KONGIWE
ENVIRONMENTAL SCIENCE & ENGINEERING

Environmental Impact Assessment Process:

Basic Assessment Report for the Tanganani Extension 7 Bulk Water Supply Pipeline in Diepsloot, Gauteng Province

28 June 2017

GDARD Ref No: GAUT 002/17-18/E2009

Report Information

Project:	The Tanganani Extension 7 Bulk Water Supply Pipeline in Diepsloot, Gauteng Province
Report Title:	Draft Basic Assessment Report
GDARD Reference No:	GAUT 002/17-18/E2009
Client:	The Gauteng Department of Human Settlements
Project No:	BLKD#002
Compilation Date:	28 June 2017
Status of Report:	Draft Basic Assessment for Public and Authority Review
Actions:	30-day Review: 28 June 2017 to 27 July 2017
Report Compiler:	Ashleigh Blackwell
Report: Reviewer:	Gerlinde Wilreker
Report Approved:	Bradly Thornton

Please consider the Environment before you print this document.

When used as a reference this report should be cited as: Kongiwe Environmental (2017) Draft Basic Assessment Report: The Tanganani Extension 7 Bulk Water Supply Pipeline near Diepsloot in the Gauteng Province.

Kongiwe Environmental (Pty) Ltd.
Reg No 2016 / 135562 / 07
Directors: BJ Thornton. PE Sodi.
Tel: +27 (10) 140 6508 | Email: info@kongiwe.co.za
223 Cube Workspace, 1 Wedgewood Link, Bryanston, Sandton, 2191, South Africa.
PostNet Suite no 163, Private Bag X21, Bryanston, 2021, South Africa.
www.kongiwe.co.za

GAUTENG PROVINCE
AGRICULTURE AND RURAL DEVELOPMENT
REPUBLIC OF SOUTH AFRICA

Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Version 1)

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. 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.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorisation being refused.**
10. 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 application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

DEPARTMENTAL DETAILS

Gauteng Department of Agriculture and Rural Development
Attention: Administrative Unit of the of the Environmental Affairs Branch
P.O. Box 8769
Johannesburg
2000

Administrative Unit of the of the Environmental Affairs Branch
Ground floor Diamond Building
11 Diagonal Street, Johannesburg

Administrative Unit telephone number: (011) 240 3377
Department central telephone number: (011) 240 2500

(For official use only)

NEAS Reference Number:						
File Reference Number:						
Application Number:						
Date Received:						

If this BAR has not been submitted within 90 days of receipt of the application by the competent authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.

Not Applicable

Is a closure plan applicable for this application and has it been included in this report? NO

if not, state reasons for not including the closure plan.

The application for the proposed bulk water supply pipeline is a new activity. The applicant does not expect to decommission the pipeline in the near future. As soon as it has been decided that the pipeline will be decommissioned, an application for closure and decommissioning must be submitted to the competent authority.

Has a draft report for this application been submitted to a competent authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity? YES

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person? YES

A copy of the Stakeholder database can be found in Appendix E

If no, state reasons for not attaching the list.

Not Applicable

Have State Departments including the competent authority commented? NO

If no, why?

All Organs of State having a jurisdiction on any aspect of the proposed project were notified on the proposed project. These Organs of State will be kept on the Stakeholder database throughout the Basic Assessment Process. Proof of notification can be found in Appendix E. Comments are expected to be received after the 30 day review period.

EXECUTIVE SUMMARY AND PROJECT OVERVIEW

The Gauteng Department of Human Settlements (GDHS) intends to construct a 1km long bulk water pipeline and reservoir water tower to supply water to the approved Tanganani Extension 7 Residential Development, east of Diepsloot in the City of Johannesburg.

As part of the Reconstruction and Development Programme (RDP), all housing within the Tanganani Extension 7 Residential Development must have adequate sanitary facilities, storm-water drainage and convenient access to clean water. It is understood that water will be pumped from the approved service reservoir to a proposed new water tower, after which water will gravitate downwards into the bulk supply water pipeline. This pressurised municipal water will feed into the water supply network of the Tanganani Extension 7 Residential Development.

Table 1 below outlines the details relating to the location of the proposed water pipeline and water reservoir to be constructed, in accordance with the requirements of Appendix 1 of GN R 982 of the 2014 EIA Regulations (as amended, April 2017).

Table 1: Project details

SITE SPECIFIC DETAILS	DESCRIPTION/ DIMENSIONS	
Location of the site (water pipeline)	Portion 984 of the Farm Knopjeslaagte 385 JR, Portion 202 of the Farm Diepsloot 388 JR, Remaining Extent of Portion 31 of the Farm Diepsloot 388 JR, Portion 191 of the Farm Diepsloot 388 JR, Portion 19 of the Farm Diepsloot 388 JR, Remaining Extent of Portion 2 of the Farm Diepsloot 388 JR Portion 119 of the Farm Diepsloot 388 JR	
Municipal Jurisdiction	City of Johannesburg Metropolitan Municipality City of Tshwane Metropolitan Municipality	
Ward number	City of Johannesburg: Wards number 94, 113 and City of Tshwane: Ward number 106	
SG Code	T0JR00000000038500984 T0JR00000000038800202 T0JR00000000038800031 T0JR00000000038800191 T0JR00000000038800019 T0JR00000000038800002 T0JR00000000038800119	
Nearest Town	Diepsloot: Approximately 3.5km east of the water tower and pipeline.	
Site Co-ordinates (point of the water pipeline)	Longitude WGS 84 DMS	Latitude WGS 84 DMS
	28° 2' 42.405" E	25° 55' 50.250" S
	28° 2' 34.910" E	25° 55' 52.295" S

SITE SPECIFIC DETAILS	DESCRIPTION/ DIMENSIONS	
	28° 2' 20.705" E	25° 55' 50.564" S
	28° 2' 21.049" E	25° 55' 44.809" S
	28° 2' 13.093" E	25° 55' 50.503" S
	28° 1' 59.657" E	25° 55' 30.930" S
	28° 1' 42.741" E	25° 55' 1.776" S
Site access	The pipeline connects at Portion 984 of the Farm Knopjeslaagte 385-JR, situated along the R563 (Summit Road). The pipeline is aligned adjacent to the existing road and will follow the road in a northerly direction for 1km to terminates at the approved Tanganani Extension 7 mixed-use residential development.	

The proposed water pipeline has been assessed based on a corridor of disturbance, with a varying width of 30m – 100m to allow for unforeseen construction deviations, should these be required.

The Proposed Project has been designed such that it has the least negative impact on the environment. Table 2 below outlines the necessary technical details relating to the project:

Table 2: Project details

PROJECT COMPONENT	TECHNICAL DETAIL
BULK WATER SUPPLY PIPELINE	
Development Footprint	30 000m^2
Length of the pipe (m)	1 000 m
Diameter of the pipe (m)	0.355 m
Peak Throughput (L/s)	Designed for 67 litres per second, with a maximum of 90 litres per second.
Class of High density polyethelene (HDPE) piping	PN16
Excavated depth for the pipeline	~ 1 to 1.5m
Excavated width for the pipeline	~ 1.2m

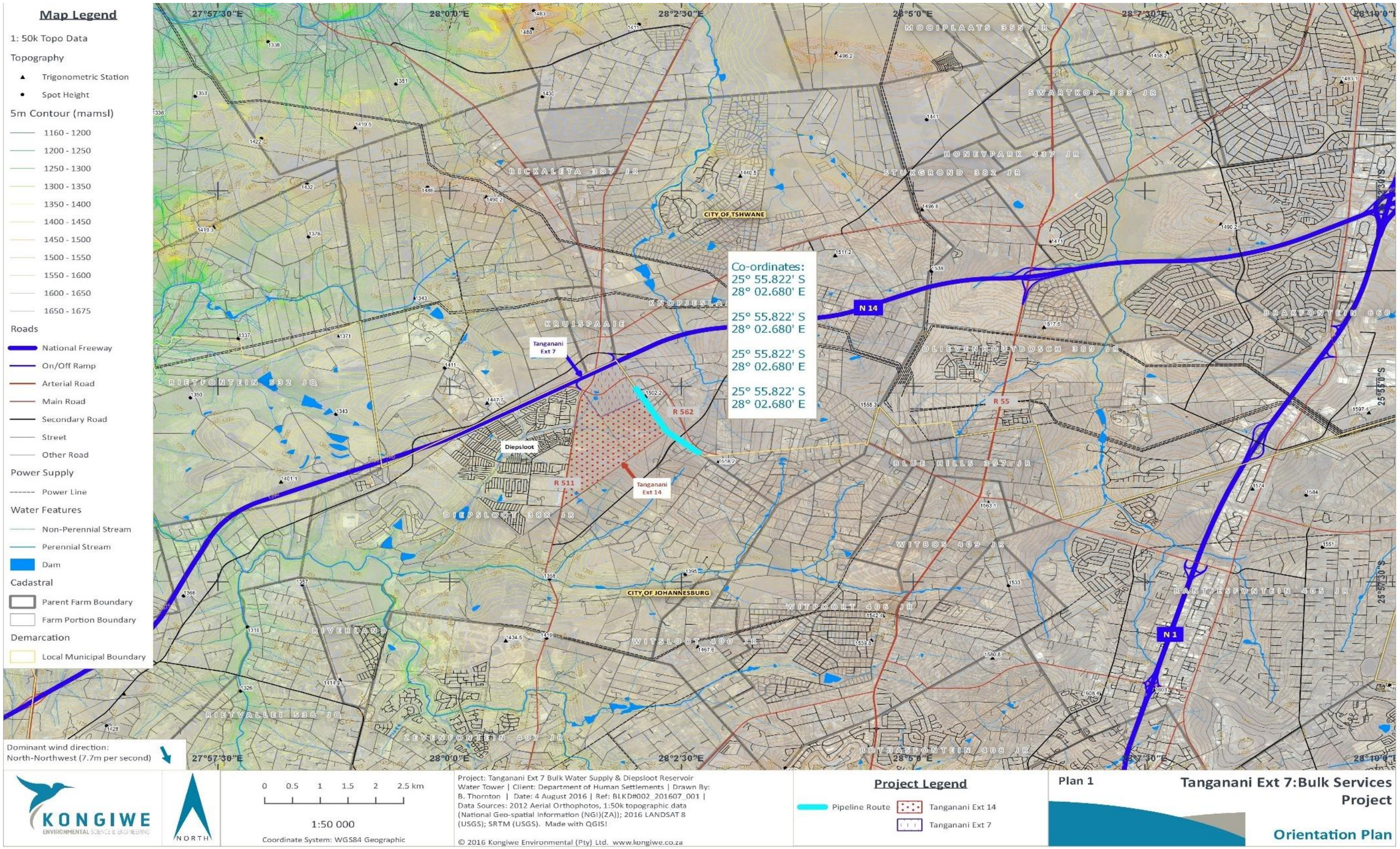

Figure 1: Locality Map showing the location and co-ordinate points of the 1km long bulk water supply pipeline.

1.1. Legal Requirements for a Basic Assessment Process

In terms of the Environmental Impact Assessment (EIA) Regulations[1], 2014, as amended in April 2017[2], published in terms of Section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), the Gauteng Department of Human Settlements (GDHS) requires environmental authorisation for the construction, operation and maintenance of the **Tanganani Extension 7 bulk supply water pipeline** (hereon referred to as the "Proposed Project"). In accordance with the EIA Regulations of 2014, a Basic Assessment process is triggered by the Proposed Project**.**

Section 24(1) of the NEMA states that any potential impacts of the Proposed Project on the environment must be considered, investigated, assessed and reported on to the competent authority that has been charged by NEMA with the responsibility of granting environmental authorisations. As the application is related to infrastructure improvement of bulk and reticulation water services at a local scale, the Gauteng Department of Agriculture and Rural Development (GDARD) will act as the Competent Authority.

