

eThekwini Municipality



**DRAFT BASIC ASSESSMENT REPORT FOR THE PROPOSED
INSTALLATION OF A 500MM STEEL WATERMAIN INLET TO
WESTRIDING RESERVOIR, ASSAGAY, DURBAN.**

J34049

November 2014



People • Expertise • Excellence

Basic Assessment Report



edtea

Department :
Economic Development, Tourism and
Environmental Affairs
PROVINCE OF KWAZULU-NATAL

(For official use only)

EIA File Reference Number:
NEAS Reference Number:
Waste Management Licence Number:
(if applicable)
Date Received:

DC/
KZN/EIA/

BASIC ASSESSMENT REPORT

Submitted in terms of the Environmental Impact Assessment Regulations, 2010 promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

This template may be used for the following applications:

- **Environmental Authorization** subject to basic assessment for an activity that is listed in Listing Notices 1 or 3, 2010 (Government Notices No. R 544 or No. R 546 dated 18 June 2010); or
- **Waste Management Licence** for an activity that is listed in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) for which a basic assessment process as stipulated in the EIA Regulations must be conducted as part of the application (refer to the schedule of waste management activities in Category A of Government Notice No. 718 dated 03 July 2009).

Kindly note that:

1. This **basic assessment report** meets the requirements of the EIA Regulations, 2010 and is meant to streamline applications. This report is the format prescribed by the KZN Department of Economic Development, Tourism & Environmental Affairs. Please make sure that this is the latest version.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not 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 text.
3. Where required, place a cross in the box you select.
4. An incomplete report will 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 will result in the rejection of the application as provided for in the regulations.
6. No faxed or e-mailed reports will be accepted.
7. The report must be compiled by an independent environmental assessment practitioner ("EAP").
8. 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.
9. The KZN Department of Economic Development, Tourism & Environmental Affairs may require that for specified types of activities in defined situations only parts of this report need to be completed.
10. The EAP must submit this basic assessment report for comment to all relevant State departments that administer a law relating to a matter affecting the environment. This provision is in accordance with Section 24 O (2) of the National Environmental Management Act 1998 (Act 107 of 1998) and such comments must be submitted within 40 days of such a request.
11. **Please note that this report must be handed in or posted to the District Office of the KZN Department of Economic Development, Tourism & Environmental Affairs to which the application has been allocated (please refer to the details provided in the letter of acknowledgement for this application).**

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DEPARTMENTAL REFERENCE NUMBER(S)

File reference number (EIA):	
File reference number (Waste Management Licence):	

SECTION A: DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER AND SPECIALISTS

1. NAME AND CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

Name and contact details of the EAP who prepared this report:

Business name of EAP:	GIBB (Pty) Ltd		
Physical address:	1st Floor, Norfolk House, 54 Norfolk Terrace, Westville, 3630		
Postal address:	PO Box 1365, Westville		
Postal code:	3620	Cell:	-
Telephone:	031 267 8560	Fax:	031 266 3310
E-mail:	kdejong@gibb.co.za		

2. NAMES AND EXPERTISE OF REPRESENTATIVES OF THE EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
Elisabeth Nortje	BSc Honours	IAIAsa	11
Katherine de Jong	BSc Honours	IAIAsa	4
Charl Kruger	BSc	IAIAsa	1

3. NAMES AND EXPERTISE OF SPECIALISTS

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/ s contributed to in this basic assessment report	Title of specialist report/ s as attached in Appendix D
Ryan Edwards	MSc Environmental Science (University of KwaZulu-Natal, Durban)	Wetland Specialist	Section C : Subsection 3 and 4 and Section E	GCS West Riding Water Main Project - Wetland and Riparian Habitat Assess...
David Styles		Vegetation Specialist	Section C : Subsection 3	West Riding Reservoir

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			and 4 and Section E	Vegetation Report
Len van Schalkwyk	MA Archaeology, BA Honours Archaeology	Heritage Specialist	Section C: Subsection 6 and Section E	West Riding HIA exemption application 5 August 2014
Elizabeth Wahl	BA Honours African Studies Archaeology and Sociology majors, Currently completing an MPhil in the Conservation of the Built Environment	Heritage Specialist	Section C: Subsection 6 and Section E	West Riding HIA exemption application 5 August 2014

SECTION B: ACTIVITY INFORMATION

1. PROJECT TITLE

Describe the project title as provided on the application form for environmental authorization:

Proposed construction of approximately 4km of 500mm steel watermain inlet to West Riding Reservoir, KwaZulu-Natal.

2. PROJECT DESCRIPTION

Provide a detailed description of the project:

1.1 Project Description

eThekweni Water and Sanitation propose to install approximately 4 km of 500mm diameter continuously welded steel pipe in order to provide a long term solution to water supply challenges experienced in the West Riding area. The pipe will be constructed in residential roads and will include pipe jacking across Old Main road. A new reticulation watermain to service the high level zone of West Riding Reservoir will also be constructed.

The proposed pipe will be constructed along the following residential roads:

- Assagay Road to Old Main Road (along Assagay road the pipeline crosses a Stream channel and riparian zone with patches of unchannelled valley bottom wetland). Also located along Assagay road is a steep valley head seep wetland unit bisected by a pair of incised channels that converge at the culvert inlet of Assagay Road.
- The pipe will thereafter be pipe jacked in a sleeve of a minimum diameter of 900mm across Old Main Road.
- A section of the pipe then runs within the Transnet-owned reserve, there is an existing pipe here and the new inlet will be connecting into it.
- Following this the pipe will then enter Galloway Road, turn into Ashley Road and then it will enter Elizabeth Road, which is where it will cross a small stream channel and riparian zone.
- The pipeline will finally continue into Marion Road where it will tie into the existing West Riding Reservoir.

Please refer to Figure 1 below.

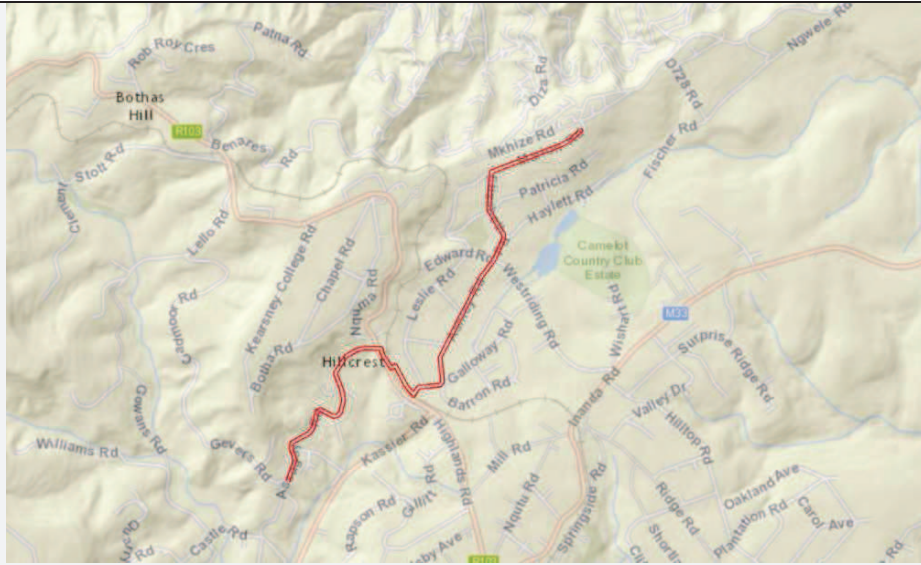


Figure 1: Showing the proposed location of the pipeline.

