202 4509	rredelstorff@sahra.gov.za	P.O. Box 4637 Cape Town, 8001

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.

Proof of confirmed receipt of email received from DWS and SANRAL are attached hereto as **Appendix E4**.

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.

No-one registered as an I&APs.

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

Copies of e-mail notifications sent to identified I&APs are attached hereto **Appendix E6**.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 as amended and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

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

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

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
PLANNING AND DESIGN PHASE			
Poor design of the sanitation infrastructure that could result in structural defects or collapse of the sanitation system could negatively affect the receiving environment.	Direct impacts:	High	Appendix 7
	Indirect impacts:		
	Cumulative impacts		
Adherence to applicable Environmental Legislation	Direct impacts:	High	Appendix 7
	Indirect impacts		
	Cumulative impacts		
Socio-economic-Employment of local labourers during construction	Direct impacts:	Low	Appendix 7
	Indirect impacts:		
	Cumulative Impacts		

Activity	Impact Summary	Significance	Proposed Mitigation
CONSTRUCTION PHASE			
Destruction/Damage of Red Data Listed, Nationally or Provincially protected species (Pipeline)	Direct impacts:	Low	Appendix 7
	Indirect impacts:		
	Cumulative impacts:		
Destruction of vegetation due to clearance of vegetation on the Sand River. (Sewer Pipe Bridge)	Direct impacts:	Low	Appendix 7
	Indirect impacts:		
	Cumulative impacts:	Low	Appendix 7
Transformation of Vegetation-Pipeline	Direct impacts:		
	Indirect impacts:	Medium	Appendix 7
	Cumulative impacts:		
Transformation of Riparian Vegetation-Sewer Pipe Bridge	Direct impacts:		
	Indirect impacts:	Low	Appendix 7
	Cumulative impacts:		
Increased risk of soil erosion	Direct impacts:		
	Indirect impacts:	Medium	Appendix 7
	Cumulative impacts:		
Spread of alien invasive species	Direct impacts:		
	Indirect impacts:	Medium	Appendix 7
	Cumulative impacts:		
Contamination of the Sand River, wetland and small drainage ephemeral drainage line.	Direct impacts:	Medium-High	Appendix 7
	Indirect impacts:		
	Cumulative impacts:	Medium-High	Appendix 7
Disturbance to the Sand River Characteristics (Impeding water flow)	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:	Medium	Appendix 7
Destruction of the ecological services provided by the wetland.	Direct impacts:		
	Indirect impacts:	Medium-High	Appendix 7
	Cumulative impacts:		

DRAFT BASIC ASSESSMENT REPORT

Activity	Impact Summary	Significance	Proposed Mitigation
Construction material to be used for bedding and backfilling	Direct impacts:		
	Indirect impacts:	Medium	Appendix 7
	Cumulative impacts:		
Impact on the flow of traffic on the N5 Highway	Direct impacts:	Low	Appendix 7
	Indirect impacts:		
	Cumulative impacts:		
Impact on the Heritage Artefacts	Direct impacts:	High	Appendix 7
	Indirect impacts:		
	Cumulative impacts:		
Impact on the Health and Safety of the Workers and Public	Direct impacts:		
	Indirect impacts:	Medium-High	Appendix 7
	Cumulative impacts:		
OPERATIONAL PHASE			
Potential leaks of the infrastructure that could result in soil and water pollution.	Direct impacts:	Medium	Appendix 7
	Indirect impacts:		
	Cumulative impacts:		
Alternative 2			
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
Alternative 3			
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
No-go option			
Inability for the municipality to provide basic sanitation services to the new Extension 5 Development could result in social unrests and use of poor sanitation facilities that are detrimental to the health and well-	Direct impacts:	Medium-High	The social unrests and lack of proper sanitation facilities would be curbed by the development of the proposed pipeline and sewer pipe bridge. Therefore, the no-go alternative is deemed not feasible.
	Indirect impacts:		

being of the residents.	Cumulative impacts:		
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Cumulative impacts due to the proposed development are limited because there are no similar projects taking place within the vicinity of the proposed site and the pipeline will be underground except where it crosses Sand River, thus vegetation recovery will occur if proper reinstatement and rehabilitation is implemented. As the sewer bridge is located parallel to an existing road bridge, the characteristics of Sand River and water quality will be impacted but the functionality will be restored post construction. The development will not have any impact on the existing land uses.

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

Impact Assessment is attached hereto 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)

The construction of the proposed sewer pipeline and pipe bridge from extension 5, Fateng tse Ntsho, a new establishment, which is not yet constructed to the outfall sewer connection point, to the wastewater treatment plant is necessary as it will enable the Dihlabeng Local Municipality to provide sanitation services. The pipeline must cross the watercourse because Sand River runs between the connection point, water treatment plant and the new establishment. The pipeline had to go through the wetland for it to be gravity-fed because the system must be a gravity-fed, so that it can connect to the existing outfall sewer connection point. The Paul Roux wastewater treatment plant has adequate capacity to accommodate the additional loads.

Given the required footprint to lay the pipeline, construction activities would be limited to the narrow section and with the implementation of the outlined mitigation measures during the construction phase, the impacts will be greatly minimized and furthermore rehabilitation will be done immediately on completion of construction activities to ensure that the impacted areas can return to their former function. The management measures need to be implemented during the operational phase to minimize pollution risks from leaks and overflowing.

