

BASIC ASSESSMENT REPORT

(For official use only)

File Reference Number:

NEAS Number:

Date Received:

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

CHDM CLUSTER 9 PHASE 5 & CLUSTER 8 LINKAGE

BASIC ASSESSMENT REPORT (BAR) FOR 30-DAY REVIEW PERIOD

CLOSING DATE FOR SUBMISSION OF COMMENTS IS 30th AUGUST 2022

COMMENTS ARE TO BE SUBMITTED AS FOLLOWS:

Please submit comments to both of the following parties:

- (i) DEDEAT (Chris Hani District)
Mrs N Mdekazi-Nkqubezelo E-mail: Nondwe.Mdekazi@dedea.gov.za

- (ii) isi-Xwiba Consulting CC
Mr C J Bradfield E-mail: isix@lcom.co.za

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. 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.
3. Where applicable **tick** the boxes that are applicable or **black out** the boxes that are not applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. 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.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority **unless indicated otherwise by the Department.**
7. No faxed or e-mailed reports will be accepted **unless indicated otherwise by the Department.**
8. The report must be compiled by an independent environmental assessment practitioner (EAP).
9. 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.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

SECTION A: ACTIVITY INFORMATION

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

YES	NO
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If YES, please complete form XX for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail

The Cluster 9 Backlog Water Project is a regional cross boundary project to provide bulk water to settlements in the Chris Hani and Amathole District Municipalities. Bulk supply infrastructure is funded under the Regional Bulk Infrastructure Grant (RBIG) and reticulation under the Municipal Infrastructure Grant (MIG). Phased development was initiated in 2010 and is on-going under the following EA's:

- (i) DEDEA Ref. 135-033-2009
- (ii) EC 135-001-2012
- (iii) NR EC 135-014-2009 (CHDM Cluster 8)
- (iv) EC135&5/HO/LN1 & 3/M/01-2017 - Butterworth Emergency Bulk Water Supply Project - Ngqamakwe Phase 5 BWSS

The District Municipalities are the Water Services Authorities for their respective areas and all the land in the project area is communal rural settlement except for Tsomo and Ngqamakwe Towns.

This project being the CHDM Cluster 9 Phase 5 and Cluster 8 Linkage will provide bulk water supply to IYLM (Ward 9) and Engcobo Local Municipality (Ward 1-Cluster 8). Cluster 8 will be supplied with water (reticulation not part of this BAR) via the proposed Nxamagele Command Reservoir, which is considered in this BAR. This is not considered a cross-border project as the IYLM and ELM are both located within the Chris Hani District Municipality being the Water Use Authority for the District.

The CHDM Cluster 9 Phase 5 and Cluster 8 Linkage project consists of the following:

- (i) Construction of a 315 mm ID pipeline linking the Ngqamakwe Command Reservoir and the proposed Nxamagele Command Reservoir. This pipeline in itself does not require an EIA process as the ID is <360 mm and the throughput <120 lt/sec. However the pipeline crosses three (3) identified watercourses/wetland areas.
- (ii) Construction of the Nxamagele Command Reservoir with a capacity of 3 500 m³ located within a CBA 2
- (iii) Construction of a 160 mm ID pipeline linking the Ngqamakwe / Nxamagele to the existing Catshile Reservoir. This pipeline does not require an EIA process

The CHDM appointed a Contractor to construct these works, prior to any EIA process or investigation. The EAP met with Mrs N Mdekazi-Nkqubezelo on 13th April 2022 prior to the Contractor implementing construction; see correspondence dated 13th April 2022 and EQM response dated 19th April 2022.

The outcome of the discussion with the EQM (CHD) was that construction could commence on the two pipelines, but that construction should stop short of any watercourse/wetland area and then re-commence on the opposite boundary of such watercourse/wetland - thus no construction within a wetland/watercourse. The sections of pipeline through a wetland/watercourse must be subjected to an EIA process (BAR) as well as the Nxamagale Command Reservoir. It must be noted that the decision by the EQM was based on this being a service delivery project and to assist the CHDM in not incurring financial losses due to claims from the Contractor. The correspondence from the EQM made it clear that implementation as considered, was at the applicant's/Consulting Engineer's risk.

A wetland specialist and WULA specialist were appointed to inspect the Ngqamakhwe/Nxamagale pipeline route and demarcate the wetland/watercourse areas, which are not to be traversed until an EA and any authorisation that may be required in terms of the NWA is issued.

A heritage specialist was appointed to identify heritage/cultural sites to be avoided.

The access road considered by the Consulting Engineer and discussed in the correspondence (App G1) was discarded as this was mostly located within ADM and would result in this being a cross-border project, which would cause delays. The Consulting Engineer was advised and it was agreed that no access road would be "constructed" to access the area, pipeline routes or Nxamagale Command Reservoir. Construction tracks should be on existing tracks where possible and would be rehabilitated at closure.

Social facilitation is being undertaken in-house by CHDM and with the appointment of an ISD specialist, Q-Projek. This is discussed further in Section C; See also Appendix G2 and Appendix E section 4.1.

The BAR process was initiated through a PPP, which commenced on 26th May 2022 with advertising and provision of the BID to DEDEAT, DWS, ECPHRA, Intsika Yethu LM, Engcobo LM and respective Ward Councillors; see Section C and Appendix E.

This BAR and the application for an EA is only in respect of the following:

- (i) Nxamagale Command Reservoir (3.5 ML / 3 500 m³)
- (ii) Three (3) wetland crossings at positions B-C, D-E and F-G as indicated on the locality map Appendix A2

1.1 NEMA ACTIVITIES CONSIDERED

Listed activity as described in GN R.324, 325, and 327 & GN 921	Description of project activity that triggers listed activity – if activities in GN R. 324 are triggered, indicate the triggering criteria as described in the second column of GN R. 324
GN 327 – 7th April 2017	
<p>GN 327 12: The development of— infrastructure or structures with a physical footprint of 100 m² or more where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse where the definition of a watercourse includes a wetland</p>	<p>The development of pipelines and associated works within three (3) watercourse/wetland areas and within 32 m of these watercourse/wetlands where the physical footprint will be ±800 m² and development/construction associated with trenching, pipe laying and backfilling and reinstatement</p>
<p>GN 327 19: The infilling or depositing of any material of more than 10 m³ into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 m³ from a watercourse</p>	<p>Construction of pipelines through three (3) wetland areas where trenches will be excavated, pipes laid and trenches backfilled with a granular sub-surface drain placed under the pipe where the granular sub-surface drain will constitute a total of ±77 m³ of infilling for the three (3) areas.</p>
<p>GN 327 67: Phased activities for all activities—</p> <p>(i) listed in this Notice, which commenced on or after the effective date of this Notice or similarly listed in any of the previous NEMA notices, which commenced on or after the effective date of such previous NEMA Notices;</p> <p>(ii) listed as activities 5, 7, 8(ii), 11, 13, 16, 27(i) or 27(ii) in Listing Notice 2 of 2014 or similarly listed in any of the previous NEMA notices, which commenced on or after the effective date of such previous NEMA Notices;</p>	<p>Phased activities for all activities-</p> <p>(i) listed in this Notice, which commenced on or after the effective date of this Notice or similarly listed in any of the previous NEMA notices, which commenced on or after the effective date of such previous NEMA Notices excluding the activities 24(i) and 30 listed in this Notice</p>

<p>where any phase of the activity was below a threshold but where a combination of the phases including expansions or extensions, will exceed a specified threshold.</p>	
<p>GN 324 7th April 2017</p>	
<p>GN 324 2: The development of reservoirs, excluding dams, with a capacity of more than 250 m³ in the Eastern Cape-</p> <p>ii. Outside urban areas, in:</p> <p>(dd) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p>	<p>The construction of a concrete reservoir with a capacity of 3 500 m³ in a CBA 2 area as identified in the ECBCP (2019)</p>
<p>GN 324 14: The development of—</p> <p>(ii) infrastructure or structures with a physical footprint of 10 m² or more, where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse</p> <p>In the Eastern Cape-</p> <p>i. Outside urban areas:</p> <p>(ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p>	<p>The development of pipelines and associated works within three (3) watercourse/wetland areas and within 32 m of these watercourse/wetlands where the physical footprint will be ±800 m² and development/construction associated with trenching, pipe laying, backfilling and reinstatement in a CBA 2 area as identified in the ECBCP (2019)</p>
<p>GN 324 16: The expansion of reservoirs, excluding dams, where the capacity will be increased by more than 250 m³ in the Eastern Cape</p> <p>i. Outside urban areas:</p>	<p>The expansion of water storage within the CHDM Cluster 9 and Cluster 8 Water Backlog Projects by the construction of an <u>additional</u> concrete reservoir with a capacity of 3 500 m³ in a CBA 2 area as identified in the ECBCP (2019)</p>

<p>(ff) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans</p>	
<p>GN 324 26: Phased activities for all activities—</p> <p>i. listed in this Notice and as it applies to a specific geographical area, which commenced on or after the effective date of this Notice; or</p> <p>ii. similarly listed in any of the previous NEMA notices, and as it applies to a specific geographical area, which commenced on or after the effective date of such previous NEMA Notices—</p> <p>where any phase of the activity was below a threshold but where a combination of the phases, including expansions or extensions, will exceed a specified threshold; —</p> <p>excluding the following activities listed in this Notice—</p> <p>7; 8; 11; 13; 20; 21; and 24.</p>	<p>All the areas as identified for the specific activities listed in this Notice.</p> <p>There is no bio-regional plan thus Activity 12 is not triggered.</p>

2. FEASIBLE AND REASONABLE ALTERNATIVES

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

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity 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.

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

2.1 The property on which or location where it is proposed to undertake the activity

The “property” is rural communal area located within Ward 9 (IYLM) and Ward 1 (Engcobo LM). The construction footprint is outside village dwelling areas and is located primarily through open grass land used as natural grazing areas by livestock owners. As far as possible the pipeline route is located on a watershed, within the jurisdiction of the IYL. Deviating from the route may result in the pipeline traversing through ADM and possibly defined watercourses/wetlands and steep areas, resulting in significant negative impacts

There is no alternative property/site or locality for this project.

2.2 Type of activity to be undertaken

Construction of pipelines and a concrete reservoir to provide potable water to communities.

No alternative activity is considered

2.3 Design or layout of the activity

The position for the Nxamagale Command Reservoir is based on the parameters of the engineering design (hydraulic gradient and landscape), positioning to serve communities in Ward 1 (ELM) and considering the proximity of the trig-survey beacon. The position of the reservoir has been approved by the Surveyor-General.

The layout and design of the pipeline route was informed by the location of the natural watercourses/wetlands and non-perennial rivers and high sensitivity areas with numerous revisions and adjustments to avoid these areas

as far as possible and where feasible from an engineering perspective. The pipeline route has therefore taken into account the avoidance of sensitivity areas to reduce watercourse crossings and associated impacts as far as possible.

There is no alternative route to be considered to link the Ngqamakhwe Command Reservoir to the proposed Nxamagele Command Reservoir and to the existing Catshile pipeline.

2.4 Technology to be used in the activity

No alternative technology is considered as this is a standard pipeline and reservoir with engineering design parameters as set out in the Red Book and engineering design manuals.

2.5 Operational aspects of the activity

This is a gravity fed pipeline system i.e. no pump station etc. Operational aspects are linked to routine maintenance, checking for leaks, cleaning of scour valves, air-release valves and the reservoir.

There are no direct operational alternatives to be considered

2.6 The option of not implementing the activity

Due to the drought induced water crisis in CHDM (IYLM & Engcobo LM), Butterworth and other parts of Amathole District Municipality, the existing Tsomo River Abstraction Works and Water Treatment Works (CHDM Cluster 9 Phases 3A & 3B) is being upgraded to provide water to these project areas. The project being considered will provide potable water to Ward 9 (IYLM) and Ward 1 (Engcobo LM), which areas have no other sustainable sources of potable water to serve these communities.