The “Pipe Jacking” method of pipeline installation is the proposed method that will be followed. It involves the use of hydraulic jacks to force the designed pipes through the subsurface behind a shield at the same time as excavation is occurring. Thrust and reception pits will need to be constructed (requiring bulk earthworks usually at manhole locations) for this method. The following streams are located within the project area which are likely to be impacted by the pipeline installation process:

- Watercourse Unit 1 – Stream channel and riparian zone with patches of un-channelled valley bottom wetland
- Watercourse Unit 2 – Valley head seep with stream channels
- Watercourse Unit 3 – Stream channel and riparian zone

1.2 Site Description and Layout

A 4km long, 500mm diameter watermain is proposed to be installed from the corner of Gevers Road and Assagay Road to the West Riding Reservoir within the Assagay area, Durban.

Assagay was formerly a small local authority on the outskirts of Durban adjacent to its sister village of Hillcrest and has now effectively become part of that booming suburb of Durban. Assagay has access to both the M13 and N3 freeway systems linking it directly with Durban and Pietermaritzburg, and Kassier Road links it via Old Main Road to the central commercial area of Hillcrest.

According to the Wetland Specialists, the proposed water pipeline traverses the outer reaches of two major catchments, namely the Mhlatuzana River catchment in the south-west and the Mgeni River catchment in the north-east. The alignment of Old Main Road roughly represents the location of the drainage divide between the two major catchments. The western portion of the pipeline route within the

Mhlatuzana River catchment is located within quaternary catchment U60F and the eastern portion of the route within the Mgeni River catchment is located within U20M.

More specifically, the south-western portion of the route is located within the catchment of a left-bank tributary of the Mhlatuzana River, in the upper-most reaches of the Mhlatuzana River catchment. The north-eastern portion of the route is located within the upper-most reaches of the Nkutu River, which is a left-bank tributary of the Molweni River that is a right-bank tributary of the Mgeni River. Working for Water has made a contribution towards clearing the area of invasive plants and continues to eradicate all alien flora with the cooperation of landowners.

Refer to Figure 1 above and the Locality Map in Appendix A

North:	North of the site is the rural community of Mkholome.
East:	To the East of the site is the West Riding and Hillcrest community as well as the Camelot Estate and Golf Course.
South:	South of the site is the Hillcrest Private Hospital, M13 and N3.
West:	To the West of the pipeline route is Bothas Hill with Kearsney College Boys School situated at the top on of Bothas Hill.

1.3 Project Motivation

The Department of Water and Sanitation (DWS) is leading efforts to deal with concerns over the availability of sufficient water for the KwaZulu-Natal (KZN) coastal metropolitan area water supply system. The water situation in the area is such that water use already exceeds the assured supply. The average rainfall over the last few years has kept the major supply dams full; however, this has not been sufficient to fill the Mgeni system storage dams completely.

The KZN coastal metropolitan area is the third-largest contributor to the national economy and has the second-largest population concentration in the country. The area is experiencing rapid growth in water requirements owing to the migration of people from the rural areas to the city, economic growth and development initiatives. Infrastructure projects are already under way to tackle the water shortages. Some of the projects include the construction of the Spring Grove dam and the raising of the Hazelmere dam.

The KZN Strategy Steering Committee, which monitors the implementation of the KZN coastal metropolitan area water supply system, will focus on short- to medium- term measures to meet the demand. These include water conservation and water demand management, the reuse of treated wastewater, effluent treatment works and the desalination of seawater. The eThekweni metro is dealing with water losses through the replacement of leak-prone pipelines, pressure reduction rezoning and the improvement of reservoirs.

Bill of Rights (Chapter 2 of the Constitution of the Republic of South Africa)

Section 27(1)(b) of the Bill of Rights provides that “everyone has the right to have access to sufficient water”, and section 27(2) obliges the state to “take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation” of everyone’s right of access to sufficient water. This is particularly relevant in the context of waterborne sanitation, as well as for hand washing, which is important for health and hygiene purposes (a component of sanitation). Further, lack of access to adequate sanitation can lead to compromised water supply sources.

3. ACTIVITY DESCRIPTION

Describe each listed activity in Listing Notice 1 (GNR 544, 18 June 2010), Listing Notice 3 (GNR 546, 18 June 2010) or Category A of GN 718, 3 July 2009 (Waste Management Activities) which is being applied for as per the project description:

In terms of the National Environmental Management Act, 1998 (No.107 of 1998) [NEMA] and associated Environmental Impact Assessment (EIA) Regulations, environmental authorisation must be obtained from the relevant decision-making authority, the Department of Agriculture, Environmental Affairs and Rural Development (DAEARD). This must be done prior to the commencement of certain listed activities that may result in potential negative impacts on the environment. The proposed pipeline involves the following listed activities, as per Government Notice No. R. 544:

Activity No. 9: *“The construction of approximately 4km of 500mm diameter pipeline for the bulk transportation of water.”*

Activity No. 11: *“The construction of: ... (xi) infrastructure or structures covering 50 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.”*

Activity No. 18: *“The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) a watercourse ...”*

3.1.1 Water Use Licence

The construction of the West Riding Pipeline will have an impact on the bed, bank, course and characteristics of three watercourse areas:

- Watercourse Unit 1 – Stream channel and riparian zone with patches of un-channelled valley bottom wetland
- Watercourse Unit 2 – Valley head seep with stream channels
- Watercourse Unit 3 – Stream channel and riparian zone

In Terms of the National Water Act (Act No 36 of 1998) [NWA], a Water Use License Application (WULA) is required, this is a legislative process governed by DWA for the authorisation of all water uses defined in section 21 of the NWA.

Activity No	Description
Section 21 (c)	Impeding and diverting the flow of water in a watercourse
Section 21 (l)	Altering the bed, bank, course or characteristics of a watercourse

4. 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 report. 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.

Sections B 5 – 15 below should be completed for each alternative.

In terms of the EIA regulations, attention needs to be given to all possible alternatives. The assessment of alternatives allows different approaches and ways of meeting the need, purpose and objectives of a proposed activity. Alternatives may include location or route alternatives, design/layout alternatives, activity alternatives and processes or technology alternatives, etc.

Note: For the purposes of this report, only Alternative A1 (preferred alternative) has been assessed in detail, since the proposed project is for addressing a need for provision of water to a specific residential area, other alternatives are not considered. For the purpose of this project, site alternatives are not applicable as this is linear activity.

However, the no-go alternative or option was considered, as it provides the baseline against which the impacts of the preferred alternative can be compared.

No- Go Option

The “no go option” is not a viable option for eThekwini Water and Sanitation as it will result in not meeting the water shortage concerns in the West Riding Area. The no-go option is therefore not further assessed.

5. 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, minutes and seconds. List alternative sites were applicable.