This project has been registered with the GDARD through submission of an online application for Environmental Authorisation (**Reference No: GAUT 002/17-18/E2009**).

Table 3 below includes details of the activity description, the site, area and property description, the public participation process, the impact assessment, and the recommendations of the EAP.

Table 3: Legal Requirements of the EIA Regulations

NEMA REGULATIONS 326, APPENDIX 1: SCOPE OF ASSESSMENT AND CONTENT OF BASIC ASSESSMENT REPORTS	CROSS-REFERENCE IN THIS BASIC ASSESSMENT REPORT
A Basic Assessment report must contain the information that is necessary for the competent authority to consider and to a decision on the application and must include -	
(a) details of— (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	Executive Summary 1.2 page iv
(b) the location of the activity, including: (i) the 21-digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Executive Summary Table 1 page iii
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; or, if it is— (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or	Figure 1 page v

[1] Published in GN R982 of 4 December 2014

[2] GN R326 0f 7 April 2017

NEMA REGULATIONS 326, APPENDIX 1: SCOPE OF ASSESSMENT AND CONTENT OF BASIC ASSESSMENT REPORTS	CROSS-REFERENCE IN THIS BASIC ASSESSMENT REPORT
(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	
(d) a description of the scope of the proposed activity, including— (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure;	Section A.1
(e) a description of the policy and legislative context within which the development is proposed including— (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to **this** activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;	Section A.2 Page 1
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Executive Summary 1.3 page vi Section E.9 page 40
(g) a motivation for the preferred site, activity and technology alternative;	Section A.3 page 4
(h) a full description of the process followed to reach the proposed preferred alternative within the site, including- (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts— (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; (vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives; (vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	 Section A.3 page 4 Section C page 21 and Appendix E Section E.1 page 28 Section B page 10 Section E page 28

NEMA REGULATIONS 326, APPENDIX 1: SCOPE OF ASSESSMENT AND CONTENT OF BASIC ASSESSMENT REPORTS		CROSS-REFERENCE IN THIS BASIC ASSESSMENT REPORT
(viii)	the possible mitigation measures that could be applied and level of residual risk;	
(ix)	the outcome of the site selection matrix;	
(x)	if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	
(xi)	a concluding statement indicating the preferred alternatives, including preferred location of the activity;	
(i)	a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including—	Section E page 28
(i)	a description of all environmental issues and risks that were identified during the environmental impact assessment process; and	
(ii)	an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	
(j)	an assessment of each identified potentially significant impact and risk, including—	Section E page 28
(i)	cumulative impacts;	
(ii)	the nature, significance and consequences of the impact and risk;	
(iii)	the extent and duration of the impact and risk;	
(iv)	the probability of the impact and risk occurring;	
(v)	the degree to which the impact and risk can be reversed;	
(vi)	the degree to which the impact and risk may cause irreplaceable loss of resources; and	
(vii)	the degree to which the impact and risk can be avoided, managed or mitigated;	
(k)	where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report**;**	Executive Summary 1.6 page Vii
(l)	an environmental impact statement which contains—	Section E.5 page 37
(i)	a summary of the key findings of the environmental impact assessment;	
(ii)	a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and	
(iii)	a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	
(m)	based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMP;	Section 11 page 41

NEMA REGULATIONS 326, APPENDIX 1: SCOPE OF ASSESSMENT AND CONTENT OF BASIC ASSESSMENT REPORTS		CROSS-REFERENCE IN THIS BASIC ASSESSMENT REPORT
(n)	any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Section 8 page 39
(o)	a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	n/a
(p)	a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section E.8 page 39
(q)	where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	Section E.10 page 41
(r)	an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Appendix G
(s)	where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	n/a
(t)	any specific information that may be required by the competent authority; and	n/a
(u)	any other matters required in terms of section 24(4)(a) and (b) of the Act.	n/a

This report has been compiled in accordance with the requirements of the EIA Regulations, 2014 (as amended in 2017), and includes all details as required in Appendix 1 of GN R. 982. Environmental Authorisation is required in terms of the Environmental Impact Assessment Regulations, 2014 (EIA 2014 Regulations) and the associated Listing Notices 1[3] and 3[4], framed in terms of the NEMA for the development of the bulk water pipeline. The nature and extent of the bulk water supply pipeline, and the potential environmental impacts associated with the construction and operation phases trigger the following listed activities:

[3] GN R983 of 4 December 2014, as amended by GN R327 of 7 April 2017

[4] GN R985 dated 4 December 2014, as amended by GN R324 of 7 April 2017

Table 4: Relevant listed activities triggered by the proposed project in terms of the amended EIA 2014 Regulations.

LISTING NOTICE	ACTIVITY	ACTIVITY DESCRIPTION	RELEVANT PROJECT COMPONENT
Listing Notice 1	Activity 12	*The development of dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or infrastructure or structures with a physical footprint of 100 square metres or more; where the development occurs within a watercourse; in front of a development setback; or if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse*	Tanganani Extension 7 Bulk Supply Water Pipeline
Notice 1	Activity 19	*The infilling or depositing of more than 10 cubic meters into, or the dredging, excavation, removal or moving of soil, san, shells, shell grit, pebbles or rock of more than 10 cubic meters from a watercourse*	The excavation and backfilling of the pipeline.
Notice 3	Activity 14	*The development in Gauteng within sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or bioregional plans of –* *(ii) infrastructure or structures with a physical footprint of 10 square meters or more* *Where such development occurs –* *(a) Within a watercourse* *(c) if no development setback exists, within 32 meters of a watercourse, measures from the edge of the watercourse*	The construction of the pipeline with a segment crossing a wetland.

1.2. Details of the Environmental Assessment Practitioner and the Kongiwe Project Team

Kongiwe, established in 2016, is a contemporary problem-solving consultancy specialising in solving real-world environmental challenges. We pride ourselves in using the latest technology available to

realise pragmatic solutions for our clients. The company was created with the essential intent: *'To solve environmental challenges for a world driven towards a sustainable future.'*

Based in Johannesburg, South Africa, our team of professional Environmental Scientists are highly trained in various environmental disciplines and have significant, hands-on experience in an array of projects across various industries. The company has extensive environmental and project management experience in multiple sectors, with significant experience in South Africa, as well as internationally.

The following members of Kongiwe Environmental core and specialist team are responsible for the compilation of this Basic Assessment report.

1.2.1 Details of the Kongiwe Environmental core team

TEAM MEMBER	ROLE OF EACH TEAM MEMBER	EXPERIENCE AND COMPETENCY
Bradly Thornton	Director; High-level project management	Bradly Thornton has extensive GIS, Remote Sensing and Environmental Consulting experience spanning over a decade. He has lead multiple, multi-skilled teams over large multidisciplinary projects for many premier companies. He is passionate about client relations, staff development and making a positive difference to the environment and society. He has a BSc (Hons) in Geography & Environmental Management from the previous Rand Afrikaans University (RAU), now the University of Johannesburg (UJ), and has also completed a Management Development Program (MDP) at the University of Stellenbosch Executive Development.
Gerlinde Wilreker	Environmental Project Manager	Gerlinde is an Environmental Consultant with over ten years' work experience, predominantly in the mining industry. Her practical experience in the mining and construction industry has given her a depth of knowledge regarding project processes from pre-feasibility phases through to implementation. She is adept at working in different contexts, and problem-solving with her team to meet client needs. She has particular expertise in relation to Environmental Authorisation Processes in terms of the South African legal regime.
Ashleigh Blackwell	Environmental Assessment Practitioner	Ashleigh is the Principal EAP for this project, and has one and a half years' experience working in the Environmental Sector, predominantly in the Renewable Energy Sector. Ashleigh is schooled in Ecology and Soil Science, and is responsible for

		undertaking Environmental Impact reporting, Soils reporting and Public Participation. Her passion for environmental protection and sustainability is reflected the quality of work she produces.
Nokuthula Ndala	GIS Consultant	Nokuthula has worked in a consulting environment since having graduated with a Bsc degree in Geoinformatics from University of Pretoria in 2013. Her main focus is providing specialist GIS consulting services that have been primarily for the mining and exploration industries, specifically for environmental management, engineering, locational planning and management objectives. Key experience includes the GIS Database design, Implementation and management. Project proposal writing, management and execution as well as Visual Assessments.
Michael Hennessy	Environmental Lawyer	Michael is a Mining and Environmental Law consultant with more than 35 years' experience in the Resources industry. He holds the degrees of B.A., LL.B. and B.Com. (Hons.). In addition to his practice in the field of Mining Law, he established his own consultancy for general mineral project development. For the past five years, his particular focus has been on Environmental Law.

1.2.2 Details of the Specialist Core Team

Where specialist expertise is required, specialist consultants with relevant project experience, professional criteria (CV and Professional registration), expertise report writing, and availability are selected. **Kongiwe** maintains overall responsibility for the project, which included managing specialists. A developed network with leading experts in other environmental-related disciplines strengthens this consulting team, depending on the client's needs and the nature of the service required, enabling the provision of a quality service. The quality of the studies and results provided by the specialist's consultants is considered key, as this can actively assist in expediting the authority decision-making process (as the authority decision can only be as good as the information provided to it).

The following specialist have been, or will be, sub-contracted to complete the necessary specialist works required:

TEAM MEMBER	ROLE OF EACH TEAM MEMBER	EXPERIENCE AND COMPETENCY
Dieter Kassier	Wetland Specialist	Dieter is a Wetland Ecologist with over 10 years' experience within his field. Dieter obtained his BSc Honours degree in Environmental Science from the North-West University, and has since then undertaken a number of training courses, including:

TEAM MEMBER	ROLE OF EACH TEAM MEMBER	EXPERIENCE AND COMPETENCY
		Soil classification and wetland delineation, Rehabilitation of Mine Impacted Land and a Wetland Delineation and Rehabilitation Course. He is a SACNASP registered professional, as well as a registered member of the South African Wetland Society.
Jenna Lavin	Heritage Specialist	Jenna holds a Masters' Degree in Archaeology from the University of Cape Town, and has over 10 years' experience in the Environmental Sector. Jenna is a registered member of the Heritage Western Cape Archaeology, Palaeontology and Meteorites Committee, Association for Southern African Professional Archaeologists (ASAPA), the Association of Professional Heritage Practitioners (APHP), the Paleontological Society of South Africa (PSSA) and ICOMOS South Africa, for which she was Vice-President of the Board. Jenna is also a member of the International Committee for Archaeological Heritage Management (ICAHM).

1.3. Need and Desirability for the Proposed Project

1.3.1 Project need

In terms of the project timing, there is a need to align the installation of the proposed pipeline within the construction phase of the approved Tanganani Extension 7 Residential Development. The current municipal water system cannot meet the capacity demands for the new residential development. To comply with RDP standards, sustainable water supply must be available within 200m of each household and since water is a basic human need, this initiative is of high priority.

1.3.2 Project Desirability

By tying into the existing Diepsloot Reservoir, the supply to the Tanganani Extension 7 Residential Development will be greatly increased and the supply will be reliable. It is expected that the pipeline to be installed on-site will consist of High Density Polyethelene (HDPE) piping.

The proposed development will provide employment opportunities to the local community both during the construction and operational maintenance phases. It will further contribute to the upliftment of the community through the provision of infrastructure and services in the form of bulk water services in the area.

1.4. Public Participation Process

This draft Basic Assessment Report has been compiled by Kongiwe Environmental. The purpose of this report is to assess the potential environmental impacts associated with the construction, operation

and maintenance of the Tanganani Extension 7 bulk water supply pipeline. This process was undertaken in support of an application for Environmental Authorisation to the Gauteng Department of Agriculture and Rural Development.