The construction impacts will be adequately mitigated to minimize the impacts on watercourses and vegetation removal thus of low significance, localised, short term and restricted to the development footprint. There will be temporary creation of employment, which will benefit then local economy, therefore, it is imperative that local procurement be prioritized. The operational impacts will result in an environmental benefit due to fact the surrounding communities will be provided with sufficient adequate sanitation and the municipality will be able to handle, transport and dispose effluent in a sustainable manner. From the specialist studies conducted, no grounds were founded to suspend the proposed development and recommendations outlined to minimize the impact were deemed adequate.

Good construction practise and effective site supervision must be in place. If the proper mitigation procedures are followed during the construction phase, the impacts on the environment during the operational phase will be insignificant and residual impacts limited. The impacted environment will be able to return to a functional state on completion of rehabilitation phase and the likelihood of any environmental degradation post-construction will be reduced significantly. A Water Use License and Wayleaves must be obtained prior to commencement of the construction activities. Regular inspection and maintenance of the pipeline during operation phase will largely mitigate impacts associated with sewage overflows and leaks.

It is therefore proposed that the proposed construction of a sewer pipeline go ahead as planned.

Alternative B

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Alternative C

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No-go alternative (compulsory)

If the construction of the pipeline does not take place, the municipality would not be able to provide the community of the new Extension 5 Fateng tse Ntsho development with basic sanitation services and therefore, they will be on breach of their constitutional mandate as the Local Authority and Water Services Authority. This could result in social delivery protests in the area. The residents could resort to using sanitation facilities that compromise their dignity their health and wellbeing of the community would be negatively affected.

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	
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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).

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.

- An Archaeologist must be appointed to monitor excavations at the Sand river crossing as well as 10m wide sections of alluvium flanking on both sides of the river at the bridge.
- A provincial permit must be obtained from DESTEA for the removal of provincially protected species *Helichrysum rugulosum* prior to construction.
- An Alien Invasive Species Establishment and Management Prevention Plan must be implemented.
- A Comprehensive South African Scoring System must be conducted of the Sand River directly down stream of the proposed project.
- Water samples of the Sand River must be collected directly downstream of the proposed project area prior to commencement of construction phase.
- An Environmental Control Officer must be appointed prior to commencement of construction activities. Construction monitoring must include the following:
 - Temporary obstruction of access
 - Traffic management
 - Noise and dust
 - Worker’s and public’s health and safety
 - Security of the excavations
 - Onsite material storage
- A river and wetland crossing methodology must be submitted to DWS with the Water Use License application form.
- Construction material for bedding must be obtained from a commercial quarry or if a borrow pit will be used, then it must have a mining permit issued by the Free State DMR.
- The construction footprint, especially at watercourse crossings must be cordoned off to ensure activities are limited to the development footprint.
- Impacted areas must be rehabilitated immediately when construction activities cease, therefore a Rehabilitation Plan must be compiled and reviewed by an Environmental Control Officer.
- Impacted watercourses must be monitored for 12 months post rehabilitation for potential erosion.

DRAFT BASIC ASSESSMENT REPORT

Is an EMPr attached?

YES

The EMPr must be attached as Appendix G.

The EMPr is attached hereto 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.

The details of the EAP and expertise are contained in the CV attached hereto 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.

The Declaration of Interest for the Specialists are attached hereto as **Appendix I**.

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

Additional Information that is attached hereto as **Appendix J** is the Technical Report.

Lorato Tigedi *Pr. Sci. Nat.*

NAME OF EAP

SIGNATURE OF EAP

2020-08-21

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

APPENDIX A1

LOCALITY MAP

APPENDIX A2

ROUTE MAP

APPENDIX A3

SENSITIVITY MAP

APPENDIX A4

PROPERTY DESCRIPTION

APPENDIX B

PHOTOGRAPHS

APPENDIX C

FACILITY ILLUSTRATION (DESIGN DRAWING)

APPENDIX D

SPECIALISTS' REPORTS

D1: GEOTECHNICAL REPORT

APPENDIX D2: ECOLOGICAL REPORT

APPENDIX D3: HERITAGE REPORT

APPENDIX E

PUBLIC PARTICIPATION RECORDS

APPENDIX F

IMPACT ASSESSMENT

APPENDIX G

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

APPENDIX H

DETAILS OF EAP AND EXPERTISE

APPENDIX I1

LETTER OF CONFIRMATION FROM DIHLABENG LOCAL MUNICIPALITY (NOT ATTACHED)

APPENDIX I2

DECLARATION OF SPECIALISTS

PROPOSED SEWER PIPELINE AND PIPE BRIDGE, PAUL ROUX,
DIHLABENG LOCAL MUNICIPALITY
DESTEA REF. NO.: EMB/19,12/20/09

GEOTECHNICAL ENGINEER

ECOLOGIST

PROPOSED SEWER PIPELINE AND PIPE BRIDGE, PAUL ROUX,
DIHLABENG LOCAL MUNICIPALITY
DESTEA REF. NO.: EMB/19,12/20/09

HERITAGE SPECIALIST

APPENDIX J

OTHER: TECHNICAL REPORT