Alternative:	Latitude (S):			Longitude (E):		
Alternative S1 ¹ (preferred or only site alternative)	°	'	"	°	'	"
Alternative S2 (if any)	°	'	"	°	'	"
Alternative S3 (if any)	°	'	"	°	'	"

In the case of linear activities:

Alternative:	Latitude (S):			Longitude (E):		
Alternative S1 (preferred or only route alternative)						
• Starting point of the activity	30	44	59.62	29	46	24.98
• Middle point of the activity	29	45	45.27	30	45	44.76
• End point of the activity	29	45	11.73	30	46	9.89
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 500m along the route for each alternative alignment.

6. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	Size of the activity:
Alternative A1 ² (preferred activity alternative)	m ²
Alternative A2 (if any)	m ²
Alternative A3 (if any)	m ²

or, for linear activities:

Alternative:	Length of the

¹ "Alternative S.." refer to site alternatives.
² "Alternative A.." refer to activity, process, technology or other alternatives.

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

activity:

4 000m
m
m

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

Alternative:

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

Size of the site/servitude:

m ²
m ²
m ²

7. SITE ACCESS

Does ready access to the site exist?

YES	NO
X	
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; access to the site will be via the existing residential roads.

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.

8. 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 report.

The site or route plans must indicate the following:

- 8.1. the scale of the plan which must be at least a scale of 1:500;
- 8.2. the property boundaries and numbers/ erf/ farm numbers of all adjoining properties of the site;
- 8.3. the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 8.4. the exact position of each element of the application as well as any other structures on the site;
- 8.5. 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;
- 8.6. walls and fencing including details of the height and construction material;
- 8.7. servitudes indicating the purpose of the servitude;
- 8.8. sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers, streams, drainage lines or wetlands;
 - the 1:100 year flood line (where available or where it is required by DWA);
 - ridges;

- cultural and historical features;
 - areas with indigenous vegetation including protected plant species (even if it is degraded or infested with alien species);
- 8.9. 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
- 8.10. the positions from where photographs of the site were taken.

See attached in Appendix A.

9. SITE PHOTOGRAPHS

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

See attached in Appendix B.

10. FACILITY ILLUSTRATION

A detailed illustration of the facility must be provided at a scale of 1:200 and attached to this report as Appendix C. The illustrations must be to scale and must represent a realistic image of the planned activity/ies.

See Attached in Appendix C

11. ACTIVITY MOTIVATION

11.1. Socio-economic value of the activity

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

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

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

How many new employment opportunities will be created in the development phase of the activity?

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

What percentage of this will accrue to previously disadvantaged individuals?

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

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

What percentage of this will accrue to previously disadvantaged individuals?

R30 million	
Unknown	
YES X	NO
YES X	NO
Unknown	
Unknown	
Unknown	
Unknown	
Unknown	
Unknown	

11.2. Need and desirability of the activity

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

The main motivation behind the project is to provide a long term solution to the current water supply challenges currently experienced in the West Riding area.

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

The current activity will help supply a basic needs right of water to the community of the West Riding Area.

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

The activity will bring a basic need to the local community and helping alleviate the current water shortage experienced in the area.

12. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:

Administering authority:

Date:

<p>The Constitution of the Republic of South Africa, Section 24 (Environmental Right):</p> <p>1) Everyone has the right :</p> <p>a) to an environment that is not harmful to their health or well-being; and</p> <p>b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:</p> <p>i) prevent pollution and ecological degradation;</p> <p>ii) promote conservation; and</p> <p>iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”</p>	<p>The Constitutional Assembly</p>	<p>1996</p>
<p>National Environmental Management Act 107 of 1998 (NEMA)</p>	<p>National & Provincial</p>	<p>1998</p>
<p>National Water Act 36 of 1998</p>	<p>Department of Water Affairs and Forestry</p>	<p>1998</p>
<p>National Environmental Management: Air Quality Act 39 of 2004</p>	<p>National & Provincial</p>	<p>2004</p>
<p>National Environmental Management: Waste Act 59 of 2008</p>	<p>National & Provincial</p>	<p>2008</p>
<p>National Environmental Management: Biodiversity Act 10 of 2004</p>	<p>National & Provincial</p>	<p>2004</p>

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National Heritage Resources Act 25 of 1999	Amafa-AkwaZulu-Natali / Heritage KwaZulu-Natal (Amafa)	1999
Occupational Health and Safety Act 85 of 1993	Department of Labour	1993
Hazardous Substances Act 15 of 1973	National & Provincial	1973
National Road Traffic Act 93 of 1996	National & Provincial	1996
All relevant Provincial regulations and Municipal bylaws	Provincial/ Municipal Bylaws: eThekweni Municipality or the KZN District Municipality	-

13. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

13.1. Solid waste management

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

YES X	NO
----------	----

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

Unknown at this stage	
-----------------------	--

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

The solid waste generated on site during the construction phase will be stored in skips by the appointed contractor. An appointed waste contractor will thereafter remove the waste to the closest registered land fill site.

Where will the construction solid waste be disposed of? (provide details of landfill site)

A suitable registered municipal landfill site. The closest one being the Shongweni Landfill site.

Will the activity produce solid waste during its operational phase?

YES	NO X
-----	---------

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

m ³	
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How will the solid waste be disposed of? (provide details of landfill site)

N/A

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

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine the further requirements of the application.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

YES	NO X
-----	---------

Small amounts during the construction phase (e.g. oily rags etc.)

If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

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

YES	NO X
-----	---------

If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

13.2. Liquid effluent

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

YES	NO X
-----	---------

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

m³

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

YES	NO X
-----	---------

If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

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

YES	NO X
-----	---------

If yes, provide the particulars of the facility:

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

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

N/A

13.3. Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES X	NO
----------	----

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

YES	NO X
-----	---------

If yes, contact the KZN Department of Economic Development, Tourism & Environmental Affairs to obtain clarity regarding the process requirements for your application.

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

<p>Construction Phase:</p> <p>Dust and vehicle emissions will be generated during the construction phase as a result of trucks transporting construction, pipeline material and other earth moving machinery. This will be a result from the exhaust fumes generated from the construction vehicles on site. The emissions will, however, have short term impacts on the immediate surrounding areas and thus the authorisation of such emissions will not be required.</p> <p>Operation Phase:</p> <p>There will be no emissions generated during the operation phase other than from exhaust fumes from maintenance vehicles.</p>

13.4. Generation of noise

Will the activity generate noise?

YES X	NO
YES	NO X

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:

<p>Construction Phase:</p> <p>Noise will result from the movement of vehicles, trucks and other associated machinery used during the construction operations of the implementation of the pipeline. However, the noise associated with construction activities will be of short term, localised and will only last during the construction phase of the project.</p> <p>Operation Phase:</p> <p>There will be no noise generated during the operational phase, other than during regular maintenance along the proposed pipeline.</p>

14. 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 X
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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:

	litres
YES X	NO

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

If YES, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this report.

The above mentioned application is currently in progress and will be submitted to the Department of Water and Sanitation (DWS).

15. ENERGY EFFICIENCY

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

N/A

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

N/A

SECTION C: 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):

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

1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

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

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

Flat	1:50 1:20	–	1:20 1:15	–	1:15 – 1:10	1:10 1:7,5	–	1:7,5 – 1:5	Steeper than 1:5
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2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site (Please cross the appropriate box).

Alternative S1 (preferred site):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley X	Plain	Undulating plain/low hills X	Dune	Sea- front
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Alternative S2 (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea- front
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Alternative S3 (if any):

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea- front
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3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Has a specialist been consulted for the completion of this section?