1.4.1 Public Comment

The public participation process undertaken for the Proposed Project has been aligned to the requirements of the EIA Regulations 2014, as amended in April 2017.

The 30-day period of review for this Draft Basic Assessment report is **28 June 2017 to 27 July 2017**. The report will be available for public review at the following locations:

Table 5: Location of documents for public review

LOCATION	CONTACT PERSON	CONTACT DETAILS
Diepsloot Library and Hall - 383 Ingonyama St, Diepsloot West, Diepsloot, 2189	Oupa Maboya	011 026 2964 011 464 7023
CD copy	Ashleigh Blackwell	010 140 6508
Website copy	http://www.kongiwe.co.za/publications-view/public-documents	

Any person affected by or who may be interested in the proposed project is asked to register as an Interested and Affected Party (I&AP) by sending an email to stakeholders@kongiwe.co.za, or by calling Ashleigh Blackwell on +27 (10) 140 6508.

Please ensure that the necessary information is submitted within 30 days of this notice, **before the 27th of July 2017**.

1.5. Assumptions and Limitations

The following assumptions and limitations are applicable to the studies undertaken within this Basic Assessment Process:

- Specialist studies assume that any potential impacts on the environment associated with the Proposed Project, will be avoided or mitigated accordingly within the basic assessment report.
- It is assumed that the pipeline route, corridor and connection points represent the most technically suitable sites for the establishment of the bulk water supply pipeline.
- This basic assessment report and supporting documentation was compiled under the impression that all information provided by the Applicant (GDHS) to Kongiwe Environmental was correct, accurate and valid at the time it was provided.

1.6. Impact Assessment Findings

Two specialist studies were conducted as part of the BA Process. These studies included a Wetland Impact Assessment and Heritage Screener. The findings of the Wetland Impact Assessment study have been summarised below.

In terms of the heritage impacts, the potential impacts have only been identified for the construction phase of the project. No potential heritage impacts have been identified for the operational phase of the project, and the project will not be decommissioned.

Table 7: Wetland impact assessment findings.

POTENTIAL IMPACTS	SIGNIFICANCE RATING Without Mitigation	SIGNIFICANCE RATING With Mitigation
CONSTRUCTION		
Disturbance of wetland habitat and fauna.	**Moderate (45)**	**Low (27)**
Increased erosion within wetlands due to disturbance of wetland sediments.	**Low (27)**	**Low (14)**
Increased sediment movement into the wetlands due to erosion on approach and departure slopes.	**Low (27)**	**Low (14)**
Altered wetland hydrology due to interception/impoundment/diversion of flows.	**Moderate (30)**	**Low (14)**
Increase in alien vegetation.	**Moderate (40)**	**Low (14)**
Deterioration in water quality due to spills and leaks of hazardous materials.	**Low (24)**	**Low (14)**
The construction of the proposed pipeline could directly impact on marked graves	**High (80)**	**Low (27)**
OPERATION		
Increased flows due to leaks or pipe failure.	**Low (24)**	**Low (20)**
Erosion due to subsidence along pipeline trench.	**Moderate (33)**	**Low (14)**

1.7. Environmental Assessment Practitioner Recommendations

In terms of impacts to the existing wetland, the proposed construction and operation of the pipeline will result in numerous potential impacts. However, **all the expected impacts can be reduced to Low environmental significance after mitigation**. The reason for this being that wetland habitat in question is highly disturbed, the pipeline follows an existing disturbance in the form of a two-track informal road and the various mitigation measures proposed are seen as more than sufficient to reduce the potential impacts.

In accordance with the findings of the Wetland Impact Assessment, the following conditions of authorisation are proposed:

- All construction activity to take place within the dry season (June to September);
- All construction activity within the wetland to be completed within a 2week period. The excavated trench should not remain open for more than 7 days.
- All invasive alien vegetation must be removed from the construction servitude and immediate adjacent areas.
- All building rubble and refuse to be removed from the construction servitude and immediate adjacent areas and disposed of in a suitable facility.
- A monitoring plan be implemented that includes the following:
  - Inspection to be undertaken of affected wetland area at completion of construction activities within the wetland, and after 6 months;
  - Inspections to be undertaken by wetland specialist or suitably qualified ecologist;
  - Inspection to focus on erosion, revegetation and alien vegetation; and
- All recommendations from the EMPr report must be implemented.

Although the proposed development will have no impact on palaeontological resources, and archaeological impacts are unlikely, the presence of the graves renders the proposed alignment unsuitable for placement of the pipeline. Rather, this alignment should be altered to avoid the graves, and give them sufficient berth that they are not negatively impacted by excavation work, or by increased traffic resulting from construction. It is recommended that the graves be fenced off, with the fence situated at least 5m from the graves; there should be a gate in the fence to allow access to the graves by family members. The pipeline alignment should be moved at least 15m from the fenced off graves, providing a buffer of 20m total around the graves. Considering the above, should the proposed alignment be adjusted, and the new alignment avoid the graves entirely, no further heritage studies will be required.

It is the recommendation of the environmental consultant that the installation of the pipeline be authorised, constructed and operated due to the positive impacts associated with its development, as well as the negligible negative impacts arising for the implementation of the project. The overall environmental impacts identified as part of this Basic Assessment Process can easily be mitigated provided that the appointed contractors implement the proposed EMPr and mitigation measures.

The construction and operation of the bulk water supply pipeline should be implemented according to the specifications of the EMPr to ensure mitigation and management of potential impacts associated with construction and operation activities. The activities should be monitored against the approved EMPr, the Environmental Authorisation (once issued) and all other relevant environmental legislation

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Abbreviations

AIA	Archaeological Impact Assessment
BA	Basic Assessment
BAR	Basic Assessment Report
BEE	Black Economic Empowerment
BP	Best Practice
CA	Competent Authority
CARA	Conservation of Agricultural Resources Act
CBA	Conservation Biodiversity Area
C-Plan	Conservation Plan
CMA	Conservation Management Area
CoJ	City of Johannesburg
CRR	Comments and Responses Report
CV	Curriculum Vitae
DAFF	Department of Agriculture, Fisheries and Forestry
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
EMPr	Environmental Management Programme report
EMS	Environmental Management System
EO	Environmental Officer
ESA	Ecological Sensitive Area
GA	General Authorisation
GDARD	Gauteng Department of Agriculture and Rural Development
GDHS	Gauteng Department of Human Settlements
GIS	Geographic Information System
GNR	Government Notice Number
HDPE	A flexible pipe material, with a temperature range up to 60ºC and good impact resistance according to SABS
I&AP	Interested & Affected Parties
IDP	Integrated Development Plan
NEFPA	National Freshwater Ecosystem Priority Areas
NEMA	National Environmental Management Act (Act No 107 of 1998)
NEM:BA	National Environmental Management Biodiversity Act (Act No 10 of 2004)

NEM:PAA	National Environmental Management Protected Areas Act (Act No 57 of 2003)
NHRA	National Resource Heritage Act
NWA	National Water Act
PES	Present Ecological State
PHRAG	Provincial Heritage Resource Agency Gauteng
PPP	Public Participation Process
SACNASP	South African Council for National and Scientific Professionals
SDF	Spatial Development Framework
WULA	Water-Use Licence Application

SECTION A: ACTIVITY INFORMATION

1 Proposal or Development Description

Project title (must be the same name as per application form):

THE TANGANANI EXTENSION 7 BULK WATER SUPPLY PIPELINE IN DIEPSLOOT, GAUTENG PROVINCE

Select the appropriate box

The application is for an upgrade of an existing development		The application is for a new development	X	Other, specify	

Does the activity also require any authorisation other than NEMA EIA authorisation?

YES	

If yes, describe the legislation and the Competent Authority administering such legislation

1. Department of Water and Sanitation (DWS) approval in terms of a General Authorisation for water uses under Section 21 (c) and Section 21 (i), issued in terms of Section 39 the National Water Act (Act 36 of 1998).
2. SAHRA approval for impacts associated with Section 38 (8) and Section 38 (1) of the National Heritage Resources (Act 25 of 1999).

If yes, have you applied for the authorisation(s)?
If yes, have you received approval(s)? (attach in appropriate appendix)

YES	
	NO

Please Note: Kongiwe has been given approval from the DWS to apply for a General Authorisation for water uses under Section 21 (c) and Section 21 (i). Please see Appendix E for stakeholders Comments Received.

2 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:

Table 6: Applicable Legislation.

TITLE OF LEGISLATION, POLICY OR GUIDELINE	ADMINISTERING AUTHORITY	PROMULGATION DATE
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	November 1998
National Water Act, 1998 (Act No. 36 of 1998) as amended	National	Uncertain
National Environmental Management: Waste Act (Act no. 59 of 2008) as amended	National & Provincial	March 2009
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	National & Provincial	April 1999
National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	National & Provincial	June 2004
Environmental Conservation Act, 1989 (Act No. 73 of 1989)	National & Provincial	June 1989
Environmental Impact Assessment Regulations, 2014 (as amended)	National	December 2014
DEA Guidelines on Public Participation	National (DEA)	October 2012
National Environmental Management: Waste Act, as amended.	National & Provincial	November 2013
Occupational Health and Safety Act (No 85 of 1993)	National	June 1993
City of Johannesburg Metropolitan Municipality IDP and SDF 2016-2021	Provincial	March 2016
City of Johannesburg Metropolitan Municipality By-Laws ❖ Water Services By-Laws	Provincial	 2008
City of Tshwane Metropolitan Municipality IDP and SDF 2016-2021	Provincial	March 2016
City of Tshwane Metropolitan Municipality By-Laws ❖ Public Participation By-Laws ❖ Water and Sewer By-Laws ❖ Water Supply By-Laws	Provincial	 November 2015 July 2015 November 2003
Gauteng Provincial Environmental Management Framework	Provincial	May 2015
Gauteng Environmental Implementation Plan 2015-2020	Provincial	2015
Gauteng Conservation Plan Version 3.3 (C-Plan 3.3)	Provincial	October 2011
Gauteng Urban Edge 2008 / 2009	Provincial	2009

Table 7: Description of compliance with the relevant legislation, policy or guideline:

LEGISLATION, POLICY OF GUIDELINE	DESCRIPTION OF COMPLIANCE
APPLICABLE LEGISLATION	
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	The listed activities triggered by the proposed bulk water supply pipeline have been identified and assessed in the EIA process being undertaken (i.e. Basic Assessment). This Basic Assessment Report will be submitted to the competent and commenting authority in support of the application for authorisation. While no permitting or licensing requirements arise directly, the holistic consideration of the potential impacts of the proposed project has found application in the EIA process. The implementation of mitigation measures are included as part of the EMPr (Appendix F) and will continue to apply throughout the life cycle of the Project.
National Water Act, 1998 (Act No. 36 of 1998) as amended	The objectives of the National Water Act, 1998 (Act No. 36 of 1998) have been addressed in the Water Use General Authorisation. Mitigation and management measures have been compiled in this Basic Assessment Report for the protection of natural water resources.
National Environmental Management: Waste Act (Act no. 59 of 2008),) as amended	As no waste disposal site will be associated with the proposed pipeline, no permit is required in this regard. Waste handling, storage and disposal during construction and operation is required to be undertaken in accordance with the requirements of the Act, as detailed in the EMPr (refer to Appendix F).
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	The Act aims to promote the good management of the national heritage resources. According to the Act the South African Heritage Resources Agency (SAHRA) must be notified during the early planning phases of a project for any development that meet certain criteria. Since five graves have been identified on site, the Agency has been notified as required by Cedar Tower Heritage Consultants. Any artefacts uncovered during the project life cycle will be reported to SAHRA as provided for in the EMPr