Not implementing the proposed project will mean that there will be no delivery of potable water to communities within Ward 9 (IYLM) and Ward 1 (ELM). The government and Water User Authorities will be failing in terms of the Constitution in not providing potable water, which is considered a basic human right.

3. ACTIVITY POSITION

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.

3.1 List alternative sites if applicable: NXAMAGELE RESERVOIR

Alternative:

Alternative S1¹ (preferred or only site alternative) **Nxamagele Reservoir**

Alternative S2 (if any) NONE

Alternative S3 (if any) NONE

Latitude (S):		Longitude (E):	
32°	2.137'	28°	0.625'
°	'	°	'
°	'	°	'

3.2 In the case of linear activities: NGQAMAKHWE/ NXAMAGELE PIPELINE

(ONLY WETLAND AREAS ARE TO BE ASSESSED – SEE SECTION 3.3)

Alternative:

Alternative S1 (preferred or only route alternative) **Pipeline route - Ngqamakhwe Reservoir to Nxamagele Reservoir**

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

Latitude (S):		Longitude (E):	
32°	4.214'	27°	57.639'
32°	2.633'	27°	58.927'
32°	2.1376'	28°	0.6258'

~~Alternative S2 (if any)~~

- ~~• Starting point of the activity~~
- ~~• Middle point of the activity~~
- ~~• End point of the activity~~

°	'	°	'
°	'	°	'
°	'	°	'

~~Alternative S3 (if any)~~

- ~~• Starting point of the activity~~
- ~~• Middle 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.

¹ "Alternative S.." refer to site alternatives.

3.3 WATERCOURSE/WETLAND CROSSINGS ON NGQAMAKHWE/ NXAMAGELE PIPELINE ROUTE (FOR EA)

Alternative:	Latitude (S):		Longitude (E):	
Alternative S1 (preferred or only route alternative) B-C				
• Starting point of the activity (B)	32°	2.523'	27°	58.985'
• Middle point of the activity	32°	2.452'	27°	59.063'
• End point of the activity (C)	32°	2.381'	27°	59.140'
Alternative S2 (if any) D-E				
• Starting point of the activity (D)	32°	2.433'	27°	59.916'
• Middle point of the activity	32°	2.412'	28°	0.047'
• End point of the activity (E)	32°	2.375'	28°	0.176'
Alternative S3 (if any) F-G				
• Starting point of the activity (F)	32°	2.343'	28°	0.298'
• Middle point of the activity	32°	2.328'	28°	0.366'
• End point of the activity (G)	32°	2.308'	28°	0.426'

4. PHYSICAL SIZE OF THE ACTIVITY

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

4.1.1 Nxamagele Reservoir footprint

Alternative:

Alternative A1 ² (preferred activity alternative)	Fenced area
Alternative A2 (if any)	NONE
Alternative A3 (if any)	NONE

Size of the activity:

1 600 m ²
-m ²
-m ²

or, for linear activities:

4.1.2 Total pipeline route (315 mm ID)

Alternative:

Alternative A1 – BAR only required for Wetland crossings; see 4.1.3

Length of the activity:

7 000 m

4.1.3 Wetland crossings

Alternative:

Alternative A1	B-C
Alternative A2	D-E
Alternative A3	F-G

Length of the activity:

376 m
436 m
214 m
1 026 m

Total length of wetland crossings

² "Alternative A.." refer to activity, process, technology or other alternatives.

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

Alternative:	Pipeline & Reservoir	Size of the site/servitude:
Alternative A1 (preferred activity alternative)		40 000 m ²
Alternative A2 (if any)	NONE	--m ²
Alternative A3 (if any)	NONE	-m ²

5. SITE ACCESS

Does ready access to the site exist?

YES	NO
-m	

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

Describe the type of access road planned:

No access road will be constructed. Contractor will make use of existing tracks used by the community and rehabilitate/revegetate these at closure

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.

6. SITE OR 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.

See Appendix A2

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;

- cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.10 the positions from where photographs of the site were taken.

7. 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 form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

See Appendix B

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 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.

See Appendix C

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 49.5 mil	
What is the expected yearly income that will be generated by or as a result of the activity?	R0	
Will the activity contribute to service infrastructure?	YES	NO
Is the activity a public amenity?	YES	NO
How many new employment opportunities will be created in the development phase of the activity?	60	
What is the expected value of the employment opportunities during the development phase?	R 4.3 mil	
What percentage of this will accrue to previously disadvantaged individuals?	100%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	3	
What is the expected current value of the employment opportunities during the first 10 years?	R 3.6 mil	
What percentage of this will accrue to previously disadvantaged individuals?	100%	

9(b) Need and desirability of the activity

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

The project objective is to address public health and basic needs by providing potable water supply to rural communities at RDP level to address the water supply backlog.

Currently communities are making use of boreholes with diesel driven pumps and where these are no longer operational have resorted to taking water at streams and rivers. Historic toilet facilities in these areas were generally unlined pit latrines, which could contribute to pollution of the underground water sources and also streams, resulting in a health hazard.

In addition, operation of the diesel engines is becoming problematic with spiraling fuel costs and maintenance of old equipment adding a heavy financial burden to the CHDM

This project will provide potable water to these communities

Indicate any benefits that the activity will have for society in general:

Provision of potable water to communities and towns within drought stricken areas of the IYLM and Engcobo LM. The project objective is to address public health and basic needs by providing potable water supply to rural communities at RDP level to address the water supply backlog. This project will also relieve CHDM of the financial burden of operating and maintain energy sources at boreholes

Indicate any benefits that the activity will have for the local communities where the activity will be located:

Provision of potable water to rural communities within IYLM (Ward 9) and Engcobo LM (Ward 1).
Government and municipal funding is aimed at meeting an expenditure of 30% of the contract value on local labour and suppliers. The CHDM have a list of local material suppliers and sub-contractors from whom the main contractor can source material and skilled sub-contractors. In addition a project steering committee consisting of the Ward Councilor and community representatives are used to identify and guide employment of local unskilled workers who will learn a skill or skilled workers as may be required by the main contractor. A contract of this nature will have sufficient time for the transfer of skills and providing employment opportunities. The Consulting engineer has indicated that up 60 temporary employment opportunities could be created during the development phase and 3 permanent jobs for the operational/maintenance phase

10. 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:	Administering authority:	Date:
NEMA, 1998 (Act 107 of 1998), as amended and associated Regulations GN 324, 325, 326 & 327	DEDEAT	1998
NEM: Biodiversity Act (Act 10 of 2004)	DEDEAT	2004
NEM: Biodiversity Act (Act 10 of 2004), Notice No. R. 1020 dated 25 th September 2020 - Alien and Invasive Species Regulations	DEDEAT	2020
NWA, 1998 (Act 36 of 1998) with Regulations	DWS	1998
NHRA, 1999 (Act 25 of 1999), as amended	EC PHRA / SAHRA	1999

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

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

YES	NO
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If yes, what estimated quantity will be produced per month?

1 m ³

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

Construction waste stored temporarily at the Contractors site office and will be disposed of at registered Municipal landfill site

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

Registered Municipal landfill site

Will the activity produce solid waste during its operational phase?

YES	NO
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If yes, what estimated quantity will be produced per month?

-m ³

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

NOT APPLICABLE

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

NOT APPLICABLE

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 relevant legislation?

YES	NO
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If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	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.

11(b) Liquid effluent

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

YES	NO
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If yes, what estimated quantity will be produced per month?

-m ³

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

YES	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
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If yes, provide the particulars of the facility:

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

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

NONE

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

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

YES	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.

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

NOT APPLICABLE

11(d) Generation of noise

Will the activity generate noise?

YES	NO
YES	NO

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

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

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

NOT APPLICABLE

12. WATER USE

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

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water
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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:

0 litres	
YES	NO

Does the activity require a water use permit from the Department of Water Affairs?

See discussion hereunder

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

NOTE:

- (i) There is an existing WUL No. 12/S50G/ACI/1873 dated 23/10/2012 for the WTW at Tsomo, which will supply potable water to these schemes
- (ii) The authorisation required from DWS is in terms of working within 500 m of and/or crossing watercourses/wetlands. This may be in the form of a General Authorisation or Water Use Licence as will be determined by DWS
- (iii) Mr N M Mbikwana of Londi & Associates WULA Consulting (Pty) LTD has been appointed to undertake the necessary applications for a General Authorisation or Water Use Licence for works within 500 m of, or crossing wetlands. The application has been lodged: **see below**

7/21/22, 6:22 PM

Applicant - Main Menu

Mr Noel Mlondolozzi Mbikwana (Director) e-Mail: mlondolozzi@icloud.com

e-WULAAS - Water Use Licence Applications

[HOME \(https://www.dws.gov.za/ewulaas/\)](https://www.dws.gov.za/ewulaas/)
[How To](#)
[Consultant](#)
[Client](#)
[Applications](#)
[Withdraw](#)
[Cancel Licence](#)
[Status](#)
[Correspondence](#)
[Support](#)
[Logout](#)

Application Status

Water User 

WSP : CHRIS HANI DISTRICT MUNICIPALITY

Application 

WU25744 - Proposed Cluster 9 Phase 5 & Cluster 8 Linkage Bulk Water Supp

Duration: Day 0 of 90

Current Status: **Pre Application Enquiry**

#	Date	Applicant	Department	Duration in Days
1	Jul 12 2022 11:17AM		Pre Application Enquiry	8 Day(s) (Current)
2	Jul 12 2022 6:04AM		Pre Application Enquiry	1 Day(s)
3	Jul 11 2022 3:49PM	Applicant : Prepares Pre-application for submission		2 Day(s)

We are currently waiting for the pre-consultation with the Department of Water and Sanitation (East London Office)

Kind regards

Noel M. Mbikwana (Director Integrated Water Resource Science)

Londi & Associates WULA Consulting (PTY) LTD

Contact Cell number: +27-(0)-72 086 9984

From: [EWulaas Do Not Reply@dws.gov.za](mailto:EWulaas_Do_Not_Reply@dws.gov.za)

Subject: Pre-Application Water Use Enquiry has been submitted to the department (WU25744)

Date: 12 Jul 2022 at 6:05

To: mlondoloz@icloud.com

Dear Mr Noel Mlondoloz Mbikwana (Director),

A request for consultation for the following Pre-Application Water Use Enquiry has been submitted to the department :

Proposed Cluster 9 Phase 5 & Cluster 8 Linkage Bulk Water Supply Pipeline (WU25744)

Your request for consultation was submitted to :

Name : Mrs L. Fourie (WULA Manager)

e-Mail : FourieL4@dws.gov.za

Tel : 0437010248

[Click Here to access the Application](#)

Kind Regards,

e-WULAAS on Behalf of **Department of Water and Sanitation**

Private Bag X313, Pretoria, 0001

Sedibeng Building, 185 Francis Baard Street, Pretoria, 0001

Tel: (012) 336 7500

Fax: (012) 323-4472

Website: www.dws.gov.za

Email: E-WULAASCalls@dws.gov.za

13. ENERGY EFFICIENCY

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

This entire system from the Ngqamakhwe Command Reservoir to the proposed Nxamagele Command Reservoir is a gravity supply system. No energy source is required

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

NOT APPLICABLE

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 C and indicate the area, which is covered by each copy No. on the Site Plan.