YES X	NO
------------------------	----

If YES, please complete the following:

Name of the specialist:	GCS Water & Environmental Consultants (Ryan Edwards)
Qualification(s) of the specialist:	MSc Environmental Science

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Postal address:	PO Box 819, Gillitts		
Postal code:	3603		
Telephone:	031 764 7130	Cell:	
E-mail:	ryane@gcs-sa.biz	Fax:	031 764 7140
Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?	YES	NO	X
If YES, specify and explain:	N/A		
Are there any special or sensitive habitats or other natural features present on any of the alternative sites?	YES	NO	X
If YES, specify and explain:	N/A		
Are any further specialist studies recommended by the specialist?	YES	NO	X
If YES, specify:	N/A		
If YES, is such a report(s) attached in <u>Appendix D</u> ?	YES	NO	X

Signature of specialist:		Date:	13-08-14
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Is the site(s) located on any of the following (cross the appropriate boxes)?

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

Has a specialist been consulted for the completion of this section?	YES	NO X
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If YES, please complete the following:

Name of the specialist:	GCS Water & Environmental Consultants (Ryan Edwards)		
Qualification(s) of the specialist:	MSc Environmental Science		
Postal address:	PO Box 819, Gillitts		
Postal code:	3603		

Telephone:	031 764 7130	Cell:	
E-mail:	ryane@gcs-sa.biz	Fax:	031 764 7140

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites?	YES	NO X
---	-----	----------------

If YES, specify and explain:	N/A
------------------------------	------------

Are there any special or sensitive habitats or other natural features present on any of the alternative sites?	YES X	NO
--	-----------------	----

If YES, specify and explain:	<p>The species listed below are protected by the National Forests Act and may not be damaged or destroyed without permit authorization from the national Department of Agriculture, Forestry and Fisheries (DAFF):</p> <ul style="list-style-type: none"> • At one point a homeowner has planted two <i>Podocarpus henkellii</i> (Henkel's or Drooping-leaf Yellowwood) trees on the verge. • At another point a homeowner has planted a <i>Barringtonia racemosa</i> (Powder-puff Tree) tree the verge. <p>The following plants have been planted in many places on road verges along the route and are protected by the provincial conservation ordinance:</p> <ul style="list-style-type: none"> • <i>Dietes grandiflora</i>. • The species involved on road verges are as follows: <i>Aloe arborescens</i> (Krantz Aloe, most common), <i>Aloe barberae</i> (Tree Aloe, next most common), <i>Aloe ferox</i> (Bitter Aloe, uncommon) and <i>Aloe cf. tenuior</i> (at one locality, plants not in flower). These species are not rare or threatened, although <i>Aloe barberae</i> is uncommonly encountered in the wild.
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Are any further specialist studies recommended by the specialist?	YES	NO X
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If YES, specify:	N/A
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If YES, is such a report(s) attached in <u>Appendix D</u> ?	YES	NO X
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Signature of specialist:		Date:	13-08-14
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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 X	Veld dominated by alien species ^E X	Gardens X
Sport field	Cultivated land	Paved surface	Building or other structure X	Bare soil X

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.

A specialist was consulted for the above section.

5. LAND USE CHARACTER OF SURROUNDING AREA

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

Land use character	YES	NO	Description
Natural area	YES	NO X	
Low density residential	YES	NO X	
Medium density residential	YES X	NO	The West Riding, Assagay and Hillcrest residential area surrounds the project area as the pipeline will be installed in the current servitude along the community roads.
High density residential	YES X	NO	The West Riding, Assagay and Hillcrest residential area surrounds the project area as the pipeline will be installed in the current servitude along the community roads
Informal residential	YES X	NO	To the North of the West Riding reservoir we find the community of Mkholome.
Retail commercial & warehousing	YES X	NO	The Sugarloaf Centre is situated along the route at the corner of Assagay Rd and Old Main Rd.
Light industrial	YES	NO X	
Medium industrial	YES	NO X	
Heavy industrial	YES	NO X	
Power station	YES	NO X	
Office/consulting room	YES	NO X	
Military or police base/station/compound	YES	NO X	
Spoil heap or slimes dam	YES	NO X	
Quarry, sand or borrow pit	YES	NO X	
Dam or reservoir	YES X	NO	To the east of the site is Camelot Country Club Dam.
Hospital/medical centre	YES X	NO	LifeCare Emergency Medical Services
School/ creche	YES X	NO	To the West of the project is Kearsney College at the top of

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			Botha's Hill.
Tertiary education facility	YES	NO X	
Church	YES X	NO	The project will run through and along the property of the Christ Church Hillcrest.
Old age home	YES	NO X	
Sewage treatment plant	YES	NO X	
Train station or shunting yard	YES X	NO	To the west of the project, along the middle of the section of pipeline project is Padley Station.
Railway line	YES X	NO	To pipeline will be pipe-jacked under the railway line.
Major road (4 lanes or more)	YES	NO X	
Airport	YES	NO X	
Harbour	YES	NO X	
Sport facilities	YES	NO X	
Golf course	YES X	NO	The Camelot Golf Course can be seen on the Eastern side of the project.
Polo fields	YES	NO X	
Filling station	YES	NO X	
Landfill or waste treatment site	YES	NO X	
Plantation	YES	NO X	
Agriculture	YES	NO X	
River, stream or wetland	YES X	NO	The pipeline cross a stream along Ashley Road
Nature conservation area	YES	NO X	
Mountain, hill or ridge	YES X	NO	Botha's Hill is situated on the Western side of the project.
Museum	YES	NO X	
Historical building	YES	NO X	
Protected Area	YES	NO X	
Graveyard	YES	NO X	
Archaeological site	YES	NO X	
Other land uses (describe)	YES	NO X	

6. CULTURAL/ HISTORICAL FEATURES

"Leading the attainment of inclusive growth for job creation and economic sustenance"

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Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or within 20m of the site?

YES	NO X
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If YES, contact a specialist recommended by AMAFA to conduct a heritage impact assessment. The heritage impact assessment must be attached as an appendix to this report.

Briefly explain the recommendations of the specialist:

None

Refer to the Exemption Application in Appendix D3.

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

YES	NO X
YES	NO X

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

If YES, please submit the necessary application to AMAFA and attach proof thereof to this report.

SECTION D: PUBLIC PARTICIPATION

1. ADVERTISEMENT

GIBB will conduct a Public Participation Process (PPP) with the following key features and associated milestones:

- **An Interested and Affected Parties (I&APs) Register/ Database will be initiated and will be progressively populated as I&APs are identified or registered. (Refer to Appendix E1)**
- **Media notices informing readers of the application to DAEA of the 4km West Riding Reservoir pipeline will invite I&APs to register and/or provide comment. The media advert will be placed in the local newspaper (Refer to Appendix E2).**
- **Notice boards were designed based on the specification of the NEMA EIA Regulations GNR 543, Section 54 (2) and (4), and displayed along the route of the pipeline (Refer to Appendix E3)**
- **A Public Meeting date and venue will be confirmed, minutes of the public meeting will be circulated with the Final Basic Assessment Report (BAR) (Refer to Appendix E4)**
- **A Comments and Response Report will be compiled based on comments received on the Draft BAR**
- **All Correspondence with I&APs will be included in Appendix E6 once the Draft BAR has been circulated.**

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

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- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
- (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;

GIBB attached three (3) site notice boards (Start, Middle and End) along the proposed route for the construction of the 500mm steel Watermain pipeline inlet to West Riding Reservoir, KwaZulu-Natal. Site Notices were placed on the 2nd July 2014.