LEGISLATION, POLICY OF GUIDELINE	DESCRIPTION OF COMPLIANCE
National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	The Act provides for the management and conservation of South Africa's biodiversity within the framework of the NEMA. Areas of high biodiversity need to be protected. Should any protected plants be found on site, these will be managed in consultation with GDARD
Conservation of Agricultural Resources Act (CARA) (Act No 43 of 1983)	An wetland impact assessment study was undertaken (refer to Appendix D1) which identified fauna and flora and CARA was taken into account. The relevant mitigations measures were identified and are included in the EMPr (Appendix F).
Environmental Impact Assessment Regulations, 2014 (as amended)	The proposed development constitutes activities listed under GN R. 983 and GN R. 985 (as amended); therefore, a Basic Assessment Report process is being followed to obtain authorisation from the GDARD.
DEA Guidelines on Public Participation	This guideline was taken cognisance of during the Stakeholder Engagement process conducted for the proposed pipeline.
National Environmental Management: Waste Act, as amended.	No waste management license would be required for the construction or operational phases of the proposed activity. Only a limited amount of solid construction waste will be created on the site during the construction phase. Waste that is created will be hauled away and dumped at the nearest registered landfill site. Waste handling, storage and disposal during construction and operation is required to be undertaken in accordance with the requirements of the Act, as detailed in the EMPr (refer to Appendix F).
Occupational Health and Safety Act (No 85 of 1993)	The Act provides for the health and safety of persons at work and for the health and safety of persons in connection with the use of machinery; the protection of persons other than persons at work; and against hazards to health and safety arising out of or in connection with the activities of persons at work. The EMPr provides for measures to ensure that objectives of the Act are met on this site.
APPLICABLE POLICIES AND GUIDELINES	
City of Johannesburg Metropolitan Municipality IDP and SDF 2016-2021	The SDF is the legislated component of the municipality's Integrated Development Plan (IDP) that prescribes development strategies and policy guidelines to restructure and reengineer the urban and rural form. The SDF is the municipality's long-term vision of what it wishes to achieve spatially, and within the IDP programmes and projects. The SDF should not be interpreted as a blueprint or master plan aimed at controlling physical development, but rather the framework giving structure to an area

LEGISLATION, POLICY OF GUIDELINE	DESCRIPTION OF COMPLIANCE
	while allowing it to grow and adapt to changing circumstances. The proposed project has considered and is guided by the Regions' SDF and IDP priorities of the area. No additional footprint will be disturbed other than that which is already cultivated or transformed. Moreover, no rezoning will take place, thus the sites will remain as per the IDP and SDF.
City of Johannesburg Metropolitan Municipality By-Laws ❖ Water Services By-Laws	Applicable City of Johannesburg by laws were reviewed and taken into consideration to ensure that the proposed pipeline will be in adherence to the City of Johannesburg by-laws
City of Tshwane Metropolitan Municipality IDP and SDF 2016-2021	The SDF is the legislated component of the municipality's Integrated Development Plan (IDP) that prescribes development strategies and policy guidelines to restructure and reengineer the urban and rural form. The SDF is the municipality's long-term vision of what it wishes to achieve spatially, and within the IDP programmes and projects. The SDF should not be interpreted as a blueprint or master plan aimed at controlling physical development, but rather the framework giving structure to an area while allowing it to grow and adapt to changing circumstances. The proposed project has considered and is guided by the Regions' SDF and IDP priorities of the area. No additional footprint will be disturbed other than that which is already cultivated or transformed. Moreover, no rezoning will take place, thus the sites will remain as per the IDP and SDF.
City of Tshwane Metropolitan Municipality By-Laws ❖ Public Participation By-Laws ❖ Water and Sewer By-Laws ❖ Water Supply By-Laws	Applicable City of Tshwane by laws were reviewed and taken into consideration to ensure that the proposed pipeline will be in adherence to the City of Tshwane by laws
Gauteng Provincial Environmental Management Framework	The aim of the EMF is to guide the protection and enhancement of environmental assets and natural resources along with development patterns to ensure sustainable environmental management and development patterns within and around the Gauteng Province.

LEGISLATION, POLICY OF GUIDELINE	DESCRIPTION OF COMPLIANCE
	The development site is located within Johannesburg North special management zone (the Greater Kyalami Conservancy) of the EMF, which aims to discourage gated communities and walled estates within the Greater Kyalami Area and prevent Light industrial or industrial development, large scale (big-box) retail and warehousing, high density residential development, retail or commercial development.
Gauteng Environmental Implementation Plan 2015-2020	The plan seeks to ensure that the numerous governance controls or mechanisms, which set the targets and oversee the performance of the national and provincial Departments and Municipalities, are monitored. The recommendations proposed in the EMPr are in line with the environmental priorities and targets of the EIP 2015 – 2020.
Gauteng Conservation Plan Version 3.3 (C-Plan 3.3)	The Gauteng Conservation Plan was considered in ensuring the protection of the surrounding ecology by preventing the sterilisation of soils and biodiversity. Moreover, the pipeline has been designed and will be laid in such a way as to prevent any further degradation to the disturbed upper reaches of the existing wetland.
Gauteng Urban Edge 2008 / 2009	In terms of the RSDF policy document, as adopted by the City of Johannesburg Metropolitan Municipality, the property is situated well within the latest Urban Development Boundary and all essential services and suitable road access can be made readily available for the proposed pipeline project.

3 Alternatives

Describe the proposal and 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. The determination of whether the 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.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not** include the no go option into the alternative table below.

Note: 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.

Please describe the process followed to reach (decide on) the list of alternatives below

Possible alternatives considered:

The following alternative types were initially discussed during the project design phase:

- Pipeline connection points;
- Pipeline route;
- Pipeline technology; and
- Pipeline layout along the route.

No technically and practically feasible alternatives existed for proposed project, and as such, these were not further investigated. No other connection location, or route alternatives have been proposed for the project as this is the only site available for the applicant

In terms of the pipeline layout along the route and the pipeline technology used, the proposed alternatives were considered based on the proximity of the available connection points to the Tanganani Extension 7 Residential Development, avoidance of any sensitivities on site and alignment with the surrounding land uses.

Due to the recent discovery of graves on-site, the preferred pipeline route alternative assessed below will be revised during the Final Basic Assessment Report. In addition to this, the Applicant has been notified of their responsibility to provide an alternative route layout with a 20m buffer around the existing graves. This revised layout will replace the existing layout in the Final Basic Assessment Report.

Provide a description of the alternatives considered:

Table 8: Alternatives Considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other (provide details of "other")	Description
1	**Proposal**	As part of the Reconstruction and Development Programme (RDP), all housing within the Tanganani Extension 7 Residential Development must have adequate sanitary facilities, storm-water drainage, and convenient access to clean water. It is understood that water will be pumped from the approved service reservoir to the proposed water tower, after which water will gravitate downwards into the bulk supply water pipeline. This pressurised municipal water will feed into the water supply network of the Tanganani Extension 7 Residential Development. Johannesburg Water (SOC) Ltd will construct, operate and maintain the bulk water supply pipeline within the landscape. The pipeline will be a mixture of HDPE and PVC piping, lain approximately ~ 1 to 1.5 metres below ground. The pipe will have a 0,355m diameter and is approximately 1,000m from connection to termination. The construction phase of the project is expected to be 12 months, and will create 30 new employment opportunities.

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

Connection of the Pipeline:

In terms of connection points, there are **no feasible alternatives**. Connection will be to the approved Diepsloot Water Reservoir on Portion 984 of the Farm Knopjeslaagte 385 JR. Water will be pumped from the approved service reservoir to the proposed water tower, after which, water will gravitate downwards into the bulk supply water pipeline. This pressurised municipal water will feed into the water supply network of the Tanganani Extension 7 Residential Development

Pipeline Route:

During the project design phase, several alternatives were considered for the pipeline route. After considering the technical and environmental aspects surrounding the pipeline route alternatives, it was decided that only the preferred pipeline route would be most practically feasible. **No other alternatives** have been investigated for the siting of this project.

The preferred alternative pipeline route was investigated and selected based on the following:

- The pipeline will be constructed adjacent to the existing road reserve;
- The layout has been carefully informed by the sensitivities on site such that:
  - The pipeline route follows the corridor of an existing pipeline in the upper reaches of the wetland; and
  - The upper reaches of the wetland have been largely transformed and disturbed with sightings of illegal dumping within the wetland, as well as a number of invasive species.
- The pipeline route is within and surrounded by development activities.

Figure 2: Illegal dumping taking place within the wetland

Due to the nature of the surrounding area, the current site disturbance and the purpose for which the pipeline will be constructed, the preferred pipeline route is the only viable alternative.

Pipeline Layout:

The layout of the proposed pipeline has been informed by the recommendations of the specialists and sensitivities on site. The layout of the site is mostly on transformed areas within the site and adjacent to the road reserve. It is expected that the pipeline will intersect a wetland system near Tanganani Extension 14. The wetland has been studied as part of this Basic Assessment, as well as part of the Tanganani Ext 14 Project, and is regarded as a disturbed hillslope seep wetland.

The layout of the pipeline has been designed in such a way as to transect the most disturbed portion of the wetland, and avoid areas of the wetland where sensitive ecological featured were recorded (refer to Figure 3 below).

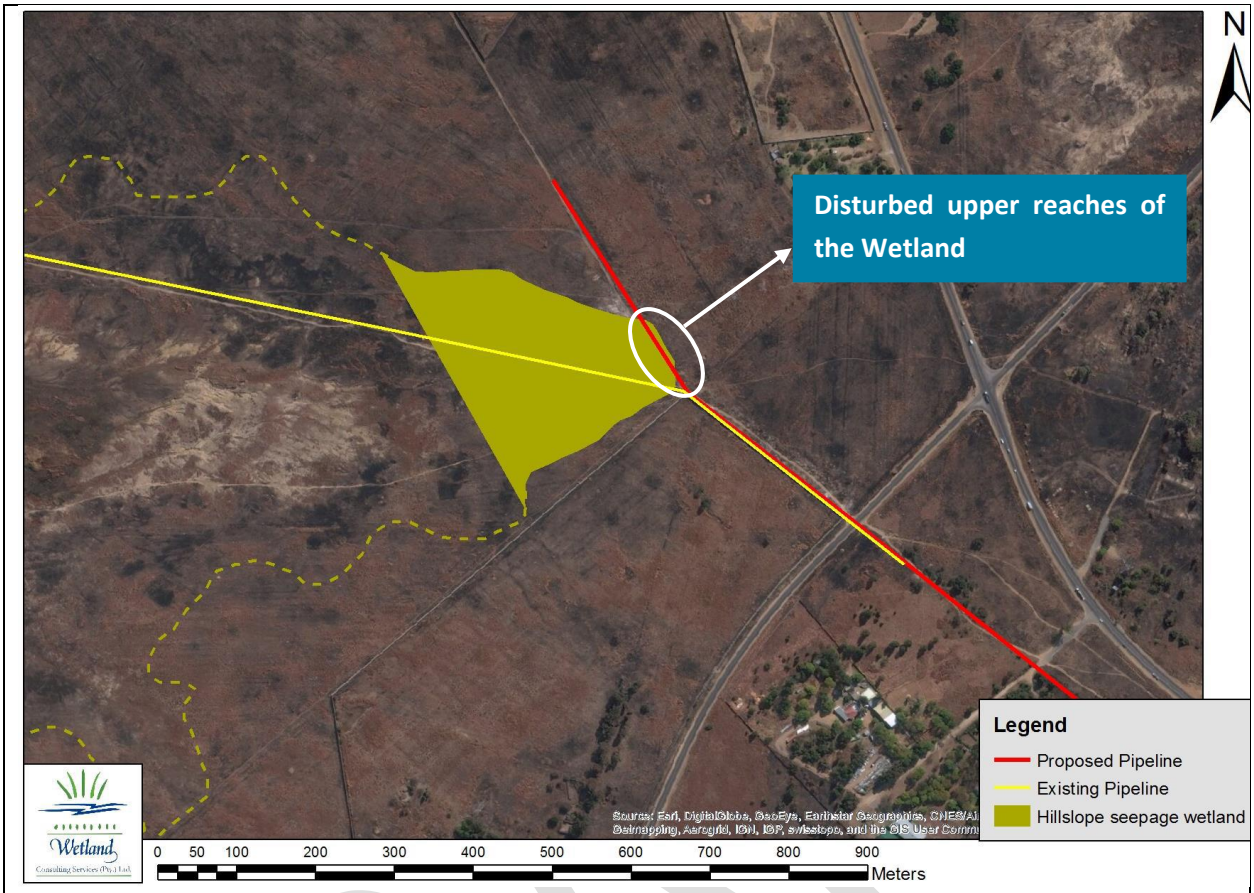

Figure 3: Map indicating the existing pipeline (yellow) and proposed pipeline (red) route over the upper reaches (encircled) of the existing wetland.