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

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

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

YES	NO

If YES, please complete form XX for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

App D1-Wetland Specialist Report

App D2-Terrestrial Specialist Report

App D3 – Archaeological / Cultural Heritage Specialist

App D4 – Paleontological Specialist

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Nxamagale Command Reservoir

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
------	-------------	-------------	-------------	--------------	-------------	------------------

Wetland Crossings

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

2.2 Plateau

2.3 Side slope of hill/mountain

2.4 Closed valley

2.5 Open valley

2.6 Plain

2.7 Undulating plain / low hills

2.8 Dune

2.9 Seafront

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Nxamagele Reservoir		Wetland Crossings B-C, D-E & F-G		Alternative S3 (if any):	
	YES	NO	YES	NO	YES	NO
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

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

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

- 4.1 Natural veld – good condition ^E
- 4.2 Natural veld – scattered aliens ^E
- 4.3 Natural veld with heavy alien infestation ^E
- 4.4 Veld dominated by alien species ^E
- 4.5 Gardens
- 4.6 Sport field
- 4.7 Cultivated land
- 4.8 Paved surface
- 4.9 Building or other structure
- 4.10 Bare soil

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

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

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

See Appendix D2 – Terrestrial Biodiversity Assessment and discussion in section 5.5 hereunder

5. 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:

- 5.1 Natural area
- 5.2 Low density residential
- 5.3 Medium density residential
- 5.4 High density residential
- 5.5 Informal residential
- 5.6 Retail commercial & warehousing
- 5.7 Light industrial
- 5.8 Medium industrial ^{AN}
- 5.9 Heavy industrial ^{AN}
- 5.10 Power station
- 5.11 Office/consulting room
- 5.12 Military or police base/station/compound
- 5.13 Spoil heap or slimes dam^A

- 5.14 Quarry, sand or borrow pit
- 5.15 Dam or reservoir**
- 5.16 Hospital/medical centre
- 5.17 School
- 5.18 Tertiary education facility
- 5.19 Church
- 5.20 Old age home
- 5.21 Sewage treatment plant^A
- 5.22 Train station or shunting yard ^N
- 5.23 Railway line ^N
- 5.24 Major road (4 lanes or more) ^N
- 5.25 Airport ^N
- 5.26 Harbour
- 5.27 Sport facilities
- 5.28 Golf course
- 5.29 Polo fields
- 5.30 Filling station ^H
- 5.31 Landfill or waste treatment site
- 5.32 Plantation
- 5.33 Agriculture**
- 5.34 River, stream or wetland**
- 5.35 Nature conservation area
- 5.36 Mountain, koppie or ridge**
- 5.37 Museum
- 5.38 Historical building
- 5.39 Protected Area
- 5.40 Graveyard
- 5.41 Archaeological site**
- 5.42 Other land uses (describe)

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity.
NONE

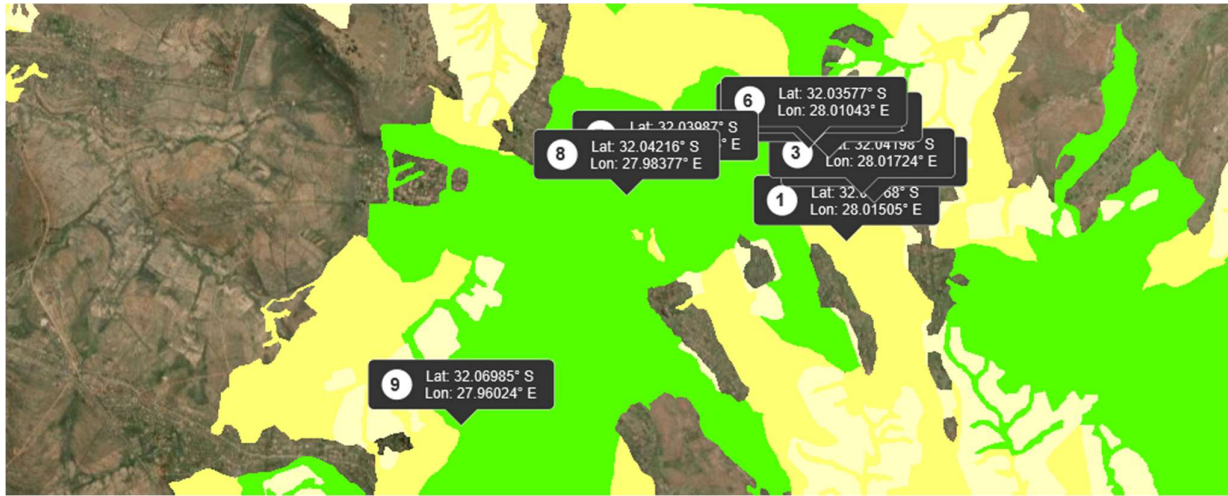
If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity.
If YES, specify and explain: NONE

If YES, specify:

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.
If YES, specify and explain: NONE

If YES, specify:

5.5 NATURAL AREA



Nxamagele Reservoir (6) – Pipeline route (6, 7, 8 & 9)

Referenced to: Appendix D2 - Terrestrial Biodiversity Assessment (Mr J Pote)

The project area is rural communal land used primarily for livestock grazing. There are no arable lands in the vicinity of the project area. The vegetation type is Drakensberg Foothill Moist Grassland with a conservation status of **least concern**. The pipeline route traverses a CBA 2 and the reservoir is to be constructed within a CBA 2. No RAMSAR sites are affected or situated within the Local municipal area.

The project area is generally characterised by moderately rolling and mountainous, much incised by river gorges of drier vegetation types and by forest and covered in forb-rich grassland dominated by short bunch grasses including *Themeda triandra* and *Tristachya leucothrix*

The site is outside of the planning domain of any other Biodiversity Sector Plans and is not within a protected area (SAPAD)

The route is not situated within any Strategic Water Source Area, and the specific activity (pipeline) is unlikely to have an impact on any Strategic Water Source area, as it will not alter water flows

The habitats and microhabitats present on the project site are not unique and are widespread in the general area, hence the localised impact associated with the site footprint would in general be of low to very low significance with implementation of recommended mitigation measures

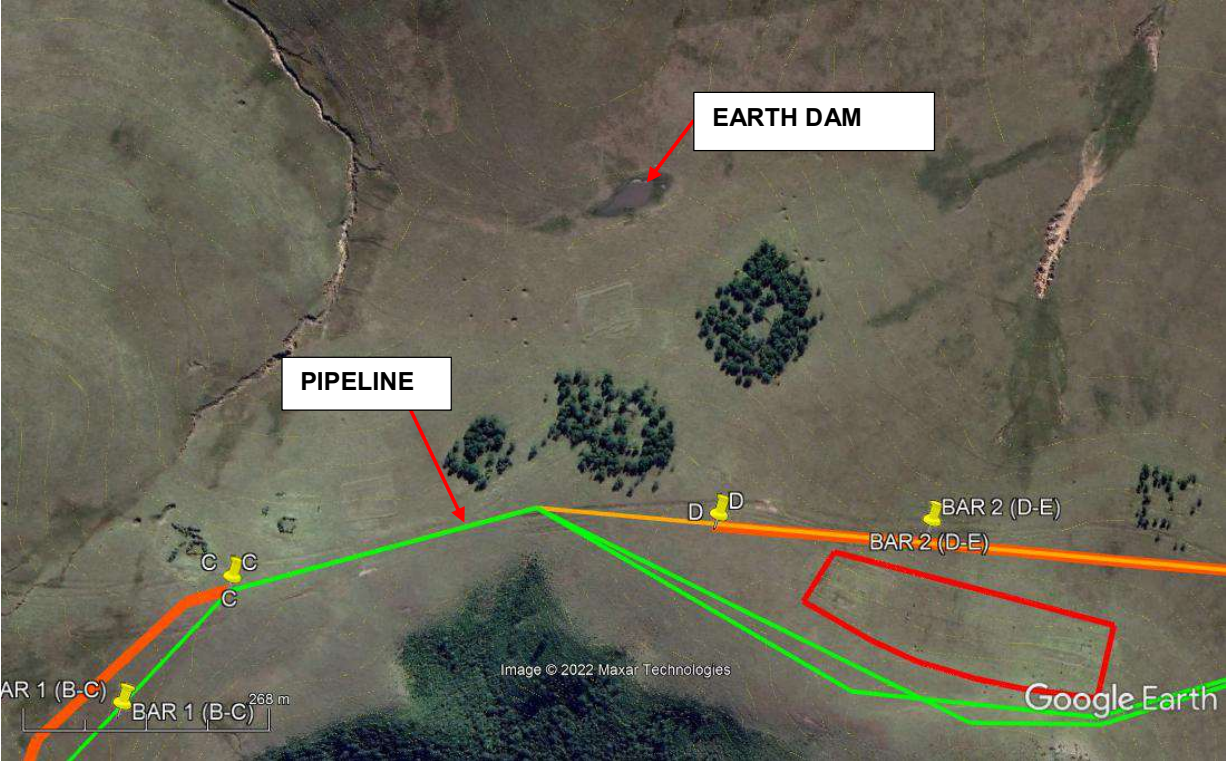
Due to the temporary nature of the construction of the pipeline, which will likely rehabilitate to pre-construction conditions on completion, faunal species are unlikely to be significantly affected by the proposed activity. The reservoir footprint is small and not deemed to pose a risk to any species of conservation concern.

The only loss of CBA 2 is the Nxamagele Reservoir footprint, fenced area of 1 600 m² (0.16 ha), which is regarded as having a low significance rating.

Since the project footprint is surrounded by extensive outlying areas of natural habitat, any disturbance or displacement associated with increased activity or habitat destruction as a direct result of the activity during the construction phase is unlikely to pose a significant negative impact to faunal species

The terrestrial environment will be temporarily impacted where vegetation clearing is required to construct the pipeline along its length and width. Three watercourse/wetland crossings will be required as these cannot be avoided; see section 5.8 hereunder. On completion of installation, overburden and topsoil will be replaced and the site will revegetate