- (b) giving written notice to—
- (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the local and district municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity (as identified in the application form for the environmental authorization of this project); and
 - (vii) any other party as required by the competent authority;

The identified landowners have been involved in the proposed project and are in full support of it. They have received written notice and they have been included on all correspondence for the project. Additionally, due to the nature of the project and density of the adjacent residential areas, the EAP motivates that site notices and media advertisements will be sufficient for the notification of surrounding landowners. (Proof attached in Appendix E6).

- (c) placing an advertisement in—
- (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

An advert will be placed in the local newspaper; proof of this will be attached in Appendix E2.

- (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 district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and

- (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.

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 an application for environmental authorization has been submitted to the KZN Department of Economic Development, Tourism & Environmental Affairs in terms of the EIA Regulations, 2010;(ii)
 - (iii) a brief project description that includes the nature and location of the activity to which the application relates;
 - (iv) where further information on the application can be obtained; and
 - (iv) the manner in which and the person to whom representations in respect of the application may be made.

GIBB adhered to these content requirements, refer to Appendix E2.

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.

N/A, refer to the response in 1 (d) above.

4. DETERMINATION OF APPROPRIATE PROCESS

The EAP must ensure that the public participation process is according to that prescribed in regulation 54 of the EIA Regulations, 2010, but may deviate from the requirements of subregulation 54(2) in the manner agreed by the KZN Department of Economic Development, Tourism & Environmental Affairs as appropriate for this application. 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.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before this application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations (regulation 57 in the EIA Regulations, 2010) and be attached as Appendix E to this report.

All comments received from I&APs during the PPP for the proposed West Riding Pipeline and associated GIBB or client responses will be incorporated in the Comments and Response Register (Appendix E5) and summarised in Section E, Subsection 1 below. All comments received throughout the process will thus be included in the Final Basic Assessment report which will be submitted to the Competent Authority.

6. PARTICIPATION BY DISTRICT, LOCAL AND TRADITIONAL AUTHORITIES

District, local and traditional authorities (where applicable) are all 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 this application and provided with an opportunity to comment.

Has any comment been received from the district municipality?

YES	NO
	X

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

N/A

Has any comment been received from the local municipality?

YES	NO
	X

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

N/A

Has any comment been received from a traditional authority?

YES	NO
	X

If "YES", briefly describe the feedback below (also attach any correspondence to and from this authority with regard to this application):

N/A

7. CONSULTATION WITH OTHER STAKEHOLDERS

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 and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES	NO
	X

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

N/A

SECTION E: IMPACT ASSESSMENT

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

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

Public review of the Draft BAR will take place from 28 November 2014 to 23 January 2015 for a period of 40 days. Comments and responses received during the public review period will be recorded in the Comments and response report. (See Appendix E.5.)

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 as Appendix E to this report):

All of the issues raised by I&APs were addressed in the Draft Basic Assessment Report (BAR) – see brief CRR attached in Appendix E4. This section will also be updated once issues and concerns have been received on the public review of the Draft BAR.

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

The objective of the assessment of impacts is to identify and assess all the significant impacts that may arise as a result of the proposed development.

For each of the main project phases the existing and potential future impacts and benefits (associated only with the proposed development) were described using the criteria listed in the Impact Assessment Methodology below. This was done in accordance with Government Notice R.543, promulgated in terms of Section 24 of the NEMA and the criteria drawn from the IEM Guidelines Series, Guideline 5: Assessment of Alternatives and Impacts, published by the DEAT (April 1998). The assignment of ratings has been undertaken based on past experience of the EIA team, as well as through research. Subsequently, mitigation measures have been identified and considered for each impact and the assessment repeated in order to determine the significance of the residual impacts (the impact remaining after the mitigation measure has been implemented).

IMPACT ASSESSMENT METHODOLOGY

Duration	Extent	Irreplaceable Resources	Severity	Probability	Consequence = (Duration+Extent+Irr) x Severity	Significance	Confidence
1 Temporary	1 Footprint	1 Yes	High - negative	0 Improbable	-25 to -33	-49 to -66	Very high - negative
2 Short term	2 Site	0 No	Moderate - negative	1 Probable	-19 to -24	-37 to -48	High - negative
3 Medium term	3 Local		Low -negative	2 Definite	-13 to -18	-25 to -36	Moderate - negative
4 Long term	4 Regional		0 Negligible		-7 to -12	-13 to -24	Low - negative
	5 National		1 low-positive		0 to -6	0 to -12	Very low - negative
	6 International		2 moderate - positive				
			3 high- positive		0 to 6	0 to 12	Very Low - positive
					7 to 12	13 to 24	Low - positive
					13 to 18	25 to 36	Moderate - positive
					19 to 24	37 to 48	High - positive
					25 to 33	49 to 66	Very high - positive

Criteria	Rating Scales	Notes
Nature	Positive	An evaluation of the effect of the impact related to the proposed development
	Negative	
	Footprint	The impact only affects the area in which the proposed activity will occur
Extent	Site	The impact will affect only the development area
	Local	The impact affects the development area and adjacent properties
	Regional	The effect of the impact extends beyond municipal boundaries
	National	The effect of the impact extends beyond more than 2 regional/ provincial boundaries
	International	The effect of the impact extends beyond country borders
	Temporary	The duration of the activity associated with the impact will last 0-6 months
Duration	Short term	The duration of the activity associated with the impact will last 6-18 months
	Medium term	The duration of the activity associated with the impact will last 18 months-5 years
	Long term	The duration of the activity associated with the impact will last more than 5 years

Severity	low	Where the impact affects the environment in such a way that natural, cultural and social functions and processes are minimally affected
	moderate	Where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way, and valued, important, sensitive or vulnerable systems or communities are negatively affected
	high	Where natural, cultural or social functions and processes are altered to the extent that the natural process will temporarily or permanently cease, and valued, important, sensitive or vulnerable systems or communities are substantially affected.
Potential for impact on irreplaceable resources	No	No irreplaceable resources will be impacted.
	Yes	Irreplaceable resources will be impacted.
Consequence	Extremely detrimental	A combination of extent, duration, intensity and the potential for impact on irreplaceable resources
	Highly detrimental	
	Moderately detrimental	
	Slightly detrimental	
	Negligible	
	Slightly beneficial	
	Moderately beneficial	
Highly beneficial		
Probability (the likelihood of the impact occurring)	Extremely beneficial	It is highly unlikely or less than 50 % likely that an impact will occur. It is between 50 and 70 % certain that the impact will occur.
	Improbable	
	Probable	
Significance	Definite	It is more than 75 % certain that the impact will occur or it is definite that the impact will occur. A function of Consequence and Probability
	Very high - negative	
	High - negative	
	Moderate - negative	
	Low - negative	
	Very low	
	Low - positive	
Moderate - positive		
High - positive		
Very high - positive		

2.1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the planning and design phase:

Alternative S1 (preferred alternative) – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

Alternative S2 (if any) – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

No-go alternative (compulsory) – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1	Alternative S2
N/A	N/A

b. Process, technology, layout or other alternatives

List the impacts associated with any process, technology, layout or other alternatives that are likely to occur during the planning and design phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative) – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