Pipeline Technology:

Technology alternatives were not considered, as the applicant will be making use of the Best Practical Environmental Option that is available in the piping industry. The technology alternatives were screened out at the initiation phase of the project.

4 Physical Size of the Activity

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

	Size of the activity (Ha/m²):
Proposed activity *(Total environmental (landscaping, parking, etc.) and the building footprint)*	30 000m²
Alternatives:	
~~Alternative 1 (if any)~~	
~~Alternative 2 (if any)~~	

or, for linear activities:

	Length of the activity (m/km):
Proposed activity	1km
~~**Alternatives:**~~	
~~Alternative 1 (if any)~~	
~~Alternative 2 (if any)~~	

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

	Size of the site/servitude (Ha/m^2):
Proposed activity	30m to 100m corridor
Alternatives:	
~~Alternative 1 (if any)~~	
~~Alternative 2 (if any)~~	

The GDARD requirements for Biodiversity Assessments require a 30m buffer zone around all wetlands in urban areas, with both the wetland and buffer zone regarded as sensitive. Given that the application is for a pipeline to cross a wetland, the application of a buffer zone is of limited value in this scenario. However, it is strongly recommended that the pipeline crossing be located within the existing disturbed habitat of the two-track and associated dumping. Areas of intact wetland habitat downslope of the disturbed area should be considered no-go areas.

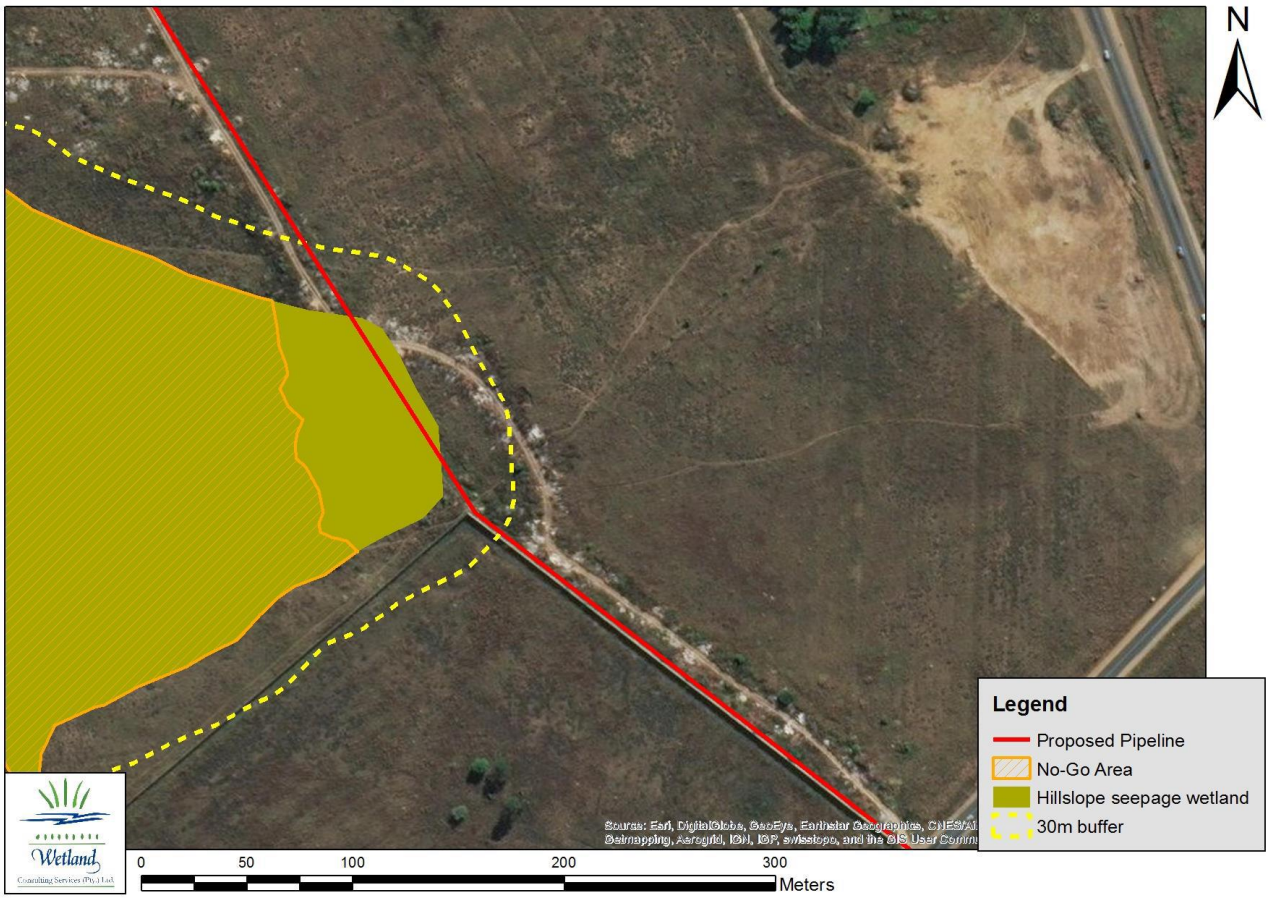

Figure 4: Map showing a 30m wetland buffer as well as the identified no-go zone for the pipeline.

5 Site Access

Proposal:

Does ready access to the site exist, or is access directly from an existing road?	**YES**
If NO, what is the distance over which a new access road will be built	N/A

Describe the type of access road planned**:**

The water pipeline connects at the Diepsloot Water Reservoir on Portion 984 of the Farm Knopjeslaagte 385 JR. Access to that farm portion is readily available off the R562 (Summit road). Since the pipeline will be installed adjacent to the Summit Road, access will be from Summit Road. As far as possible, existing tracks and tracks from the existing pipeline will be utilised. No additional tracks will be constructed.

Include the position of the access road on the site plan (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives

Section A 6-8 has been duplicated (only complete when applicable)	**0**	Number of times

6 Layout or Route Plan

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
  - A4 size for activities with development footprint of 10sqm to 5 hectares;
  - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
  - A2 size for activities with development footprint of >20 hectares to 50 hectares);
  - A1 size for activities with development footprint of >50 hectares);
- The following should serve as a guide for scale issues on the layout plan:
  - A0 = 1: 500
  - A1 = 1: 1000
  - A2 = 1: 2000
  - A3 = 1: 4000
  - A4 = 1: 8000 (±10 000)
- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;

- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
  - Rivers and wetlands;
  - the 1:100 and 1:50 year flood line;
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or infested with alien species);
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated).

FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)

- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes, the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

Please refer to Appendix A – A3 Maps.

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 the appropriate Appendix**.** It should be supplemented with additional photographs of relevant features on the site, where applicable.

Please refer to Appendix B – Site Photographs

8 Facility Illustration

A detailed illustration of the activity must be provided at a scale of 1:200 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 to be attached in the appropriate Appendix.

Please refer to Appendix C – Facility Illustrations

SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

Note: Complete Section B for the proposal and alternative(s) (if necessary)

Instructions for completion of Section B for linear activities

1. For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
2. Indicate on a plan(s) the different environments identified
3. Complete Section B for each of the above areas identified
4. Attach to this form in a chronological order
5. Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections of the route | **0** | times

Instructions for completion of Section B for location/route alternatives

1. For each location/route alternative identified the entire Section B needs to be completed
2. Each alterative location/route needs to be clearly indicated at the top of the next page
3. Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives | **0** | times

Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way:

1. All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then
2. All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B - Section of Route | **0** | (complete only when appropriate for above)

Section B – Location/route Alternative No. | **0** | (complete only when appropriate for above)

1 Property Description

Table 9: Property description: (Including Physical Address and Farm name, portion etc.)

Location of the site (water pipeline)	Portion 984 of the Farm Knopjeslaagte 385 JR, Portion 202 of the Farm Diepsloot 388 JR, Portion 31 of the Farm Diepsloot 388 JR, Portion 191 of the Farm Diepsloot 388 JR, Portion 19 of the Farm Diepsloot 388 JR, Remaining Extent of Portion 2 of the Farm Diepsloot 388 JR Portion 119 of the Farm Diepsloot 388 JR	
Municipal Jurisdiction	City of Johannesburg Metropolitan Municipality; and City of Tshwane Metropolitan Municipality	
Ward number	City of Johannesburg: Wards number 94, 113 and City of Tshwane: Ward number 106	
SG Code	T0JR00000000038500984 T0JR00000000038800202 T0JR00000000038800031 T0JR00000000038800191 T0JR00000000038800019 T0JR00000000038800002 T0JR00000000038800119	
Nearest Town	Diepsloot: Approximately 3.5km east of the water tower and pipeline.	
Site Co-ordinates (point of the water pipeline)	Longitude WGS 84 DMS	Latitude WGS 84 DMS
	28° 2' 42.405" E	25° 55' 50.250" S
	28° 2' 34.910" E	25° 55' 52.295" S
	28° 2' 20.705" E	25° 55' 50.564" S
	28° 2' 21.049" E	25° 55' 44.809" S
	28° 2' 13.093" E	25° 55' 50.503" S
	28° 1' 59.657" E	25° 55' 30.930" S
	28° 1' 42.741" E	25° 55' 1.776" S
Site access	The pipeline connects at Portion 984 of the Farm Knopjeslaagte 385 JR, situated along the R562 (Summit Road). The pipeline is aligned adjacent to the existing road and will follow the road in a northerly direction for 1km until it terminates at the approved Tanganani Extension 7 mixed-use residential development.	

Figure 5: Affected and adjacent properties

2 Activity Description

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 decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

~~Alternative:~~	~~Latitude (S):~~	~~Longitude (E):~~
	~~o~~	~~o~~

In the case of linear activities:

Preferred:	**Latitude (S):**	**Longitude (E):**
Starting point of the activity	25°55'47.61"S	28° 2'39.60"E
Middle point of the activity	25°55'33.59"S	28° 2'19.95"E
End point of the activity	25°55'26.21"S	28° 2'15.33"E

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached	**See Appendix H**

The 21 digit Surveyor General code of each cadastral land parcel

Please Refer to the Property Description table above

3 Gradient of the Site

Indicate the general gradient of the site.

~~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~~

4 Location in the Landscape

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

~~Ridgeline~~	~~Plateau~~	~~Side slope of hill/ridge~~	~~Valley~~	**Plain**	**Undulating plain/low hills**	~~River front~~

Figure 6: General view of the landscape. The terrain is slightly undulating to flat with a wetland depression.

5 Groundwater, Soil and Geological Stability of the Site

a) Is the site located on any of the following?