5.6 DAM

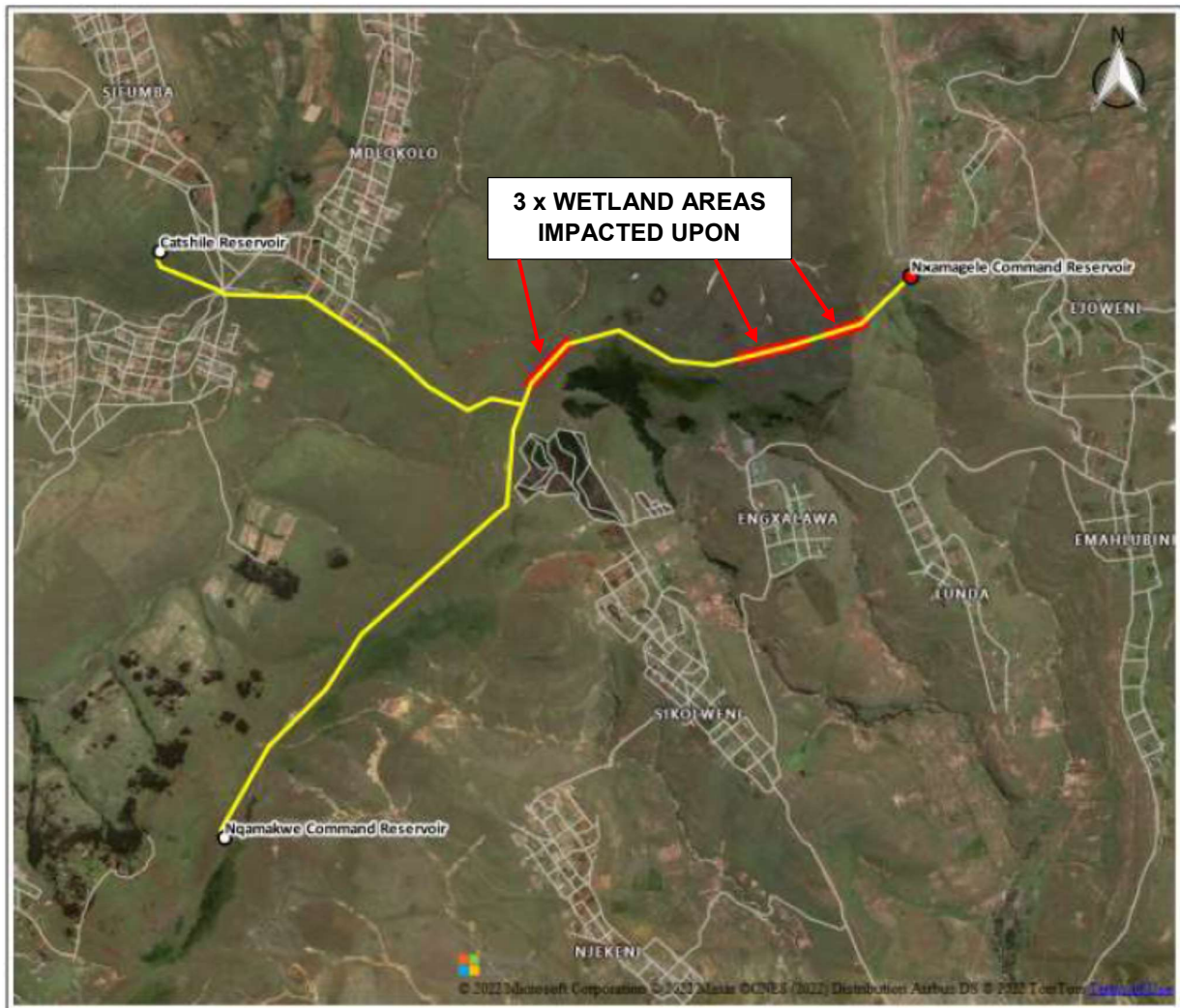


There is one (1) stock water earth dam located ± 350 m down slope of the pipeline route. Considering that the construction footprint along the pipeline will not exceed 5 m in width, it is safe to say that there will be no impact on the dam during construction or post-construction.

5.7 AGRICULTURE

Current land use is natural grazing with beef cattle and sheep. There are no arable lands in the vicinity of the project area. The natural grazing is in a very good condition with an estimated carrying capacity not exceeding 3 ha/LSU (large stock unit). Thus the carrying capacity would be potentially reduced by 1.3 LSU, however one must consider that this will only be over the short term and with proper construction methodology and rehabilitation measures the impact areas on the pipeline route/wetland areas will return to the current state within a period of 2 years. The fenced impact area of 0.16 ha (1 600 m²) at the reservoir site will be lost to grazing, but is regarded as insignificant as this will not impact on the livestock numbers.

5.8 WETLANDS



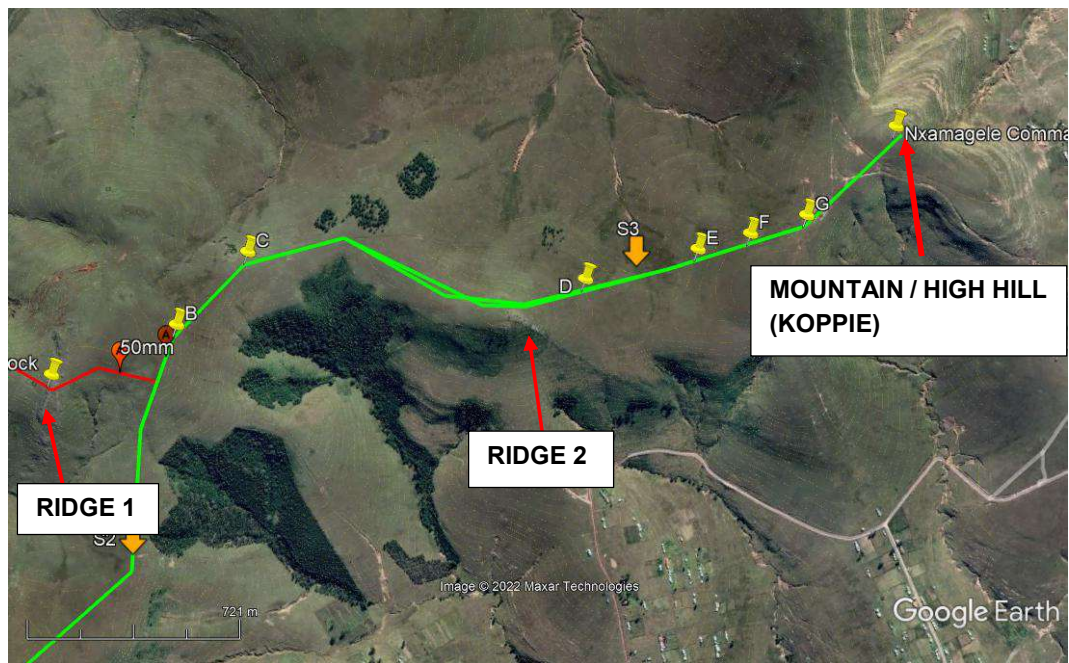
Referenced to: Appendix D1 - Aquatic and freshwater impact assessment (Ms J Smith - JS Environmental)

Three (3) wetland areas will be impacted upon. The development proposals will result in some loss and modification to the wetland habitat where the pipeline route falls within the three (3) natural wetlands. The final routing of the pipeline route has taken into account the avoidance of sensitivity areas to reduce watercourse crossings and associated impacts as far as possible. Avoidance of sensitivity areas as far as possible in the planning and design phase has therefore reduced the significance of impacts pre-mitigation.

The majority of the impacts are considered to be of **moderate significance pre-mitigation** and through the implementation of the mitigation measures the impacts can be mitigated to **low significance**; see BAR Section D 2.2.1 and 2.3.(a) and Appendix D1

It is of the specialist's opinion that there are no fatal flaws associated with the development proposals.

5.9 MOUNTAIN, KOPPIE OR RIDGES



MOUNTAIN (HIGH HILL) & RIDGE LINES (ROCK)

5.9.1 Mountain (high hill / koppie)

The Nxamagele Command Reservoir will be constructed to the side of this hill top. A Surveyor-General Trig-survey beacon is located on this hill top. DALRRD (Directorate: Survey Services) have given approval for the construction of the Nxamagele Reservoir in close proximity to the trig-survey beacon, which will still allow unimpeded views to at least three (3) other trig-beacons for orientation purposes; **See Appendix E section 3.2.1**

5.9.2 Ridge 1

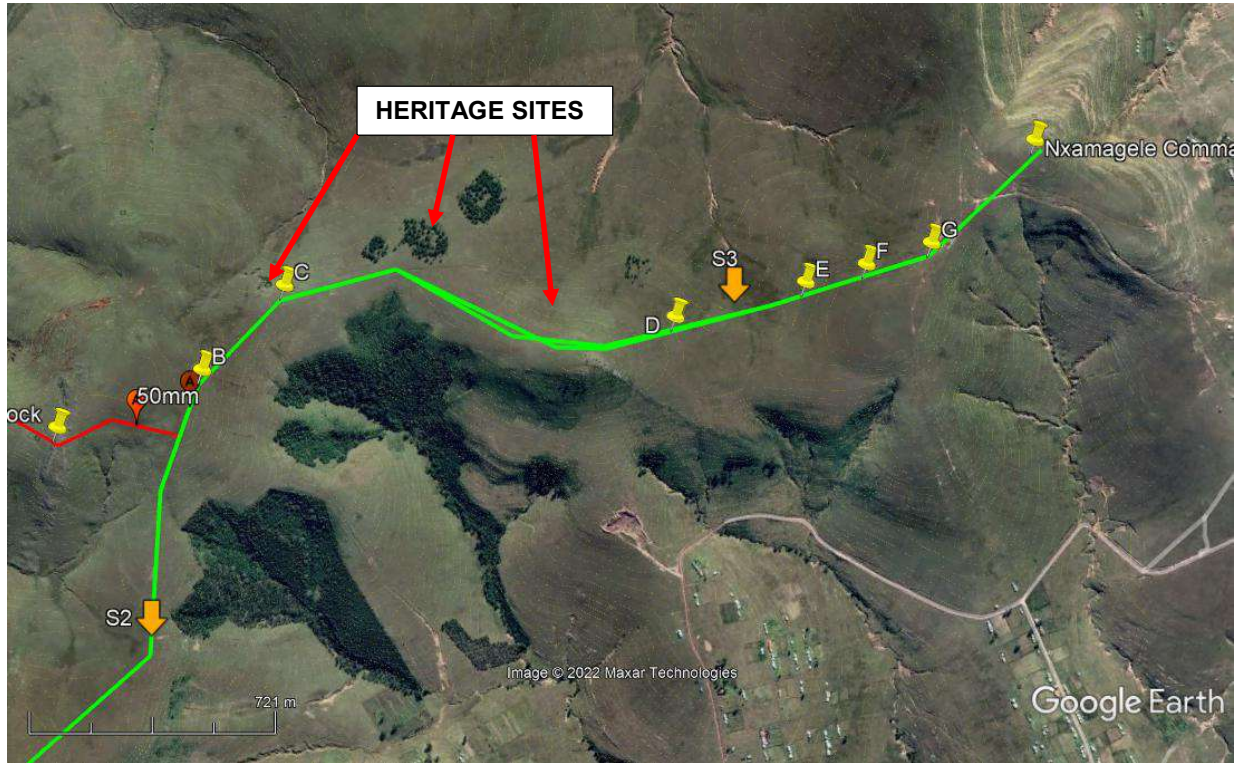
This ridge line will only be impacted upon in one area where the Catshile pipeline (160 mm) passes through a natural gap in the ridge; **see photo below**. No blasting will be required. This section of the pipeline is not included in the BAR as it does not trigger a NEMA activity but is recorded for the purpose of this report. *Aloe ferox* plants will not be impacted upon as they are outside the trenching area.



5.9.2 Ridge 2

The pipeline route passes to the north parallel to this ridge line and is at a lower elevation than the ridge line. The pipeline route will not impact on this ridge

5.10 ARCHAEOLOGY & CULTURAL HERITAGE



Heritage Sites depicted near the pipeline route requiring a BAR

Referenced to: Appendix D3 – Archaeological & Cultural Heritage Impact Assessment (Ms K van Ryneveld – ArchaeoMaps)

A total of 12 archaeological and cultural heritage resources / sites, as defined and protected by the NHRA 1999, are recorded, situated within or in direct proximity to the Cluster 9 Phase 5 and Cluster 8 Linkage, Water Supply and Access Road study site. Identified heritage resources are labelled Sites C9P5-03 to C9P5-14. Eleven (11) archaeological and cultural resources comprise LIA sites, while two (2) are Colonial Period sites. Three (3) recorded sites – Sites C9P5-12, C9P5-13, and C9P5-14 – are situated at such distance from the line route that no additional conservation measures on behalf of the developer are warranted for purposes of development; these sites will be conserved in situ. Recommended conservation measures for Sites C9P5-03 to C9P5-11 are summarised in **section 6.1** hereunder and included in the EMPr

The archaeologist has been appointed to meet with the ECO and Contractor to establish the conservation measures at particular sites.