Alternative A2 (if any) – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

No-go alternative (compulsory) – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

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Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:	Alternative A2:
N/A	N/A

2.2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the construction phase:

Alternative S1 (preferred site) – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

Alternative S2 (if any) – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

No-go alternative (compulsory) – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1	Alternative S2
N/A	N/A

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the construction phase (please list impacts associated with each alternative separately):

Table 1: Construction Phase Impact Assessment: Alternative 1 (Preferred Alternative)

Activity	Impact summary	Pre Mitigation Significance	Proposed Mitigation	Post Mitigation Significance
Alternative 1 (Preferred Alternative)				
Construction Phase				
<i>Direct impacts:</i>				
	Degradation of soils and soil erosion from excavation of trenches for the laying of the pipeline.	Low Negative	<ol style="list-style-type: none"> 1. A suitable stormwater drainage system and containment must be implemented by the PM to prevent soil and silt erosion, protect storage areas, to prevent uncontrolled stagnant ponds forming and avoid siltation of water resources 2. Excavated and filled trenches and stockpiles are at a stable angle and capable of accommodating normal expected water flows. 3. The PM shall take reasonable measures to control stormwater and the erosive effects thereof and shall provide a Method Statement for this. 4. During the proposed activity, the PM shall protect areas susceptible to erosion by installing necessary temporary and permanent drainage works as soon as possible and by taking measures to prevent the surface water from being concentrated in streams and from scouring slopes, banks or other areas. 5. Measures shall be implemented to effectively contain and treat any stormwater contaminated with silt, soil or any other substance in order to protect the environment. 6. Areas susceptible to erosion must be monitored regularly for evidence of erosion – this includes: <ul style="list-style-type: none"> • Areas stripped of topsoil • Soil stockpiles • Steep slopes and embankments. 7. On any areas where the risk of erosion is evident, special measures may be necessary to stabilise the areas and prevent erosion. These may include, but not be restricted to: <ul style="list-style-type: none"> • Using mechanical cover or packing structures such as geo-fabric to stabilise steep slopes or hessian, gabions and mattress and retaining walls • Straw stabilising • Brush-cut packing • Mulch or chip cover • Hydro-seeding • Constructing anti-erosion berms. 8. Where erosion does occur on any completed work/working areas, the PM shall reinstate such areas and areas damaged by the erosion at his own cost and to the satisfaction of the ECO. 9. Traffic and movement over stabilised areas shall be restricted and controlled. Any damage to the stabilized areas shall be repaired and maintained. 	Very Low Negative
	Contamination/Pollution of groundwater from leaks/spillages of hydrocarbons	Very Low negative	<ol style="list-style-type: none"> 1. Provide drip-trays / or use other methods to reduce leaking of standing machinery/plant. 2. The machinery on site is not to be refuelled or serviced near natural areas. 3. Spillages of fuels, oils and other potentially harmful chemicals should be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil from the construction site must be removed and rehabilitated timeously and appropriately. 4. Provide solid waste disposal facilities (bins) and encourage workers not to litter or dispose of solid waste in the natural environment but to use available facilities for waste disposal. 5. Ensure that any rubbish generated during construction as well as from employees (litter) is regularly cleared from the site, in particular from streams and wetlands. 6. Cement batching boards should be used and cement-based products/wash not to be disposed of into the natural environment. 7. Sanitation – portable toilets (1 toilet per 30 users is the norm) to be provided where construction is occurring. Workers need to be encouraged to use these facilities and not the natural environment. Waste from chemical toilets should be disposed of regularly and in a responsible manner by a registered waste contractor. 8. The proper storage and handling of hazardous substances (hydrocarbons and chemicals) needs to be administered during construction. 9. Construction materials liable to spillage need to be stored in appropriate containment structures (e.g. drip-trays or concrete bunded areas). 10. Appropriate methods should be employed to prevent wash of any contaminated materials, into any watercourses. 	Very Low negative
	Contamination/Pollution of surface water from leaks/spillages of hydrocarbons	Very Low negative	<ol style="list-style-type: none"> 1. Provide drip-trays / or use other methods to reduce leaking of standing machinery/plant. 2. The machinery on site is not to be refuelled or serviced near natural areas. 	Very Low negative

Activity	Impact summary	Pre Mitigation Significance	Proposed Mitigation	Post Mitigation Significance
			<ol style="list-style-type: none"> Spillages of fuels, oils and other potentially harmful chemicals should be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil from the construction site must be removed and rehabilitated timeously and appropriately. Provide solid waste disposal facilities (bins) and encourage workers not to litter or dispose of solid waste in the natural environment but to use available facilities for waste disposal. Ensure that any rubbish generated during construction as well as from employees (litter) is regularly cleared from the site, in particular from streams and wetlands. Cement batching boards should be used and cement-based products/wash not to be disposed of into the natural environment. Sanitation – portable toilets (1 toilet per 30 users is the norm) to be provided where construction is occurring. Workers need to be encouraged to use these facilities and not the natural environment. Waste from chemical toilets should be disposed of regularly and in a responsible manner by a registered waste contractor. The proper storage and handling of hazardous substances (hydrocarbons and chemicals) needs to be administered during construction. Construction materials liable to spillage need to be stored in appropriate containment structures (e.g. drip-trays or concrete bunded areas). Appropriate methods should be employed to prevent wash of any contaminated materials into watercourses. 	
	Destruction and loss of vegetation and habitat as result of site clearance	Very Low Negative	<ol style="list-style-type: none"> Limit the removal of vegetation to the construction footprint. Remove all invasive species on site. Ensure employees have been educated in minimizing environmental impacts. Avoid indigenous vegetation where possible. 	Very Low Negative
	Noise impact as a result of the use of construction machinery on site and within the residential areas	Very Low Negative	<ol style="list-style-type: none"> Limit the amount of construction vehicles on site. Maintain construction vehicles and machinery in good working order to reduce the noise on site Equipment should be fitted with noise reduction devices 	Very Low Negative
	Loss of fauna as a result of site clearance.	Very Low Negative	<ol style="list-style-type: none"> Where rare fauna (vertebrate and invertebrate) stands to be lost, every effort should be made to minimise the impact. Prohibit / control access to portions of the property that is to remain undeveloped; and ensure that animals are not impacted on (e.g. illegal poaching) Clear the site in a logical sequence and manner that allows mobile species to escape. Maintain any habitat corridors effectively. No wild animal may under any circumstance be hunted, snared, captured, injured, killed, harmed in any way or removed from its natural habitat. This includes animals perceived to be vermin such as rats and snakes. Any fauna that are found within the development footprint should be re-located to the closest point of natural or semi-natural vegetation outside of the construction area. 	Very Low negative
	Increased job opportunities for unskilled labour	Low Positive	<ol style="list-style-type: none"> Meet the requirements of the government policies for procurement and employment, as are applicable to local government, to take care of and avoid potential conflict between people in the immediate surroundings seeking employment and those from elsewhere. 	Moderate Positive
	Increased dust emissions as a result of construction machinery moving material to and from the site	Low Negative	<ol style="list-style-type: none"> Control the amount of construction vehicles on site. Exposed soil must be dampened to prevent wind action from causing dust plumes. Machinery and vehicles must be in good working conditions so as to emit minimal air pollution. 	Very Low Negative
Indirect impacts:				
	Siltation/Sedimentation of watercourses as a result of excavation of trenches	Very Low Negative	<ol style="list-style-type: none"> Reduce the disturbance generated by construction vehicles on site, reducing dust emissions. Adequate levelling and compaction during construction activities so to reduce the wind blow pollution. Adequate stockpiling of topsoil, away from prevalent winds and high gradient slopes. Sedimentation control devices, such as berms, must be temporarily installed in order to prevent sedimentation. Soil storage areas must be located further than 50 meters from any water body or water source. 	Very Low Negative
	Impact of improper waste management on site	Very Low Negative	<ol style="list-style-type: none"> Identify disposal sites for the various categories of waste likely to be generated on site. Make sure general cleanliness on site Reduce; recycle and reuse of waste must occur whenever possible. 	Very Low Negative