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

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s)		NO
c) are any caves located within a 300m radius of the site(s)		NO
d) are any sinkholes located within a 300m radius of the site(s)		NO

6 Agriculture

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?	YES	

Please note: The Department may request specialist input/studies in respect of the above.

According to the GDARD Provincial EMF (November 2014) the pipeline route traverses land recognised as having a high agricultural value (please see Figure B5: GAPA agricultural priorities of the GDARD EMF, attached as Appendix H in this report). However, the land has been earmarked as having conservation, agricultural, urban and rural development priority (please see Figure B11: Development and conservation priorities).

7 Groundwater

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

Indicate the types of groundcover present on the site and include the estimated percentage found on site

Natural veld - good condition **% = 5**	**Natural veld with scattered aliens** **% =15**	**Natural veld with heavy alien infestation** **% = 10**	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	**Cultivated land** **% = 10**	**Paved surface (hard landscaping)** **% = 10**	**Building or other structure** **% = 20**	**Bare soil** **% = 30**

Please note: The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site	YES	

Flora:

The pipeline traverses land which falls within the Grassland Biome of South Africa and within the Mesic Highveld Grassland Bioregion. According to the latest vegetation mapping of the country, the specific vegetation type is classified as Egoli Granite Grassland (Mucina & Rutherford, 2006). Further detail provided by Mucina and Rutherford (2006) is summarised below:

Egoli Granite Grassland is mostly restricted to the Gauteng Province and occurs between northern Johannesburg in the south, Lanseria Airport and Centurion in the north, Muldersdrift in the west and Tembisa in the east. The landscape consists of moderately undulating plains and low hills dominated by tall, usually *Hyparrhenia hirta* dominated, grassland. Soils are described as leached, shallow, coarsely grained, sandy soils poor in nutrients. Rainfall is strongly seasonal.

Common grass species encountered include *Aristida canescens, A. congesta, Cynodon dactylon, Digitaria monodactyla, Eragrostis capensis, E. chloromelas, E. curvula, E. racemosa, Heteropogon*

contortus, Hyparrhenia hirta, Melinis repens, Monocymbium ceresiiforme, Setaria sphacelata, Themeda triandra, and *Tristachya leucothrix*.

The vegetation type is currently considered ***Endangered***, with only roughly 3 % of a target of 24 % conserved. Current rates of transformation due to mostly urbanisation threaten most of the remaining untransformed areas.

Figure 7: Map showing the vegetation type of the area

Fauna:

The diversity of mammals in the general landscape is low, and consists of an assemblage of common and widespread terrestrial species with wide habitat tolerances. This is in part due to the homogenous (grassland) nature of the surrounding landscape. There is a high degree of human pressure on the site, especially from the Tanganani and Diepsloot West Townships. The adjoining roads and the security wall act as dispersal barriers for inter alia medium-sized mammals such as duiker and steenbok, whereas the substrate is compacted and gravelly as such obviating the occurrence of discerning burrowers such as springhare, aardvark and golden moles. Giant Bullfrogs were recorded within the wetland system, please refer to the table below for more information.

Figure 8: Typical Giant Bullfrog (*Pyxicephalus adspersus*) which may be found on site

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban area as defined in the Regulations) or within 600m (if outside the urban area as defined in the Regulations) radius of the site.	YES	

The vegetation type is currently considered ***Endangered***, with only roughly 3 % of a target of 24 % conserved. Current rates of transformation due to mostly urbanisation threaten most of the remaining untransformed areas.

The Gauteng C-Plan indicates that virtually the entire pipeline route falls with Critical Biodiversity Areas (CBA) or Ecological Support Areas (ESA). These areas have been flagged as important biodiversity areas due to the presence of listed plant species and/or habitat for listed plant species, specifically *Gnaphalium nelsonii*, *Habenaria kraenzliniana* and *Trachyandra erythrorrhiza*. None of these species were observed within the direct vicinity of the proposed pipeline route and, given the high level of disturbance due to dumping, it is considered unlikely that these species occur within the direct proposed pipeline footprint.

Within the wetland system, Giant Bullfrogs occur on site. The Giant Bullfrogs is “Near-Threatened” in South Africa, and the Giant Bullfrog population present within the wetland system represents one of the two potentially viable populations of the species between Pretoria and Johannesburg. The demand for housing leaves the wetland system vulnerable to potential invasion of illegal settlers, which automatically places the Giant Bullfrog population under threat. Moreover, it is known that people living in the area are catching the bullfrogs for food.

Are there any special or sensitive habitats or other natural features present on the site?	YES	

If YES, specify and explain:

Identified Wetland System:

The study area is located in the Limpopo River Catchment (Primary Catchment A), and more specifically quaternary catchment A21C. The pipeline route is located high in the catchment and runs near the watershed between catchments A21C and A21B. Catchment A21C is drained by the Jukskei River and its tributaries.

The identified wetland along the proposed pipeline route forms the extreme upper edge of a large hillslope seepage wetland draining in a westerly direction towards Diepsloot, and forms the headwaters of the watercourse that drains through the Diepsloot Township. The greater hillslope seepage wetland has been substantially impacted by historical sand mining and erosion, with large portions of the wetland characterised by a shallow soil profile due to loss of soil to sand mining and subsequent erosion.

The upper section of hillslope seepage affected by the proposed pipeline alignment is less impacted by erosion and sand mining, though it has been heavily impacted by dumping of building rubble and refuse. The disturbances have further resulted in many alien and weedy species becoming established in the wetland.

Figure 9: Alien invasive tree and illegal dumping within the upper reaches of the wetland

Figure 10: More intact landscape in the lower reaches of the wetland

Was a specialist consulted to assist with completing this section	YES	

If yes complete specialist details

Name of the specialist:	Dieter Kassier

Qualification(s) of the specialist:	❖ Honours B.Sc Environmental Science (Aquatic Ecosystem Health) (Distinction) – NWU ❖ SACNASP: Environmental Science (400254/14) ❖ South African Wetland Society (Reg. number R87XH0HU)			
Postal address:	PO Box 72295, Lynnwood Ridge, Pretoria			
Postal code:	0040			
Telephone:	(012) 349 2699	Cell:	076 403 2398	
E-mail:	dieterk@wetcs.co.za	Fax:	(012) 349 2993	
Are any further specialist studies recommended by the specialist?				NO

Signature of specialist: Date: 26 June 2017

Please note; If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

8 Land use Character of the Surrounding Area

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

1. Vacant land	**2. River, stream, wetland**	3. Nature conservation area	4. **Public open space**	5. Koppie or ridge
6. Dam or reservoir	**7. Agriculture**	**8. Low density residential**	**9. Medium to high density residential**	**10. Informal residential**
11. Old age home	**12. Retail**	13. Offices	14. Commercial & warehousing	15. Light industrial
16. Heavy industrial[AN]	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/polo fields	22. Airport[N]	23. Train station or shunting yard[N]	24. Railway line[N]	25. Major road (4 lanes or more)[N]
26. Sewage treatment plant[A]	27. Landfill or waste treatment site[A]	28. Historical building	**29. Graveyard**	30. Archeological site
31. Open cast mine	32. Underground mine	33.Spoil heap or slimes dam[A]	34. Small Holdings	

NOTE: Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks

NORTH

1,4,7	1,4,7	1,4,7	1,4,7	1,4,7
1,4,7,9	1,4,7	1,4,7	1,4,7	1,4,7,12
1,4,7,9	1,2,4,7		7,8,10, 29	6, 10
1,2,4,7,9	1,2, 4,7	7,8,10	7,8,10	7,8,10
1,4,7,9	1,4,7	1,4,7	1,4,7	1,4,7

WEST EAST

SOUTH

Note: More than one (1) Land-use may be indicated in a block

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an "A" and with an "N" respectively.

Have specialist reports been attached	YES	

If yes indicate the type of reports below

❖ Wetland Impact Assessment
❖ Heritage Screener

9 Socio-Economic Context

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

The pipeline is within **Region A** of the City of Johannesburg Metropolitan Municipality and **Region 4** of the City of Tshwane Metropolitan Municipality. The southern part of **Region A** is characterised by open space and is predominantly made up of agricultural holdings and large tracts of undeveloped land. Commercial interests are concentrated in Kya Sand, Lanseria and Fourways, however the area has with plenty of developmental opportunities. Despite some parts of the region comprising low residential densities, the majority of the region is

developed at medium to high densities. Sub area's within the Region are connected via several mobility roads and spines, which experience severe traffic congestion. The vast majority of the area falls within the Urban Development Boundary.

Region 4 is situated in the south-western portion of the metropolitan area. The region borders on the area of jurisdiction of the City of Johannesburg Metropolitan Municipality, Ekurhuleni Metropolitan Municipality as well as Mogale City to the west. The region is one of the more affluent areas. It incorporates Centurion and Irene in the east, Olievenhoutbosch in the south and the Rhens Nature Reserve in the west. Its strategic location along the border of Johannesburg has meant Region 4 has progressively developed further towards the south, with many investors attracted by local developments. Other important areas include the Zwartkop and Waterkloof military airports, the Centurion CBD, the Sunderland Ridge industrial area, the N1 corridor, the Louwlardia commercial and industrial area and Samrand.

1. **City of Johannesburg Metropolitan Municipality: Region A**

The region is home to more than 250 000 residents, most of whom are concentrated in Midrand. The western part of the region is scarcely populated, though some 56 000 people reside in the township of Deipsloot alone.

Unemployment levels in that settlement stand at over 50 percent and more than 70 percent of the residents live below the poverty line. In the Midrand area, approximately 70 percent of residents earn less than R2 500 a month, while 34 percent earn no income at all.

The population in the region is relatively young, with some 24 percent being between the ages of 20 and 29. While the formal residential areas are home to prosperous and well-educated residents, most of the people living in the townships and informal settlements are poor, with low levels of school education.

2. **City of Tshwane Metropolitan Municipality: Region 4**

Region 4 has a population of about 379 349 (source statistics SA census 2011), which is approximately 13% of the total population of Tshwane (2 921 488) (source statistics SA Census 2011). This is an increase from the 354 918 recorded by the 2008 Tshwane Household Survey.

Approximately 68.6% of the population are economically viable, whereas 31.4% are non-active. According to the Tshwane Household Survey, the region has 11.9% self-employed people between the ages of 15 and 64, with men making up 66.8% and women 33.2%.

In terms of income groups, 25 % of the population can be regarded as within the low-income group (monthly household income of less than R2 000 a month).

10 Cultural/Historical Features

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

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

(b) the construction of a bridge or similar structure exceeding 50m in length;

(c) any development or other activity which will change the character of a site-

(i) exceeding 5 000 m2 in extent; or

(ii) involving three or more existing erven or subdivisions thereof; or

(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) the re-zoning of a site exceeding 10 000 m2 in extent; or

(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Are there any signs of culturally (aesthetic, social, spiritual, environmental) 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 close (within 20m) to the site? If YES, explain:	YES

In terms of heritage resources occurring in the immediate and surrounding areas, there are no declared heritage sites in Diepsloot, or within a 5km radius of the proposed development area. Five Archaeological Impact Assessments and a single Heritage Impact Assessment have been conducted within a 5km radius of the proposed development site. These surveys identified very little evidence of archaeological remains, aside from occasional ex situ artefactual material and small family cemeteries, but they note the degraded landscape as a result of recent densification of human occupation.

Five graves were found on site, adjacent to the proposed pipeline alignment. These graves are relatively recent, although their exact age is unknown, and they are likely linked to the settlements in the surrounding area. The five graves comprise three marked by stone cairns, including what appears to be

a child's grave, one enclosed in brick, and a single formal grave bearing a headstone. The graves are not fenced, and it was not established whether the families of the deceased are known.