5.11 PALAEOLOGY

Referenced to: Appendix D4 – Palaeontology Impact Assessment (Mrs E Butler – Banzai Environmental)

The proposed development is underlain by grassland with only a few dolerite outcrops. The dolerite is igneous in origin and any fossils in the area would have been baked and highly metamorphized. However, only one site with faint plant impressions were identified. These impressions were uncovered during excavations for the pipeline outside of the BAR (wetland) areas. Careful investigation of the excavated mudstones indicated only one small area of impressions. The excavations uncovered plant impressions that would have otherwise been undetected. Other outcrops in the area could produce well-preserved fossils and it is thus considered that the impact on fossils in the area will be of a medium significance. It is therefore considered that the pipeline development will not lead to detrimental impacts on the palaeontological resources of the area

6. CULTURAL/HISTORICAL FEATURES

<p>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</p>	<p>YES</p>	<p>NO</p>
<p>Archaeological or palaeontological sites, on or close (within 20m) to the site?</p>	<p>Uncertain</p>	
<p>If YES, explain:</p>	<p>Evidence of historic dwellings; see Specialist Report D3 and summary of findings in section 6.1 hereunder</p>	
<p>If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.</p>		

6.1 Briefly explain the findings of the specialist:

Archaeology / Cultural – Extract from Specialist Report

A total of 12 archaeological and cultural heritage resources / sites, as defined and protected by the NHRA 1999, are recorded, situated within or in direct proximity to the Cluster 9 Phase 5 and Cluster 8 Linkage, Water Supply and Access Road study site. Identified heritage resources are labelled Sites C9P5-01 to C9P5-14. Eleven (11) archaeological and cultural resources comprise LIA sites, while three (3) are Colonial Period sites. Three (3) recorded sites – Sites C9P5-12, C9P5-13, and C9P5-14 – are situated at such distance from the line route that no additional conservation measures on behalf of the developer are warranted for purposes of development; these sites will be conserved in situ. Recommended conservation measures for Sites C9P5-03 to C9P5-11 are summarised as:

- Sites C9P5-03, C9P5-04 and C9P5-05: individual temporary conservation measures during the tenure of construction works in the vicinity of these sites are recommended.
- Sites C9P5-06 to C9P5-10 comprise Sensitive Area 1 (S32°02'25.5"; E27°59'58.6" to S32°02'29.1"; E27°59'02.3" = 1.6km). The Sensitive Area 1 LIA site cluster is of research significance with reference to early Mfengu settlement pattern, preliminary inferred to date from 1818 onwards. A number of line route realignment proposals resulted in the final route to the south of the cluster of sites – from an archaeological and cultural heritage and IEM point of view deemed a best development option. It is recommended that a temporary conservation corridor be maintained for the period of construction works at Sensitive Area 1. Archaeological environmental-heritage monitoring including sketch plan layout recordings of the Sensitive Area 1 settlement pattern should be submitted to the EC PHRA.
- Site C9P5-11 denotes Sensitive Area 2 (S32°02'37.2"; E27°58'41.3" to S32°02'12.7"; E27°57'50.3" = 1.5km) typified by a cluster of kraals adjacent to Mdlokolo Village. No site features are associated with the kraals: the line route will primarily follow the existing access road meandering through the kraal cluster only towards the east of the cluster. Based on the heritage sensitivity of the area it is recommended that a temporary conservation corridor be maintained for the period of construction works at the site and that archaeological / ECO monitoring be done and a (photographic) report submitted to EC PHRA.

Conclusion: The Screening Report (2022a, 2022b) for the Cluster 9 Phase 5 and Cluster 8 Linkage, Water Supply and Access Road development indicates the archaeological and cultural heritage theme for the study site as of "Low Sensitivity". Despite the heritage significance of the study site the development design does not pose any Fatal Flaws. Based on the necessity

of the development, consideration of a No Development option cannot be supported.

Recommendations

With reference to archaeological and cultural heritage compliance, as per the requirements of the NHRA 1999, it is recommended that the proposed Cluster 9 Phase 5 and Cluster 8 Linkage, Water Supply and Access Road development proceeds as applied for, provided developer compliance with relevant heritage recommendations / requirements.

EAP comment: The conservation measures are included in the EMPr

Palaeontology – Extract from Specialist Report

The dolerite is igneous in origin and any fossils in the area would have been baked and highly metamorphized. However, only one site with faint plant impressions were identified. These impressions were uncovered during excavations for the pipeline. Careful investigation of the excavated mudstones indicated only one small area of faint impressions. The excavations uncovered plant impressions that would have otherwise been undetected. Other outcrops in the area could produce well-preserved fossils and it is thus considered that the impact on fossils in the area will be of a medium significance. It is therefore considered that the pipeline development will not lead to detrimental impacts on the palaeontological resources of the area. And thus, the development **may be authorised in its whole extent**, as the development footprint is not considered sensitive in terms of palaeontological resources.

If significant fossil remains or plant remains are discovered during any phase of construction, either on the surface or exposed by excavations, the **Chance Find Protocol** must be implemented by the ECO/site manager in charge of these developments. The chance finds protocol is included in the EMPr

NOTE: See letter from ECPHRA and upload on to SAHRIS (Appendices G3.1 and G3.2)

Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made; **See Appendix G3.2**

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

On 26th May 2022 a BID was distributed to I&APs'; **see Appendix E2**. It provided information on the proposed project to encourage stakeholders to register as I&APs as well as to assist them to provide preliminary issues and/or concerns regarding the proposed project for consideration in the EIA process. The notice also outlined the legal requirements regarding environmental authorisation as well as explained the EIA process, and in particular focussed on how I&APs could become involved at the requisite stages. Notices/BID included a registration form to be completed and returned to confirm I&AP interest and registration. The BID stated clearly that subsequent correspondence and or opportunity to comment on draft documents would be limited to those I&APs who registered and reports would be made available in electronic format. In addition the Notice/BID stated clearly that the EAP would not hold a community or public site meeting and that the PPP would be undertaken by CHDM through the appointment of an ISD specialist; See Appendix G1 for e-mail communication between EAP and EQM, in this regard.

(a) Fixing a notice board

No signage was erected as discussed with the EQM due to the distance of the project area from villages and in view of the social facilitation implemented under CHDM ISD; See Appendix G1 for e-mail communication between EAP and EQM, in this regard.

(b) Written notice was provided to—

NAME & CONTACT NUMBER	ADDRESS	E-MAIL ADDRESS	I&AP RESPONSE YES OR NO
DEDEAT Mrs N Mdekazi-Nkqubezelo Tel: 045 808 4000	Komani Office Park Queenstown	Nondwe.Mdekazi@dedea.gov.za	YES – Receipt acknowledged
Department Water & Sanitation East London Mrs L Fourie Tel: 043 701 0248	42 Moore St Ocean View Terrace Quigney East London, 5201	FourieL4@dws.gov.za	NO
Department Water & Sanitation East London Mrs E van Rooyen Tel: 043 701 0229	42 Moore St Ocean View Terrace Quigney East London, 5201	VanRooyenE2@dws.gov.za	NO
Eastern Cape Provincial Heritage Resources Authority Mr M Madita Tel: 043 492 1942	16 Commissioner Street, East London, 5201	markm@ecphra.org.za info@ecphra.org.za	YES – Receipt acknowledged
Chris Hani D M Municipal Manager Mr G Mashiyi Tel: 045 808 4610	Bells Road Queenstown	gmashiyi@chrishanidm.gov.za	NO

Chris Hani D M Technical director Mr L Govo	Cathcart Road Queenstown	luzukog03@gmail.com	NO
Chris Hani D M Environmental Management Mr Q Mpotulo Tel: 045 808 9000	Tylden Street Queenstown	qmpotulo@chrishanidm.gov.za	YES – Receipt acknowledged
Chris Hani D M Project Manager Ms T Ncokazi	Cathcart Road Queenstown	tncoazi@chrishanidm.gov.za	NO
Chris Hani D M Ms F Kato	Cathcart Road Queenstown	fkato@chrishanidm.gov.za	NO
Chris Hani D M Mr S Dineka	Cathcart Road Queenstown	sdineka@chrishanidm.gov.za	NO
Intsika Yethu L M Municipal Manager (Acting) and Technical Director Mr K Clock Tel: 047 874 8700	201 Main Street Cofimvaba	kulileclock@gmail.com	NO
Intsika Yethu L M Ward Councillor (Ward 9) Mr M Mrwetyana Tel: 071 718 3427	Main Street Tsomo	mvumrwetyana@gmail.com	YES – Telephonically
Engcobo LM Municipal Manager (Acting) Mr Z Xuba Tel: 047 548 5600	58 Union Street, Engcobo	zsuba@gmail.com	NO
Engcobo L M Technical Director (Acting) Mr S Mkhondweni Tel: 047 548 5600	58 Union Street, Engcobo	mkondwenis@gmail.com	NO
Engcobo L M Ward Councillor (Ward 1) Mr A Zihlangu Tel: 079 310 6006	58 Union Street, Engcobo	aphiwezihlangu@gmail.com	YES - Telephonically
Q-Projek ISD Consultant Ms P Fotoyi	Emangweni, Banzi Village, Cofimvaba, 5380	phateef@gmail.com	YES
Surveyor-General DALRRD Mr P Vorster Tel: 82 377 9296	Private Bag X10 Mowbray, 7705,	Patrick.Vorster@dalrrd.gov.za	YES

Copies of correspondence included in **Appendix E**

(c) Placing an advertisement in one local newspaper; or

An advertisement for the EIA process appeared in the local newspaper (The Representative) on 27th May 2022. The advertisement briefly described the proposed project and the legal requirements associated with the EIA process in terms of NEMA and invited members of the public to register as I&APs and raise any initial issues or

concerns about the proposed project. The advertisement stated clearly that subsequent correspondence and or opportunity to comment on draft documents would be limited to those I&APs who registered and would be via electronic media. In addition the Notice/BID stated clearly that no public or community meeting will be held by the EAP as this is being undertaken by an ISD appointed by CHDM. Copy of the advertisement is included in **Appendix E**

- (d) Placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken.

Not applicable in respect of this project as this is part of the CHDM Cluster 9 and CHDM Cluster 8 Water Backlog Projects, which have been on-going since 2010. See letter from CHDM in respect of social facilitation conducted by ISD and included in Appendix E section 4.1

- (e) Using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

Not applicable in respect of this BAR – Social facilitation being handled by CHDM ISD and appointed facilitator

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

See copies of advertisement and BID in Appendix E

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

Advertisements placed in the local newspaper – The Representative (Queenstown); See Appendix E

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

**CHDM have initiated a social facilitation programme through an ISD Consultant, Q-Projek for IYLM (Ward 9) and CHDM ISD are undertaking facilitation within Engcobo LM (Ward 1); See Appendix E section 4.1
Copies of all reports and meetings are included in Appendix E section 4.2**

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application 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 this application. The comments and response report must be attached under Appendix E.

The comments and response report is included in Appendix E section 1

6. AUTHORITY PARTICIPATION

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

List of authorities informed:

DEDEAT DWS ECPHRA DALRRD (Directorate: Survey Services) SACAA (Civil Aviation Authority) – See correspondence from Engineer to SACAA in Appendix E section 3.2.2
--

List of authorities from whom comments have been received:

DEDEAT DALRRD (Directorate: Survey Services) ECPHRA

NOTE:

No response from SACAA thus assumed that the reservoir has no impact in terms of SACAA Regulations. Civil Aviation also not raised as a sensitivity in the on-line screening report. No further consultation with SACAA has taken place

7. CONSULTATION WITH OTHER STAKEHOLDERS

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

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES	NO
-----	----

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

DALRRD (Directorate: Survey Services) – approval of construction of the Nxamagale Reservoir in close proximity to a trig-survey beacon; **See Appendix E section 3.2.1**

ECPHRA - ECPHRA request the HIA (Heritage Impact assessment) which comprises of the AIA and a PIA for the total of the site /pipeline route. The application for the excavation is supported, subject to the public participation process engaged in prior to the excavation, possible relocation, reconstruction or deposition at the appropriate repository; **See Appendix G3**

8. REVIEW OF DBAR

The DBAR will be made available to the Authorities/Ward Councilors and stakeholders as listed in table 9-1 hereunder, via electronic file transfer as indicated in the BID. A hard copy of the DBAR and Appendices A, G and E will also be provided to the two Ward Councilors.