Activity	Impact summary	Pre Mitigation Significance	Proposed Mitigation	Post Mitigation Significance
			<ol style="list-style-type: none"> 4. Recycling bins must be separate and clearly marked according to material. 5. Waste must be stored safely away from employees' and residents' exposure. 6. Construction debris is not to be buried on site. 7. No burning of waste will occur on site, unless to remove alien seeds from storage sites. 	
	Potential impact on heritage resources and artefacts as a result of excavation of trenches	Low Negative	<ol style="list-style-type: none"> 1. AMAFA should be contacted if any graves or other heritage artefacts are identified during earth moving activities and all development should cease until further notice. 2. No structures other than sixty years are allowed to be demolished, altered or destroyed without a permit from AMAFA. 	Very Low Negative
Cumulative impacts:				
	Increase in alien vegetation	Low Negative	<ol style="list-style-type: none"> 1. Any exotic vegetation (trees and plants) encountered should be removed from the site and properly disposed of. 2. All bare surfaces across the construction site must be checked for alien plants at the end of every week and alien plants removed by hand pulling and adequately disposed. 	Very Low negative

Alternative A2 – N/A

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:
Without the proposed development proceeding, the positive and negative impacts relating to the construction will not arise. Most importantly, the status quo will prevail.

Indirect impacts:
The no-development option for this project would mean that no bulk potable water will be provided to the residential areas of West Riding.

Cumulative impacts:
With no water supply pipeline and the resultant no-development, there would be no future benefits such as an improved local and district economy.

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1:	Alternative A2:
Refer to Table 1 above	N/A

2.3. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the operational phase:

Alternative S1 (preferred alternative) – N/A

Direct impacts:

Indirect impacts:

Cumulative impacts:

Alternative S2 (if any) – N/A

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory) – N/A

Direct impacts:

Indirect impacts:

Cumulative impacts:

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1	Alternative S2
N/A	N/A

b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the operational phase (please list impacts associated with each alternative separately):

Table 2: Operation Phase Impact Assessment: Alternative 1 (Preferred Alternative)

Activity	Impact summary	Pre Mitigation Significance	Proposed Mitigation	Post Mitigation Significance
Alternative 1 (Preferred Alternative)				
Operation Phase				
Direct impacts:				
	Soil erosion as a result of scouring of the pipeline during testing, maintenance and operation	Low negative	<ol style="list-style-type: none"> 1. Areas susceptible to erosion must be monitored regularly for evidence of erosion – this includes: <ul style="list-style-type: none"> • Areas stripped of topsoil • Soil stockpiles • Steep slopes and embankments. 2. On any areas where the risk of erosion is evident, special measures may be necessary to stabilise the areas and prevent erosion. These may include, but not be restricted to: <ul style="list-style-type: none"> • Using mechanical cover or packing structures such as geo-fabric to stabilise steep slopes or hessian, gabions and mattress and retaining walls • Straw stabilising • Brush-cut packing • Mulch or chip cover • Hydro-seeding • Constructing anti-erosion berms. 3. Where erosion does occur on any completed work/working areas, the PM shall reinstate such areas and areas damaged by the erosion at his own cost and to the satisfaction of the ECO. 4. Traffic and movement over stabilised areas shall be restricted and controlled. Any damage to the stabilized areas shall be repaired and maintained. 	Very low negative
	Increased noise generation during maintenance of the pipeline	Low negative	<ol style="list-style-type: none"> 1. Limit the amount of construction vehicles on site. 2. Maintain construction vehicles and machinery in good working order to reduce the noise on site 3. Equipment should be fitted with noise reduction devices. 	Very low negative
Indirect Impacts:				
	Establishment of alien vegetation in areas disturbed during construction	Low negative	<ol style="list-style-type: none"> 1. Monitor the route for a one year period afterwards, at six month intervals, and destroy any alien species that establish within the construction footprint. Best practice will involve herbicide treatment or herbicide treatment following cutting of stumps or frilling of non-herbaceous alien plants, not cutting alone. 2. Where construction encroaches into open space areas, destroy all alien species within 30 metres of the footprint during or by the end of construction and allow follow up annually for two years. However, due to the difficulty and hazard (including to members of the public) in dealing with the very tall <i>Eucalyptus grandis</i> trees in open space area 5, cutting down or frilling and herbiciding of the trees can be omitted. 	Very Low Negative
Cumulative Impacts:				
None Identified.				

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Alternative A2 – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

No-go alternative (compulsory)

<i>Direct impacts:</i>
Without the proposed development proceeding, the positive and negative impacts relating to operation will not arise. The existing environmental quality and status will prevail, and the demand for potable water will not be addressed.
<i>Indirect impacts:</i>
The no-development option for this project would mean that no bulk potable water will be provided to the residential areas of West Riding.
<i>Cumulative impacts:</i>
None identified

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1	Alternative A2
Refer to Table 2 Above	N/A

A. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING OR CLOSURE PHASE

a. Site alternatives

List the potential impacts associated with site alternatives that are likely to occur during the decommissioning or closure phase:

Alternative S1 (preferred alternative)- N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

Alternative S2 – N/A

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

No-go alternative (compulsory)

<i>Direct impacts:</i>
<i>Indirect impacts:</i>
<i>Cumulative impacts:</i>

Indicate mitigation measures to manage the potential impacts listed above:

Alternative S1	Alternative S2
N/A	N/A

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b. Process, technology, layout or other alternatives

List the impacts associated with process, technology, layout or other alternatives that are likely to occur during the decommissioning or closure phase (please list impacts associated with each alternative separately):

Alternative A1 (preferred alternative)

Direct impacts:

It is unlikely that the pipeline will be decommissioned. However, should the pipeline be decommissioned, a Decommissioning Plan must be prepared and implemented, to mitigate and manage potential negative impacts on the biophysical and socio-economic environments. The Decommissioning Plan should be review and approved by the environmental authority.

Impacts will also be very similar to those associated with the construction phase impacts of Alternative A1.

Indirect impacts:

Similar to construction activities for S1. Appropriate mitigation measures must be implemented to minimize adverse impacts. eThekweni Municipality must appoint a suitably qualified ECO to oversee the decommissioning activities and to monitor compliance with the Decommissioning Plan.

Cumulative impacts:

Similar to Construction Phase Impacts.

Alternative A2 – N/A

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

N/A (if the project does not go ahead, no decommissioning or rehabilitation will be required).