No fatal flaws from a heritage perspective have been identified for the proposed development, and it is expected that the Applicant will adjust the pipeline alignment to avoid the graves.

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

The Heritage Screener statement has been attached as Appendix D2.

Will any building or structure older than 60 years be affected in any way?	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	NO
If yes, please attached the comments from SAHRA in the appropriate Appendix	

SECTION C: PUBLIC PARTICIPATION (SECTION 41)

The Environmental Assessment Practitioner must conduct public participation process in accordance with the requirement of the EIA Regulations, 2014.

Table 10: Public Participation Details.

Publication name	The Star	
Date published	28 June 2017	
Site notice position along pipeline:	**Latitude**	**Longitude**
Start:	25°55'47.61"S	28° 2'39.60"E
Middle:	25°55'33.59"S	28° 2'19.95"E
On the Mnandi Road:	25°55'38.28"S	28° 2'29.36"E
Date placed	28 June 2017	

2 Local Authority Participation

Local 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 thirty (30) calendar days before the submission of the application to the competent authority.

Was the draft report submitted to the local authority for comment?	YES	
If yes, has any comments been received from the local authority?		NO

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

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

- Etienne Allers of the Environmental Impact Management Division at the City of Johannesburg requested Kongiwe to deliver a Hard Copy and Electronic copy of the Report to his offices when available.
- Wietsche Roets from the Department of Water and Sanitation reviewed the findings of the Wetland Impact Assessment and recommend that registration for GA 509 be made.

No further comments have been received to date. Any comments received from I&AP's during the review of this Basic Assessment Report will be incorporated into the Report and recorded in Appendix E.

3 Consultation with other Stakeholders

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

Has any comment been received from stakeholders?	YES	

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

Harm Schreur, Grietjie Kunert and Chris Lombard from Century Property Development are affected landowners, Century owns Portion 115 of the farm Knopjeslaagte 385 JR, and requested to be registered as an I&AP for the project. They would like to be kept informed of the project process.

If "NO" briefly explain why no comments have been received

No comments have been received to date. Any comments received from the I&AP's during the review of this Basic Assessment Report will be incorporated into the Report and recorded in Appendix E

4 General Public Participation Requirements

The Environmental Assessment Practitioner must ensure that the public participation process 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 and ratepayers associations. 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 flawed.

The EAP must record all comments and respond to each comment of the public / interested and affected party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

Please refer to Appendix E for Comments Received and the Comments and Responses Report

5 Appendices for Public Participation

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below

Appendix 1 – Proof of site notice
Appendix 2 – Written notices issued as required in terms of the regulations
Appendix 3 – Proof of newspaper advertisements
Appendix 4 –Communications to and from interested and affected parties
Appendix 5 – Minutes of any public and/or stakeholder meetings
Appendix 6 - Comments and Responses Report
Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report
Appendix 8 –Comments from I&APs on amendments to the BA Report
Appendix 9 – Copy of the register of I&APs

Kongiwe Environmental are cognisance of the above and have structured the public participation to reflect all information required in the following format:

- Appendix E1 – Site Notices and Advert
- Appendix E2 – Stakeholder Correspondence
- Appendix E3 – Authority/Organ of State Correspondence
- Appendix E4 – I&AP Database
- Appendix E5 – Comments and Responses
- Appendix E6 – Comments Received

SECTION D: RESOURCE USE AND PROCESS DETAILS

Note: Section D is to be completed for the proposal and alternative(s) (if necessary)

Instructions for completion of Section D for alternatives

For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed
Each alterative needs to be clearly indicated in the box below
Attach the above documents in a chronological order

Section D has been duplicated for alternatives	**0**	Times
Section D Alternative No. (complete only when appropriate for above)	**0**	

1 Waste, Effluent and Emissions Management

Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	YES	
If yes, what estimated quantity will be produced per month?	Uncertain at this stage	

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

Minimal waste will be generated as a result of the construction phase. Waste will be limited to building rubble. Excavated material will be reused as fill material. Topsoil generated by cut and fill activities will be utilized by spreading the soil onto the areas that are to be grassed or rehabilitated on site.

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

In order to comply with legal requirements, excess material will be transported and disposed of at a registered municipal landfill site.

Will the activity produce solid waste during its operational phase?		NO
If yes, what estimated quantity will be produced per month?	N/A	

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

N/A. No waste will be produced during the operational phase of the project.

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity?	

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

N/A.

Note: 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, 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? If yes, inform the competent authority and request a change to an application for scoping and EIA.	NO
Is the activity that is being applied for a solid waste handling or treatment facility? 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.	NO

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

N/A

Liquid effluent (other than domestic sewage)

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	NO
If yes, what estimated quantity will be produced per month?	N/A
If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)?	NO
Will the activity produce any effluent that will be treated and/or disposed of on site?	NO
If yes, what estimated quantity will be produced per month?	N/A

If yes describe the nature of the effluent and how it will be disposed.

N/A. No liquid effluent will be produced, treated or disposed of on site

Note that if effluent is to be treated or disposed on site 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?	NO

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

N/A

Liquid effluent (domestic sewage)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?	NO
If yes, what estimated quantity will be produced per month?	N/A
If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)?	NO

Will the activity produce any effluent that will be treated and/or disposed of on site?	NO

If yes describe how it will be treated and disposed of.

N/A. Now sewage effluent will be produced, treated or disposed of on site

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?	YES	
If yes, is it controlled by any legislation of any sphere of government?		NO

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

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

During the construction phase, it is expected that there will be short term, localised dust generation and emissions from vehicles and/or machinery on site. Dust and emissions will be short term, and have limited impact in term of extent and severity. Appropriate dust suppression measures will be implemented to reduce any dust impacts, as contained within Appendix F of the EMPr. It is recommended that vehicles be serviced and kept in good mechanical condition in order to minimise possible exhaust emissions or hydrocarbon leakages.

2 Water Use

Indicate the source(s) of water that will be used for the activity

municipal	Directly from water board	groundwater	river, stream, dam or lake	**Other – The Diepsloot water reservoir will collect water to be pumped from the proposed water tower and into the proposed pipeline**	the activity will not use water

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	N/A
If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix	
Does the activity require a water use permit from the Department of Water Affairs?	YES
If yes, list the permits required	A General Authorisation (Notice 509) for Section 21 (c) and Section 21 (i) water uses
If yes, have you applied for the water use permit(s)?	NO
If yes, have you received approval(s)? (attached in appropriate appendix)	NO

Based on the findings of the Wetland Impact Assessment, Kongiwe have received approval from the DWS to apply for a water use General Authorisation (GA).

3 Power Supply

Please indicate the source of power supply e.g. Municipality / Eskom / Renewable energy source

The activity will not utilise power for the installation of the 1km long pipeline.

If power supply is not available, where will power be sourced from?

N/A

4 Energy Efficiency

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

Not Applicable

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

Not Applicable

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts as well as the impacts of not implementing the activity (Section 24(4)(b)(i).

1 Issues Raised by Interested and Affected Parties

Summarise the issues raised by interested and affected parties.

At the time of compilation of this draft basic assessment for review, no issues have been raised with the EAP. Any issues raised after the 30-day review period will be addresses accordingly and contained within Appendix E.

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included)
(A full response must be provided in the Comments and Response Report that must be attached to this report):

None.

2 Impacts that may result from the Construction and Operation Phases

Briefly describe the methodology utilised in the rating of significance of impacts.
The impact significance rating process serves two purposes: firstly, it helps to highlight the critical impacts requiring consideration in the management and approval process; secondly, it shows the primary impact characteristics, as defined above, used to evaluate impact significance. The impact significance rating system is presented in the tables below, and involves three parts:

- **Part A**: Define impact consequence using the three primary impact characteristics of magnitude, spatial scale/ population and duration;
- **Part B**: Use the matrix to determine a rating for impact consequence based on the definitions identified in Part A; and
- **Part C**: Use the matrix to determine the impact significance rating, which is a function of the impact consequence rating (from **Part B**) and the probability of occurrence.

The **significance** is determined by combining the criteria in the following formula:

$$S= (E+D+M) P$$

Table 11: Part A: Defining Consequence in Terms of Magnitude, Duration and Extent (Spatial Scale)[5]

IMPACT CHARACTERISTICS	DEFINITION	SCALE	CRITERIA
MAGNITUDE (M)	Major (-)	8-10	Substantial deterioration or harm to receptors; receiving environment has an inherent value to stakeholders; receptors of impact are of conservation importance; or identified threshold often exceeded
	Moderate (-)	6-8	Moderate/measurable deterioration or harm to receptors; receiving environment moderately sensitive; or identified threshold occasionally exceeded
	Minor (-)	2-4	Minor deterioration (nuisance or minor deterioration) or harm to receptors; change to receiving environment not measurable; or identified threshold never exceeded
	Small	0-2	There will be no effect on the environment
	Minor (+)	2-4	Minor improvement; change not measurable; or threshold never exceeded
	Moderate (+)	6-8	Moderate improvement; within or better than the threshold; or no observed reaction
	Major (+)	8-10	Substantial improvement; within or better than the threshold; or favourable publicity
EXTENT (E)	Site or local	1-2	Site specific or confined to the immediate project area
	Regional	2-4	May be defined in various ways, e.g. cadastral, catchment, topographic

[5] Use these definitions to define the consequence in Part B

	National/ International	4-5	Nationally or beyond
DURATION (D)	Very Short Term	1	The lifetime of the impact will be of a very short duration (0–1 years)
	Short term	2	The lifetime of the impact will be of a short duration (2-5 years)
	Medium term	3	The lifetime of the impact will be of a Medium term (5 -15 years)
	Long term	4	The lifetime of the impact will longer than 15 years
	Permanent	5	The impact will be permanent and cannot be reversed

Table 12: Part B: Determining Consequence Rating [6]

			EXTENT (E)		
			Site or Local	**Regional**	**National/ international**
MAGNITUDE (M)					
Small	**DURATION (D)**	Very Short Term	**Low**	**Low**	**Low**
		Short term	**Low**	**Low**	**Low**
		Medium term	**Low**	**Low**	**Low**
		Long term	**Low**	**Medium**	**Medium**

[6] Rate consequence based on definition of magnitude, spatial extent and duration for the significance rating calculation of (E+D+M)

		Permanent	High	High	High
Minor	DURATION (D)	Very Short Term	Low	Low	Low
		Short term	Low	Low	Medium
		Medium term	Low	Low	Medium
		Long term	Medium	Medium	Medium
		Permanent	High	High	High
Moderate	DURATION (D)	Very Short Term	Low	Low	Medium
		Short term	Low	Medium	Medium
		Medium term	Medium	Medium	High
		Long term	Medium	High	High
		Permanent	High	High	High
Major	DURATION (D)	Very Short Term	Low	Low	Medium
		Short term	Medium	Medium	High
		Medium term	Medium	High	High
		Long term	High	High	High
		Permanent	High	High	High

Table 13: Part C: Determining Significance Rating [7]

		SIGNIFICANE RATING (S)		
		Low	Medium	High
PROBABILITY (P)	Definite	Medium	High	High
	Highly Probable	Medium	Medium	High
	Possible	Low	Medium	Medium
	Improbable	Low	Low	Medium
	Very Improbable	Low	Low	Low

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

[7] Rate significance based on consequence and probability for the significance rating calculation of S= (E+D+M)P

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

THE PREFERRED ALTERNATIVE

Table 14: The Preferred Alternative.