Table 9-1: I&AP Register

NAME & CONTACT NUMBER	ADDRESS	E-MAIL ADDRESS
DEDEAT Mrs N Mdekazi-Nkqubezelo Tel: 045 808 4000	Komani Office Park Queenstown	Nondwe.Mdekazi@dedea.gov.za
Department Water & Sanitation East London Mrs L Fourie Tel: 043 701 0248	42 Moore St Ocean View Terrace Quigney East London, 5201	FourieL4@dws.gov.za
Department Water & Sanitation East London Mrs E van Rooyen Tel: 043 701 0229	42 Moore St Ocean View Terrace Quigney East London, 5201	VanRooyenE2@dws.gov.za
Eastern Cape Provincial Heritage Resources Authority Mr M Madita Tel: 043 492 1942	16 Commissioner Street, East London, 5201	markm@ecphra.org.za info@ecphra.org.za
Chris Hani D M Municipal Manager Mr G Mashiyi	Bells Road Queenstown	gmashiyi@chrisanidm.gov.za

Tel: 045 808 4610		
Chris Hani D M Technical director Mr L Govo	Cathcart Road Queenstown	luzukog03@gmail.com
Chris Hani D M Environmental Management Mr Q Mpotulo Tel: 045 808 9000	Tylden Street Queenstown	qmpotulo@chrishanidm.gov.za
Chris Hani D M Project Manager Ms T Ncokazi	Cathcart Road Queenstown	tncokazi@chrishanidm.gov.za
Chris Hani D M Ms F Kato	Cathcart Road Queenstown	fkato@chrishanidm.gov.za
Chris Hani D M Mr S Dineka	Cathcart Road Queenstown	sdineka@chrishanidm.gov.za
Intsika Yethu L M Municipal Manager (Acting) and Technical Director Mr K Clock Tel: 047 874 8700	201 Main Street Cofimvaba	kulileclock@gmail.com
Intsika Yethu L M Ward Councillor (Ward 9) Mr M Mrwetyana Tel: 071 718 3427	Main Street Tsomo	mvumrwetyana@gmail.com
Engcobo LM Municipal Manager (Acting) Mr Z Xuba Tel: 047 548 5600	58 Union Street, Engcobo	zsxuba@gmail.com
Engcobo L M Technical Director (Acting) Mr S Mkhondweni Tel: 047 548 5600	58 Union Street, Engcobo	mkondwenis@gmail.com
Engcobo L M Ward Councillor (Ward 1) Mr A Zihlangu Tel: 079 310 6006	58 Union Street, Engcobo	aphiwezihlangu@gmail.com
Q-Projek ISD Consultant Ms P Fotoyi	Emangweni, Banzi Village, Cofimvaba, 5380	phateef@gmail.com

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. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

(i) DALRRD

26/05/2022 – Enquired if the construction plan accommodated the trigonometrical beacon or does it require that the beacon be removed/destroyed? Should it be the latter, a letter of request to destroy/remove the beacon must be submitted to this Office for Mr. Donovan Peters' attention, CC'ing Mr Vorster and Mr. Johnson Magugwana

02/06/2022 - Your well-qualified response is very much appreciated. The advice received from your Surveyor is correct and informative in that he has confirmed that beacons 281, 105 and 187 will adequately cover the areas where beacon 27 would be impeded by the reservoir structure. The proposed alternative location for the reservoir is perfectly acceptable.

(ii) DEDEAT

27/05/2022 - The BID is noted. The department will only require a confirmation in writing that LN1 activity 9 does not form part the triggering activities listed in the BID. Kindly confirm on this email.

31/05/2022 - Thank you for the detailed explanation, very much appreciated

(iii) ECPHRA

14/07/2022 – ECPHRA request the HIA (Heritage Impact assessment) which comprises of the AIA and a PIA for the total of the site /pipeline route. The application for the excavation is supported, subject to the public participation process engaged in prior to the excavation, possible relocation, reconstruction or deposition at the appropriate repository

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

(i) RESPONSE FROM ENGINEER TO DALRRD

We propose locating the reservoir as per the drawing below. The reservoir would be 8m from the beacon and it will give line of sight to both beacons 26 and 281. It would give clear sighting to the East but would obstruct a bit to the North East. I have checked and to the North East one would be able to sight to beacons 281, 105 and 187.

(ii) **EAP RESPONSE TO DEDEAT**

In terms of Listing Notice 1-

- **Activity 9** - it is confirmed that although the pipeline exceeds 1 km in length the internal diameter is 315 mm and the throughput 88.5 litres/sec – Activity 9 is therefore not triggered as the internal diameter is less than 360 mm and the throughput less than 120 litres/sec; and
- **Activity 13** as listed in the BID is withdrawn as the total storage of the reservoirs being considered will not exceed 50 000 cubic meters

(iii) **EAP RESPONSE TO ECPHRA**

Karen van Ryneveld has been appointed to undertake the AIA and Elize Butler the PIA. The HIA and the Draft Basic assessment Report (DBAR) will be uploaded onto SAHRIS.

2. 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

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) 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.

NOTE:

Impacts associated only with the construction of the pipeline route through the three (3) wetland areas and the construction of the Nxamagale Command Reservoir are assessed in terms of this BAR

NOTE:

- (i) The impacts listed in the Table 2-1 hereunder take cognisance of the planning and design, construction and operational phases and are summarised from the following specialist reports, included in Appendix D viz.
- Aquatic & Wetland Assessment
 - Terrestrial Biodiversity Assessment;
 - Agricultural compliance statement - Site sensitivity verification report compiled by the EAP and submitted with application for EA – Appendix 17.3 of Application for EA
 - Archaeology & Cultural Heritage Impact Assessment
 - Palaeontological Impact Assessment
- (ii) Decommissioning and closure is not considered in the BAR as this water supply scheme is unlikely to be replaced as it is a necessity for the livelihood of the residents in the communities and is not a resource, which can be depleted.
- (iii) Impacts, the significance thereof and mitigation measures are discussed in section 2.1 hereunder and are aligned with the information from the respective specialist reports

Table 2-1: Direct, Indirect and Cumulative Impacts

Alternative (preferred alternative)

Direct impacts:

- (i) Routing of pipeline for minimised impact on wetlands
- (ii) Identify potential biodiversity issues (vegetation)

Indirect impacts:

- (i) Construction activities in close proximity to archaeological/cultural heritage site
- (ii) Fossils
- (iii) Impact on natural grazing areas

Cumulative impacts:

The cumulative impacts identified during this study include impacts on the environment (within the study area) caused by the combined impact of past, present and future human activities and natural processes. Cumulative impacts associated with the development proposals relate to the possible:

- (i) Impact on wetland areas through loss of and alteration of wetland habitat, water quality issues and pollution and change in hydrology and increase in erosion and sedimentation
- (ii) Impact on archaeological and cultural heritage sites
- (iii) Loss of fossil heritage
- (iv) Loss of natural vegetation (CBA 2) and grazing

2.1 IMPACT ASSESSMENT AND MITIGATION MEASURES**CONSOLIDATED IMPACT ASSESSMENT & SIGNIFICANCE RATING (ALL IMPACTS) BY EAP AND GUIDED BY IMPACT ASSESSMENTS AND MITIGATION MEASURES AS COMPILED BY RELEVANT SPECIALISTS**

To ensure a direct comparison between various specialist studies, standard rating scales are defined and used to assess and quantify the identified impacts. This is necessary since impacts have several parameters that need to be assessed.

NOTE: This consolidated impact assessment is based on the EAP's interpretation of the assessments conducted by the respective specialist studies and the mitigation measures contained in the reports.

The impacts to be assessed relate to those listed in Table 2-1 supra and are as follows:

- (i) Wetland**
- (ii) Terrestrial Biodiversity**
- (iii) Agriculture**
- (iv) Archaeology & Cultural Heritage**
- (v) Palaeontology**

Factors affecting significance of impacts

Four factors need to be considered when assessing the significance of impacts, namely:

- 1. Relationship of the impact to temporal scales** - the temporal scale defines the significance of the impact at various time scales, as an indication of the duration of the impact.
- 2. Relationship of the impact to spatial scales** - the spatial scale defines the physical extent of the impact.
- 3. The severity of the impact** - the severity/beneficial scale is used in order to scientifically evaluate how severe negative impacts would be, or how beneficial positive impacts would be on a particular affected system (for ecological impacts) or a particular affected party. The severity of impacts can be evaluated with and without mitigation in order to demonstrate how serious the impact is when nothing is done about it. The word "mitigation" means not just "compensation", but also the ideas of containment and remedy. For beneficial impacts, optimization means anything that can enhance the benefits. However, mitigation or optimization must be practical, technically feasible and economically viable.
- 4. The likelihood of the impact occurring** - the likelihood of impacts taking place as a result of project actions differs between potential impacts. There is no doubt that some impacts would occur (e.g. loss of vegetation), but other impacts are not as likely to occur (e.g. vehicle accident), and may or may not result from the proposed development. Although some impacts may have a severe effect, the likelihood of them occurring may affect their overall significance.

Each criterion is ranked with scores assigned to determine the overall significance of an activity. The criterion is then considered in two categories, viz. effect of the activity and the likelihood of the impact. The total scores recorded for the effect and likelihood are then read off the matrix, to determine the overall significance of the impact. The overall significance is either negative or positive. The environmental significance scale is an attempt to evaluate the importance of a particular impact. This evaluation needs to be undertaken in the relevant context, as an impact can either be ecological or social, or both. The evaluation of the significance of an impact relies heavily on the values of the person making the judgment. For this reason, impacts of especially a social nature need to reflect the values of the affected society.

The significance scale is an attempt to evaluate the importance of a particular impact. This evaluation needs to be undertaken in the relevant context, as an impact can either be ecological or social, or both. The evaluation of the significance of an impact relies heavily on the values of the person making the judgment. For this reason, impacts of a social nature need to reflect the values of the affected society.

Ranking of Evaluation Criteria

EFFECT	Temporal Scale		Score	
	Short term	<5 years	1	
	Medium term	Between 5 and 20 years	2	
	Long term	Between 20 and 40 years (a generation) and from a human perspective almost permanent	3	
	Permanent	Over 40 years and resulting in a permanent and lasting change that will always be there	4	
	Spatial Scale			
	Localised	At a localised scale and a few hectares in extent	1	
	Study area	The proposed site and its immediate environs	2	
	Regional	District and Provincial level	3	
	National	Country	3	
	International	Internationally	4	
	Severity	Negative	Benefit (minus score)	
	Slight / Slightly Beneficial	Slight impact on the affected system(s) or party(ies)	Slightly beneficial to the affected system(s) or party(ies)	1
	Moderate / Moderately Beneficial	Moderate impacts on the affected system(s) or party(ies)	An impact of real benefit to the affected system(s) or party(ies)	2
	Severe / Beneficial	Severe impacts on the affected system(s) or party(ies)	A substantial benefit to the affected system(s) or party(ies)	4
Very Severe / Very Beneficial	Very severe change to the affected system(s) or party(ies)	A very substantial benefit to the affected system(s) or party(ies)	8	
LIKELIHOOD	Likelihood			
	Unlikely	The likelihood of these impacts occurring is slight	1	
	May Occur	The likelihood of these impacts occurring is possible	2	
	Probable	The likelihood of these impacts occurring is probable	3	
	Definite	The likelihood is that this impact will definitely occur	4	

**In certain cases it may not be possible to determine the severity of an impact thus it may be determined: Don't know / Can't know*

The matrix that will be used for the impacts and their likelihood of occurrence

Likelihood	Effect															
	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
1	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
2	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
3	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
4	7	8	9	10	11	12	13	14	15	16	17	18	19	20		

The temporal/spatial/severity scales and likelihood of occurrence for impacts is used to determine the ranking in terms of environmental significance. Each impact is assessed and then the ranking determined, without and with mitigation.