Indirect impacts:

N/A

Cumulative impacts:

N/A

Indicate mitigation measures to manage the potential impacts listed above:

Alternative A1	Alternative A2
<p>Should the pipeline be decommissioned, a Decommissioning Plan must be prepared and implemented, to mitigate and manage potential negative impacts on the biophysical and socio-economic environments. The Decommissioning Plan should be review and approved by the environmental authority. eThekweni Municipality must appoint a suitably qualified ECO to oversee the decommissioning activities and to</p>	<p>N/A</p>

monitor compliance with Decommissioning Plan.	
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B. PROPOSED MONITORING AND AUDITING

For each phase of the project and for each alternative, please indicate how identified impacts and mitigation will be monitored and/or audited.

Alternative S1 (preferred site)	Alternative S2
N/A	N/A

Alternative A1 (preferred alternative)	Alternative A2
Refer to EMP	N/A

2. ENVIRONMENTAL IMPACT STATEMENT

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

Refer to Appendix G1 for the duration of impacts, likelihood of potential impacts actually occurring. The table below summarises the impacts and their significance.

Key:

Significance	
-49 to -66	Very high - negative
-37 to -48	High - negative
-25 to -36	Moderate - negative
-13 to -24	Low - negative
0 to -12	Very low - negative
0 to 12	Very Low - positive
12 to 24	Low - positive
25 to 36	Moderate - positive
37 to 48	High - positive
49 to 66	Very high - positive



GIBB IMPACT ASSESSMENT METHODOLOGY
IMPACT SUMMARY

Impact	Pre-mitigation:	Post-mitigation:
	Significance	Significance
CONSTRUCTION PHASE		
Direct Impacts		
Degradation of soils and soil erosion from excavation of trenches for the laying of the pipeline.	-24	-5
Contamination/Pollution of groundwater from leaks/spillages from hydrocarbons	-12	-10
Contamination/Pollution of surface water from leaks/spillages from hydrocarbons	-12	-10
Destruction and loss of vegetation and habitat as result of site clearance	-10	-3
Noise impact as a result of the use of construction machinery on site and within the residential areas	-10	-4
Loss of fauna as a result of site clearance.	-12	-5
Increased job opportunities for unskilled labour	24	36
Increased dust emissions as a result of construction machinery moving material to and from the site	-24	-6
Indirect impacts		
Siltation/Sedimentation of watercourses as a result of excavation of trenches	-12	-5
Impact of improper waste management on site	-12	-5
Potential impact on heritage resources and artefacts as a result of excavation of trenches	-14	-10
Cumulative Impacts		
Increase in alien vegetation	-18	-4
OPERATIONAL PHASE		

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Direct Impacts			
Soil erosion as a result of Scouring of the pipeline during testing, maintenance and operation	-24		-5
Increased noise generation during maintenance of the pipeline	-12		-4
Indirect impacts			
Establishment of alien vegetation in areas disturbed during construction	-24		-3
Cumulative Impacts			
None identified			

Kindly refer to Appendix G1 for the detailed assessment of the impacts. As detailed in the Impact Assessment the types of impact, duration, probability and significance of the impacts are varied for a project of this nature. This assessment illustrates that there are various potential negative and some positive impacts that may result from the proposed West Riding pipeline Project. From an environmental perspective and with the consideration of the potential impacts detailed above, GIBB is of the view that the proposed project will result in impacts which can suitably be mitigated. The Impact Summary Report in the table below indicates a summary of the type of impacts (or changes in the environment related to the proposed project) with the majority of these being unlikely to occur provided that all impacts are sufficiently mitigated. With mitigation all the impacts detailed above and summarised below will be of a very low significance to the receiving environment.

Alternative S1 (preferred site)

N/A. For the purpose of this project, site alternatives are not applicable as this is linear activity.

Alternative S2

N/A. For the purpose of this project, site alternatives are not applicable as this is linear activity.

Alternative A1 (preferred alternative)

No fatal flaws have been identified in this assessment of the proposed pipeline. However strict compliance with mitigation measures in the EMP will minimise negative impacts on the environment.

The EAP recommends authorization of the proposed project, on condition that mitigation measures stated within the report, the EMP and monitoring requirements of all specialist studies are adhered to.

Alternative A2

N/A. For the purposes of this report, only Alternative A1 (preferred alternative) has been assessed in detail, since the proposed project is for addressing a need for provision of water to a specific residential area, other alternatives are not considered.

No-go alternative (compulsory)

The “no go option” is not a viable option for eThekweni Water and Sanitation as it will result in not meeting the water shortage concerns in the West Riding Area. The no-go option is therefore not further assessed.

SECTION F. RECOMMENDATION OF EAP

Is the information contained in this report and the documentation attached hereto in the view of the EAPr sufficient to make a decision in respect of this report?

YES	NO
X	
N/A	

If “NO”, please contact the KZN Department of Economic Development, Tourism & Environmental Affairs regarding the further requirements for your report.

If “YES”, please attach the draft EMPr as Appendix F to this report and 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:

Refer to the EMP attached in Appendix F.

The following are recommended conditions as identified by GIBB (Pty) Ltd:

- The recommendations by the wetland and vegetation specialists regarding the possible mitigating measures to reduce the impact on wetlands and sensitive vegetation should be addressed and incorporated in the design and layout of the proposed West Riding Pipeline Project.**
- All conditions and recommendations contained within the EMP must be**

adhered to.

- **The ECO must be contracted by the developer (eThekweni Municipality) as an independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of EA's, and the EMP for the project.**
- **The developer is further responsible for providing and giving a mandate to enable the ECO to perform responsibilities. The developer must ensure that the ECO is integrated as part of the project team.**
- **A Water Use Licence will be required for impeding and diverting the watercourses (wetlands) during the construction. The Water Use Licence Application (WULA) will need to be submitted to DWA in the KZN Region for approval prior to the commencement of construction.**

SECTION G: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix D1: Wetland and Riparian Habitat Assessment

Appendix D2: Vegetation Assessment

Appendix D3: Heritage Assessment

Appendix E: Comments and Responses Report


Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other information

Appendix G1: Impact Assessment Methodology

Basic Assessment Report

CLIENT : eThekweni Municipality
PROJECT NAME : West Riding Reservoir EIA **PROJECT No.** : J34049
TITLE OF DOCUMENT: Draft Basic Assessment Report for the Proposed West Riding Reservoir Pipeline Project
ELECTRONIC LOCATION : P:\3230 - Environmental\J34049 - West Riding Reservoir EIA\Reports\BAR\DBAR\Report\J34049_West Riding Reservoir EIA_v8_2014 11 26.docx

	Approved By	Reviewed By	Prepared By
DRAFT1	NAME Elisabeth Nortje	NAME Katherine de Jong	NAME Charl Kruger
DATE 26 November 2014	SIGNATURE 	SIGNATURE 	SIGNATURE 

	Prepared by	Prepared By	Prepared By
	NAME	NAME	NAME
DATE	SIGNATURE	SIGNATURE	SIGNATURE

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GIBB (Pty) Ltd	Website : www.gibb.co.za
Postal Address: PO Box 1365, Westville, 3630	Physical Address : 54 Norfolk Terrace, Westville, 3630
Contact Person : Katherine de Jong	Email Address : kdejong@gibb.co.za
Telephone No. : 031 267 8560	Fax No. : 031 266 3310