Ranking

RATING		Temporal Scale		Spatial Scale		Severity of Impact		Risk Likelihood or		Matrix Total
	Without Mitigation	Permanent	4	Localised	1	Severe	4	Definite	4	13
With Mitigation	Permanent	4	Localised	1	Substantial benefit	4	Definite	4	13	
Overall Significance without mitigation									High	
Overall Significance with mitigation									High +	

The overall environmental significance (without and with mitigation) is then determined from the table hereunder and resulting in a significance statement by the EAP.

Ranking Matrix to provide an Environmental Significance

Environmental Significance		Pos +	Neg -
Low	An acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent development. These impacts will result in either positive or negative medium to short term effects on the social and/or natural environment	4 - 7	4 - 7
Moderate	An important impact which requires mitigation. The impact is insufficient by itself to prevent implementation of the project but, which in conjunction with other impacts may prevent its implementation. These impacts will result in either positive or negative medium to long term effects on the social and/or natural environment	8 - 11	8 - 11
High	If negative a serious impact, which if not mitigated, may prevent implementation of the project. These impacts would be considered by society as constituting a major and usually long term change to the natural and/or social environment and result in severe negative or beneficial effects.	12 - 15	12 - 15
Very High	If negative a very serious impact, which may be sufficient by itself to prevent the implementation of the project. The impact may result in permanent change. Very often these impacts are unmitigable and usually result in very serious effects or very beneficial effects	16 - 20	16 - 20

2.1.1 Wetland biodiversity

Impacts

- Loss of and alteration of wetland habitat
- Water quality issues and pollution; and
- Change in hydrology and increase in erosion and sedimentation

The development proposals will result in some loss and modification to the wetland habitat where the pipeline route falls within the three (3) natural wetlands. The final routing of the pipeline route has taken into account the avoidance of sensitivity areas to reduce watercourse crossings and associated impacts as far as possible. Avoidance of sensitivity areas as far as possible in the planning and design phase has therefore reduced the significance of impacts pre-mitigation.

Inappropriate design of pipeline crossings through high sensitivity wetland areas may result in alterations to surface and sub-surface flows within the wetland systems, resulting in back-flooding behind impeding structures and alteration of flows below impeding structures.

The construction of the pipelines and reservoir will result in direct loss and alteration of a small portion of natural wetland habitat associated with the watercourse crossings.

There is the possibility of indirect loss and alteration of wetland habitat as a result of unnecessary and uncontrolled encroachment by workers and/or their vehicles and machinery outside of the development footprint.

The loss of wetland vegetation may result in erosion, sedimentation and the spread of alien invasive plant species within the disturbed areas.

There is the potential for pollution of surrounding watercourses during construction from:

- Accidental spillages or poor storage, handling and disposal of hazardous substances and waste (fuel, oil).
- Accidental spillages from on-site sanitation facilities (if any).
- Inappropriate storage, use and handling of cement.

The construction of the pipelines will result in direct and temporary flow modification and alteration of natural flow patterns of the affected wetlands during excavations and trenching. The excavations and trenching activities may result in increased sediment in the wetlands.

Uncontrolled clearing activities and unnecessary clearing of vegetation and earthworks may also result in the indirect development of erosion channels and deposition of sediment within the watercourses.

There is the possibility of adverse impacts on the wetland habitat surrounding the development footprint during operation as a result of:

- Alien vegetation infestation post-construction.
- Unnecessary and/or uncontrolled encroachment into the wetland areas during any maintenance activities.

There is the possibility of adverse impacts on the affected watercourse from:

- Pipeline leakages (although unlikely).
- Inadequate rehabilitation of disturbed slopes and banks resulting in erosion channels and sedimentation of affected wetlands and downstream non-perennial rivers
- pollution of ground and surface water as a result of accidental spillages during any maintenance activities, although this is unlikely

Mitigation and Management Measures

The layout and design of the pipeline route was informed by the location of the natural watercourses/wetlands and non-perennial rivers and high sensitivity areas with numerous revisions and adjustments to avoid these areas as far as possible and where feasible from an engineering perspective. The pipeline route has therefore taken into account the avoidance of sensitivity areas to reduce watercourse/wetland crossings and associated impacts as far as possible.

A Rehabilitation and Alien Vegetation Management Plan must be developed and implemented during the construction and operation phases.

A suitably qualified ecologist or ECO should survey the development footprint for plant SCC prior to construction within these areas and relevant permits for removal must be obtained should any be identified.

Pipeline should be protected and stabilised while also allowing a partially permeable layer around the pipeline for sub-surface through flow to prevent back-flooding or pooling behind the pipeline structure in the wetland areas (this has been provided for in engineering design).

- A Maintenance Management Plan should be developed for implementation during the operational phase.
- Construction should take place during the dry season or during a dry period as far as possible, especially around construction of pipelines within the natural wetland areas.
- All site clearance and construction activities must be limited to the development footprint.

- Material lay down and stock pile areas must be established in already transformed, low sensitivity areas within the development footprint or adjacent transformed and low sensitivity areas adjacent to the development site but more than 32m from any watercourse.
- There must be no encroachment into the surrounding high sensitivity wetland areas outside of the project footprint.
- Soil excavated for pipeline installation should be stockpiled where possible adjacent to the excavated area and reused for backfilling.
- Topsoil and subsoil must be stored separately and subsoil placed first with topsoil on top during backfilling.
- Topsoil and associated vegetation layer should be kept intact as far as possible, for easy reinstatement during backfilling.
- An alien invasive vegetation management plan must be developed to reduce, prevent and control any alien invasive vegetation growth within the project area and any disturbed areas.
- All disturbed areas must be rehabilitated as soon as possible to limit the possibility of erosion and resultant sedimentation
- All hazardous substances and hazardous waste must be stored in impermeable structures placed in secondary impermeable bunded structures 110% the volume of the primary structure.
- All hazardous substances and hazardous waste should be placed outside of the high sensitivity areas and more than 32m from riparian areas
- Emergency response plan must be drawn up to deal with any hazardous spillages/accidental leakages.
- Spill kit and drip tray must be kept on site at all times during the construction phase.
- All chemical toilets/ablution facilities must be properly secured so that they cannot be windblown, be regularly serviced and should be placed outside of and more than 32m from the high sensitivity riparian area
- Concrete mixing (if any) should take place more than 50m from any watercourse with appropriate runoff control measures in place.
- Construction activities should take place during driest part of the year, where possible.
- Existing vegetation should remain where possible and vegetation clearance limited to the construction footprint only.
- Any debris/solid waste accumulated as a result of construction activities must be removed from and surrounding the watercourses.
- Bare soil surfaces must be protected against erosion using appropriate erosion control measures such as earthen berms, silt fences and sandbags.
- Should any erosion channels become evident these must be backfilled, compacted and revegetated as soon as possible.
- Material stockpiles should be placed more than 50m from the nearby watercourses, should not exceed 1,5m in height, should be covered during windy periods and monitored for any erosion channels

Operation

- Care must be taken during any maintenance activities to ensure that there is no unnecessary encroachment into sensitive surrounding wetland habitat.

- Any growth of alien invasive plant species within the rehabilitated areas must be removed and regular monitoring must take place and for a period agreed with by the Environmental Control Officer.
- The site should be monitored for 12 months after construction to ensure disturbed areas are appropriately rehabilitated.
- All infrastructure put in place should be monitored and maintained in accordance with a maintenance management plan.
- Should any infrastructure appear to be failing then the affected areas must be rectified.
- Should any erosion channels development these must be backfilled, compacted and revegetated
- All infrastructure put in place should be monitored and maintained in accordance with an approved maintenance management plan.
- All maintenance activities should be undertaken under the guidance of the maintenance management plan which includes measures to prevent any adverse impacts on the surrounding wetland environment

Ranking

RATING		Temporal Scale		Spatial Scale		Severity of Impact		Risk Likelihood or		Matrix Total
	Without Mitigation	Permanent	4	Localised	1	Severe	4	Unlikely	1	10
With Mitigation	Permanent	4	Localised	1	Slight	1	Unlikely	1	7	
Overall Significance without mitigation									Moderate-	
Overall Significance with mitigation									Low	

2.1.2 Terrestrial biodiversity

Impacts

Permanent or temporary loss of indigenous vegetation cover because of site clearing. Site clearing before construction will result in the blanket clearing of vegetation within the affected footprint.

Loss of flora species of special concern during pre-construction site clearing activities. Several special of concern are known from surrounding areas, which could be destroyed during site preparation, none of which were confirmed to be present.

Susceptibility of post construction disturbed areas to invasion by exotic and alien invasive species and removal of exotic and alien invasive species during construction. Post construction disturbed areas having no vegetation cover are often susceptible to invasion by weedy and alien species, which can not only become invasive but also prevent natural flora from becoming established.

Susceptibility of some areas to erosion because of construction related disturbances. Removal of vegetation cover and soil disturbance may result in some areas being susceptible to soil erosion after completion of the activity.

Disturbances to ecological processes: Activity may result in disturbances to ecological processes.

Loss of Faunal Habitat: Activity may result in the loss of habitat for faunal species, which could result in disturbance and displacement of faunal species.

Impacts to faunal processes because of the activity

Loss of faunal SSC due to construction activities: Activities associated with bush clearing, killing of perceived dangerous fauna, may lead to increased mortalities among faunal species.

Mitigation and Management Measures

The only loss of CBA 2 is the Nxamagale Reservoir footprint, fenced area of 1 600 m² (0.16 ha), which is regarded as having a low significance rating.

Vegetation	<p>Blanket clearing of vegetation must be limited to the site. No clearing outside of footprint to take place.</p> <p>Topsoil must be stripped and stockpiled separately during site preparation and replaced on completion where revegetation will take place.</p> <p>Any laydown areas requiring clearing must be located within already disturbed areas away from watercourses.</p>
Flora Species	<p>A flora search and rescue is recommended before commencement.</p> <p>Respective permits to be obtained beforehand</p>
Alien Invasive Species	<p>Alien trees and weeds must be removed from the site as per CARA/NEMBA requirements.</p> <p>A suitable weed management strategy to be implemented in construction and operation phases.</p> <p>After clearing and construction is completed, an appropriate cover may be required, should natural re-establishment of grasses not take place in a timely manner. This will also minimise dust on the site.</p>
Erosion	<p>Suitable measures must be implemented in areas that are susceptible to erosion. Areas must be rehabilitated, and a suitable cover crop planted once construction is completed.</p> <p>Topsoil must be stripped and stockpiled separately and replaced on completion.</p> <p>If natural vegetation re-establishment does not occur, a suitable grass must be applied.</p>
Ecological Processes	<p>Blanket clearing of vegetation must be limited to the development footprint, and the area to be cleared must be demarcated before any clearing commences.</p>

Faunal Habitat	<p>Blanket clearing of vegetation must be limited to the footprint.</p> <p>It is important that clearing activities are kept to the minimum and take place in a phased manner, where applicable. This allows any smaller animal species to move into safe areas and prevents wind and water erosion of the cleared areas.</p>
Faunal Processes	<p>The habitats and microhabitats present on the project site are not unique and are widespread in the general area, hence the local impact associated with the footprint would be of low significance if mitigation measures are adhered to.</p> <p>Small mammals within the habitat on and around the affected area are generally mobile and likely to be transient to the area. They will most likely vacate the area once construction commences. As with all construction sites there is a latent risk that there will be some accidental mortalities. Specific measures are made to reduce this risk. The risk of species of special concern is low, and it is unlikely that there will be any impact to populations of such species because of the activity.</p> <p>Reptiles such as lizards are less mobile compared to mammals, and some mortalities could arise. It is recommended that a faunal search and rescue be conducted before construction commences, although experience has shown that there could still be some mortalities as these species are mobile and may thus move onto site once construction is underway. A reptile handler should be on call for such circumstances.</p> <p>Should any amphibian migrations occur between wetland areas during construction, appropriate measures (including temporarily suspending works in the affected area) should be implemented.</p>
Faunal species	<p>A pre-commencement faunal search and rescue is recommended.</p> <p>Respective permits to be obtained beforehand.</p> <p>No animals are to be harmed or killed during the course of operations.</p> <p>Workers are NOT allowed to snare any faunal species.</p>

Ranking

RATING		Temporal Scale		Spatial Scale		Severity of Impact		Risk Likelihood or		Matrix Total
	Without Mitigation	Permanent	4	Localised	1	Moderate	2	May occur	2	9
With Mitigation	Permanent	4	Localised	1	Slight	1	Unlikely	1	7	
Overall Significance without mitigation									Moderate-	
Overall Significance with mitigation									Low	

2.1.3 Agriculture

Impacts

The current land use is livestock grazing. Loss of or damage to natural grazing vegetation can impact on the grazing potential and/or grazing capacity of the area and possibly reduce the number of animals that can be run on the area

Mitigation and Management Measures

The natural vegetation as described in the Terrestrial Biodiversity Impact Report is “Drakensberg Foothill Moist Grassland” with a conservation status of **least concern**. The natural grazing is in a very good condition with an estimated carrying capacity not exceeding 3 ha/LSU (large stock unit). Thus the carrying capacity would be potentially reduced by 1.3 LSU, however one must consider that this will only be over the short term and with proper construction methodology and rehabilitation measures the impact areas on the pipeline route/wetland areas will return to the current state within a period of 2 years. The impact area of 0.16 ha (1 600 m²) at the reservoir site will be lost to CBA 2 and grazing, but is regarded as insignificant as this will not have any significant impact on the overall CBA 2 and livestock numbers. There are no arable lands in the vicinity of the pipeline route.

Ranking

RATING		Temporal Scale		Spatial Scale		Severity of Impact		Risk Likelihood	or	Matrix Total
	Without Mitigation	Permanent	4	Localised	1	Low	1	Unlikely	1	7
With Mitigation	Permanent	1	Localised	1	Low	1	Unlikely	1	4	
Overall Significance without mitigation									Low	
Overall Significance with mitigation									Low	

2.1.4 Archaeology and cultural heritage

Impacts

A total of 14 archaeological and cultural heritage resources / sites, as defined and protected by the NHRA 1999, are recorded, of which eleven (11) are archaeological and cultural resources sites, while three (3) are Colonial Period sites.

Mitigation and Management Measures

Five (5) recorded sites are situated at such distance from the line route that no additional conservation measures on behalf of the developer are warranted for purposes of development; these sites will be conserved in situ. Individual temporary conservation measures during the tenure of construction works will be implemented at 3 sites as referenced in the EMPr

A temporary conservation corridor will be maintained for the period of construction works at Sensitive Areas 1 and 2 as referenced in the EMPr with sketch plans and photographic records submitted to ECPHRA during monitoring by the ECO.

Ranking

RATING		Temporal Scale		Spatial Scale		Severity of Impact		Risk Likelihood or		Matrix Total
	Without Mitigation	Permanent	4	Localised	1	Severe	4	May occur	2	11
With Mitigation	Permanent	4	Localised	1	Low (with conservation)	1	Unlikely	1	7	
Overall Significance without mitigation									Moderate-	
Overall Significance with mitigation									Low	

2.1.5 Palaeontology

Impacts

One site with faint plant impressions was identified. These impressions were uncovered during excavations for the pipeline. Careful investigation of the excavated mudstones indicated only one small area of faint impressions. The excavations uncovered plant impressions that would have otherwise been undetected. Other outcrops in the area could produce well-preserved fossils

Mitigation and Management Measures

The dolerite is igneous in origin and any fossils in the area would have been baked and highly metamorphized. If significant fossil remains or plant remains are discovered during any phase of construction, either on the surface or exposed by excavations, the **Chance Find Protocol** must be implemented by the ECO/site manager in charge of these developments. The chance finds protocol is included in the EMPr

Ranking

RATING		Temporal Scale		Spatial Scale		Severity of Impact		Risk Likelihood or		Matrix Total
	Without Mitigation	Permanent	4	Localised	1	Moderate	2	May occur	2	9
With Mitigation	Permanent	4	Localised	1	Moderate	2	May occur	2	9	
Overall Significance without mitigation									Moderate-	
Overall Significance with mitigation									Moderate-	

2.2 POTENTIAL IMPACT OF THE LISTED ACTIVITIES ON ENVIRONMENTAL AND SOCIO-ECONOMIC ATTRIBUTES PRIOR TO MITIGATION

The potential impact of the listed activities on environmental and socio-economic attributes identified during the assessment phase (prior to mitigation) is evaluated against the potential impact of the no-go option (the option wherein the listed activity is not licensed) on the same attributes. The summary of this assessment is provided in the table below.

Development vs. No-Go Option

ATTRIBUTES	DEVELOPMENT OPTION	NO-GO OPTION (STATUS QUO)
NATURAL ENVIRONMENT		
Air pollution	0	0
Noise pollution	0	0
Heritage Impact	-1	0
Visual aesthetics	-1	0
Economic Environment		
Process efficiency	1	0
Job creation	1	0
Social Environment		
Employment opportunities & skills development	1	0
Development / Implementation		
Technology	1	0
Infrastructure	1	0
Safety, security & provision of services to communities	1	0
TOTALS	4	0

Note: Positive Impact = 1, No Impact = 0 and Negative Impact = -1

The positive environmental and social impacts of the Development option outweigh the negative impacts. The consideration of the “no-go” option can be dismissed as a sustainable alternative as the development option results in an overall positive impact of 4.

2.3 CONCLUSION

a) Aquatic & wetland

The proposed pipeline and reservoir are relatively small-scale and low impact activities that require relatively small-scale footprint and construction activities. All potential adverse impacts associated with the development were considered acceptable provided that the mitigation measures in this report are implemented. The majority of the impacts are considered to be of **moderate significance pre-mitigation** and through the implementation of the mitigation measures in this report the **impacts can be mitigated to low significance**. It is of the specialist opinion that there are no fatal flaws associated with the development proposals.

b) Terrestrial Biodiversity

Impacts relating to loss of vegetation and disruption to ecological processes are deemed to be **medium** before mitigation and **very low** after mitigation.

Impacts relating to disturbance and displacement of faunal habitat and faunal species of conservation concern are deemed to be **medium** before mitigation and **very low** after mitigation. Any impact is likely to be temporary during construction.

Impacts relating to disturbance of flora species of conservation concern located in the site will be **medium** before mitigation and **very low** after mitigation.

All other impacts are assessed to be of **medium** significance before mitigation and can be reduced to **very low** with the implementation of the mitigation measures.

Due to the temporary nature of pipelines, this impact will be temporary, and the site will revegetate to a pre-construction state.

c) Agriculture

Impacts pre- and post-mitigation are considered to be of low significance as the impact will be temporary and the site will return to a pre-construction state

d) Archaeology and Cultural Heritage

Impact significance at one of the heritage sites is listed as **moderate pre-mitigation** and **negligible post-mitigation**.

The archaeologist/cultural heritage specialist recommends that the proposed development proceeds provided developer compliance with relevant heritage recommendations / requirements

e) Palaeontology

Impact on fossils in the area may be of a medium (moderate) significance.

The Palaeontologist however considers that the pipeline development will not lead to detrimental impacts on the palaeontological resources of the area. And thus, the development **may be authorised in its whole extent**, as the development footprint is not considered sensitive in terms of palaeontological resources. Chance Finds Protocol to be implemented, if fossils are noted.

NOTE:

All specialists concluded that the proposed development should proceed providing prescribed mitigation measures are implemented.

The development option outweighs the “no-go” option when considered in terms of environmental and socio-economic attributes.

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 project is a service delivery project supplying treated potable water to rural communities who have no other access to a clear and hygienic water supply and whose current supply might well be regarded as contaminated being boreholes and/or open water bodies.

The proposed pipeline route has followed an environmentally-informed layout to minimise the impact on surrounding high sensitivity environmental resources, while still taking into account engineering feasibility and keeping within the administrative boundaries (Municipality) of the water service provider.

There are no energy requirements for the operation of this particular water supply system, which is entirely gravity fed from the Ngqamakwe Command Reservoir thus negating pumping costs whether Eskom related or diesel fuel

In this case, the entire pipeline route will only directly affect watercourses/wetlands in three areas (the areas subject to this BAR Process), that are unavoidable as moving the route upslope would impact on the hydraulic gradient of the gravity fed pipeline. The total impact footprint through the three areas is $\pm 800 \text{ m}^2$ and prescribed construction methodology and rehabilitation/revegetation measures will ensure that the impact is temporary and the pipeline footprint should return to its pre-construction state within 2 years. The pipeline, being critical infrastructure, is a temporary activity and the reservoir footprint is small in area and not deemed to be a threat to any critical biodiversity or ecological support area, due to its limited footprint

The reservoir with a capacity of $3\,500 \text{ m}^3$ will serve Cluster 8 with 1 329 (2016) houses and a design population (2038) of 9 398 residents. The Nxamaele Command reservoir will provide 16 hours of storage of the AADD of 5 227 kl/day. The footprint of the fenced area including the reservoir is $1\,600 \text{ m}^2$ (0.16 ha). The office of the Chief Directorate: National Geospatial Information (DALRRD) has indicated that the position of the reservoir in proximity of the trig-survey beacon is perfectly acceptable. The only loss of CBA 2 is the Nxamagele Reservoir footprint, fenced area of $1\,600 \text{ m}^2$ (0.16 ha), which is regarded as having a low significance rating. It is considered that the Nxamagele Reservoir will have a negligible impact on the environment and serves a critical purpose.

The project design has been environmentally informed through specialist aquatic/freshwater, terrestrial, cultural heritage and palaeontology/fossils studies. Social and community considerations and inputs have been dealt with in-house by the CHDM ISD Unit and their appointed specialist Q-Projek; see Appendix E sections 4.1 and 4.2. The respective Ward Councillors' have confirmed with the EAP that they are aware of and support the initiative

Impacts in terms of Archaeology and Cultural Heritage and Palaeontology have been fully assessed and although the impacts are regarded as moderate both specialists are of the opinion that impacts can be managed through the respective protocols, ECPHRA have also indicated that the application for the excavation is supported, subject to the public participation process engaged in prior to the excavation, possible relocation, reconstruction or deposition at the appropriate repository, should any “finds” be made.

It is the EAP’s opinion that there are no significant environmental issues that may preclude the construction of this water supply project.

No other alternatives considered

No-go alternative (compulsory)

The “no-go” or “no-action” option would entail maintaining the *status quo*.

The much needed potable water for communities would have to be sourced from alternative sources, none of which exist in the areas surrounding these rural communities.

The “no-go” alternative will have a significant negative impact on the residents as they will not have access to potable water. In addition, CHDM will have to continue with providing the erratic supply from boreholes in an attempt to fulfil its mandate in terms of the NWA

SECTION E. RECOMMENDATIONS OF PRACTITIONER

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

YES	NO
YES	NO

Is an EMPr attached?

The EMPr must be attached as Appendix F.

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):

NONE

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

The following recommendations to be included in any environmental authorisation (EA):

- (i) All necessary authorisations in the form of a GA or WUL in terms of the NWA must be obtained prior to construction.
- (ii) The applicant, implementing agent and Contractor shall comply with any conditions set out by the Eastern Cape Provincial Heritage Authority
- (iii) An ECO must be appointed for the duration of the construction period to monitor and ensure compliance with the conditions of the EA/EMPr, GA/WUL, ECPHRA requirements and any other permits.

SECTION F: APPENDICES

The following appendices must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMPr)

Appendix G: Other information

App G1-Correspondence with DEDEAT

App G2-CHDM letter re: ISD

App G3.1-ECPHRA letter

App G3.2-SAHRIS Upload