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED
CONSTRUCTION PHASE IMPACTS				
Disturbance of wetland habitat and fauna	**Moderate (45) - Negative**	❖ The construction servitude needs to be kept to a minimum width to limit vegetation destruction, and needs to be clearly demarcated in the field. Ideally the construction disturbance footprint should be kept to an area no wider than 5 m. No activities should be allowed outside the construction servitude. ❖ All materials stockpiles and construction camps should be located outside wetland areas. ❖ The areas where vegetation is destroyed and disturbed will however need to be monitored against invasion by alien vegetation and, if encountered, will need to be removed. If natural re-vegetation is unsuccessful, seeding and planting of the area will need to be implemented in consultation with an appropriate wetland vegetation specialist. ❖ Excavated soils will need to be replaced in the same order as excavated from the trench, i.e. sub-soil must be replaced first and	**Low (27) - Negative**	**Moderate / Low**

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED
		topsoil must be replaced last. This will maximise opportunity for re-vegetation of disturbed areas. ❖ Excavation of the trench should only take place immediately before placement of the pipe. Ideally the trench should not remain open for longer than 7 days.		
Increased erosion within wetlands due to disturbance of wetland sediments	**Low (27) - Negative**	❖ Undertake construction activities in the dry season. ❖ Limit the extent of the construction servitude to as small an area as possible. ❖ Excavated soils should be stockpiled on the upslope side of the excavated trench so that eroded sediments off the stockpile are washed back into the trench. ❖ Concentration and accumulation of flows along the servitude should be prevented by regularly providing for surface runoff to flow into the adjacent grassland rather than along the construction servitude and into the wetlands. ❖ Closure and rehabilitation of the pipeline servitude should commence as soon as the pipeline has been laid in the trench. ❖ Soils should be landscaped to the natural landscape profile with care taken to ensure that no preferential flow paths or berms remain.	**Low (14) - Negative**	**Low**
Increased sediment movement into the wetlands due to erosion on approach and departure slopes	**Low (27) - Negative**	❖ Limit the extent of exposed pipeline trench excavations at any one time by phasing the excavations and laying of the pipeline. ❖ Where possible, stockpile soils on upslope side of trench. If not possible, place a bidim wall or fibre roll sediment barrier adjacent to	**Low (14) - Negative**	**Low**

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED
		the wetland boundary to prevent sediments washing into the wetlands. ❖ Close trench and landscape back to natural profile as soon as possible after excavation.		
Altered wetland hydrology due to interception/impoundment/diversion of flows	**Moderate (30) - Negative**	❖ To prevent the formation of preferential flow paths in the subsurface, regular trench breakers (impermeable barriers) should be place within the trench along the approach and departure slopes to the wetland. This could be achieved for example with bentonite.	**Low (14) - Negative**	**Low**
Increase in alien vegetation and pioneer species	**Moderate (40) - Negative**	❖ It is recommended that all invasive alien vegetation be cleared from site following the completion of construction activities, with follow up clearing being undertaken after 6 months.	**Low (14) - Negative**	**Moderate / Low**
Deterioration in water quality due to spills and leaks of hazardous materials.	**Low (24) - Negative**	❖ Institute environmental best practice guidelines as per the DWA Integrated Environmental Management Series for Construction Activities. ❖ Limit quantities of hazardous substances on site to the volumes used during 1 days' work. ❖ All soil contaminated due to leaks or spills should be remediated on site. If this is not possible, such contaminated soils must be disposed of in a suitable waste facility. ❖ Waste should be stored on site in clearly marked containers in a demarcated area. All waste material should be removed at the end of every working day to designated waste facilities at the main	**Low (14) - Negative**	**Low**

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED
		construction camp/suitable waste disposal facility. All waste must be disposed of offsite.		
The construction of the proposed pipeline could directly impact on marked graves	High (80) - Negative	❖ Alignment should be altered to avoid the graves, and give them sufficient berth that they are not negatively impacted by excavation work, or by increased traffic resulting from construction ❖ graves be fenced off, with the fence situated at least 5m from the graves ❖ There should be a gate in the fence to allow access to the graves by family members. ❖ pipeline alignment should be moved at least 15m from the fenced off graves, providing a buffer of 20m total around the graves. ❖ Familiarise all staff and contractors with procedures for dealing with heritage objects/sites.	**Low (27) - Negative**	**Low**
OPERATIONAL PHASE IMPACTS				
Increased flows due to leaks or pipe failure	**Low (20) - Negative**	❖ Regular inspections and maintenance of the pipeline must be undertaken during the operational phase, with any leaks repaired immediately. ❖ Any damage/erosion caused by pipe failure must be repaired immediately following the event.	**Low (20) - Negative**	**Low**
Erosion due to subsidence along pipeline trench.	**Moderate (33) - Negative**	❖ Trench breakers must be installed along the pipeline trench. A material with low hydrological conductivity (a Bentonite mix is recommended), in the form of trench breakers should be packed	**Low (14) - Negative**	**Low**

POTENTIAL IMPACTS:	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED
		around the pipe and should be installed at regular intervals to prevent the pipeline behaving as a conduit and to intercept any concentrated flow down the pipeline route. Spacing between trench breakers should vary depending on the slope of the landscape – the steeper the slope the smaller the distance between trench breakers. Spacing should be such that flows backing up behind one trench breaker extend back to the base of the previous trench breaker. ❖ A walk-through survey should be undertaken long the entire pipeline route 6 months after completion of construction activities and then again at yearly intervals to survey for signs of subsidence along the pipeline route. Any subsidence should be immediately repaired.		

NO-GO OPTION:

These are the potential impacts should the project **NOT** be implemented, I.e. The No-Go option implies that the **project does not proceed.**

Table 15: The No-Go Option.

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED
Negative implications for the sustainability of the water network system within the area. Should any	**Negative**	No management measures are applicable. However, it would be beneficial if the following activity DOES take place:	**Negative**	**High**

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:	RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED
other future residential developments be constructed, there will not be a sufficient water network to meet this demand.		❖ Installation of pipes and bulk infrastructure with known reduced leakage potential		
Inability to meet the current capacity demands of the Tanaganani Extension 7 residential development	**Negative**	No management measures are applicable. However, it would be beneficial if the following activity DOES take place: ❖ Installation of pipes and bulk infrastructure with known reduced leakage potential ❖ Established water network for the Tanganani Extension 7 Residential Development	**Negative**	**High**
Not undertaking the project means there will be no opportunity for job creation within the local community.	**Negative**	No management measures are applicable. However, it would be beneficial if the following activity DOES take place: ❖ Sources of local employment must be sought for the installation of pipes and bulk infrastructure with known reduced leakage potential.	**Negative**	**Medium**
Not water services provided to the area will not support the provincial and municipal plans	**Negative**	No management measures are applicable. However, it would be beneficial if the following activity DOES take place: ❖ Installation of pipes and bulk infrastructure with known reduced leakage potential	**Negative**	**High**

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

Wetland Impact Assessment – Attached as Appendix D

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

Assumptions and Limitations of the Heritage Screener:

None.

Assumptions and Limitations of the Wetland Impact Assessment:

- Due to the scale of the remote imagery used (1:10 000 orthophotos and Google Earth Imagery), as well as the accuracy of the handheld GPS unit used to delineate wetlands in the field, the delineated wetland boundaries cannot be guaranteed beyond an accuracy of about 15m on the ground. Should greater mapping accuracy be required, the wetlands would need to be pegged in the field and surveyed using conventional survey techniques.
- The pipeline route runs along an area that is heavily utilised for illegal dumping of building rubble and refuse. Along the proposed wetland crossing, most of the soil surface is covered by such rubble and refuse, in some cases to more than 1m in depth. This disturbance makes it difficult to reliably observe wetland indicators within the top 500mm of the soil profile, as well as to observe wetland vegetation indicator species, which have been mostly replaced by weeds and invasive species. These disturbances therefore impose a level of uncertainty on the delineated wetland boundary, though the delineation and assessment as detailed in this report is still considered sufficient for assessing the likely impact of the pipeline.
- No access was granted to the land located northeast of the proposed pipeline route. The field assessment was therefore limited to observations of the wetland area to the southwest of the route, and field verification of the wetland delineation was also limited to this area.

Assumptions and Limitations of the EAP:

The following assumptions and limitations are applicable to the studies undertaken within this Basic Assessment Process:

- Specialist studies assume that any potential impacts on the environment associated with the Proposed Project, will be avoided or mitigated accordingly within the basic assessment report.
- It is assumed that the pipeline route, corridor and connection points represent the most technically suitable sites for the establishment of the bulk water supply pipeline.
- This basic assessment report and supporting documentation was compiled under the impression that all information provided by the Applicant (GDHS) to Kongiwe Environmental was correct, accurate and valid at the time it was provided.

3 Impacts that may result from the Decommissioning and Closure Phase

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

The application for the proposed bulk water supply pipeline is a new activity. The applicant does not expect to decommission the pipeline in the near future. As soon as it has been decided that the pipeline will be decommissioned, an application for closure and decommissioning will be submitted to the competent authority

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

N/A

Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

N/A

4 Cumulative Impacts

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

The potential for cumulative impacts is very low given the footprint of the pipeline and the level of existing development in the area. Although there is a presence of listed plant species and/or habitat for listed plant species, specifically *Gnaphalium nelsonii*, *Habenaria kraenzliniana* and *Trachyandra erythrorrhiza*, none of these species were observed within the direct vicinity of the proposed pipeline route and, given the high level of disturbance due to dumping, it is considered unlikely that these species occur within the direct proposed pipeline footprint.

5 Environmental Impact Statement

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal 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.

Proposal

The study area for this report consists of a section of the proposed pipeline route located in close proximity to a large hillslope seepage wetland. The proposed pipeline runs from the existing Diepsloot Reservoir located along Summit Road in a north-westerly direction, crossing Mnandi Road and extending another 550m beyond Mnandi Road. The full length of the proposed pipeline route is 1 000m. The pipeline will fall within quaternary catchment A21C.
The Gauteng C-Plan indicates that virtually the entire pipeline route falls with Critical Biodiversity Areas (CBA) or Ecological Support Areas (ESA). However, the pipeline route assessed was found to be significantly disturbed. The route follows an existing two-track with extensive dumping of refuse and building rubble on either side of the road.

A single wetland was identified by the Wetland Impact Assessment. The pipeline will transect the extreme upper edge of a large hillslope seepage wetland which drains in a westerly direction towards Diepsloot. The greater hillslope seepage wetland has been substantially impacted by historical sand mining and erosion. The upper section of hillslope seepage affected by the proposed pipeline alignment is less impacted by erosion and sand mining, though it has been heavily impacted by dumping of building rubble and refuse. As a consequence, the hillslope seepage wetland is considered to be largely modified (PES category D – 4.7), and of Moderate importance and sensitivity.

Although the proposed development will have no impact on palaeontological resources, and archaeological impacts are unlikely, the presence of the graves renders the proposed alignment unsuitable for placement of the pipeline. Rather, this alignment should be altered to avoid the graves, and give them sufficient berth that they are not negatively impacted by excavation work, or by increased traffic resulting from construction. It is recommended that the graves be fenced off, with the fence situated at least 5m from the graves; there should be a gate in the fence to allow access to the graves by family members. The pipeline alignment should be moved at least 15m from the fenced off graves, providing a buffer of 20m total around the graves. In light of the above, should the proposed alignment be adjusted, and the new alignment avoid the graves entirely, no further heritage studies will be required.

Overall: The proposed construction and operation of the pipeline will result in a number of potential impacts to the wetland. However, given the highly disturbed nature of the wetland habitat in question, the fact that the pipeline follows an existing disturbance in the form of a two-track, and the various mitigation measures proposed, **all the expected impacts can be reduced to Low environmental significance after mitigation**.

Cumulative impacts: for the pipeline are expected to be low in significance due to the size of the development footprint, the surrounding land-uses and the intention for the project. The pipeline will be laid on land that has been largely transformed due to previous and existing development and “settlement” within the region. Therefore, the installation of the pipeline is considered appropriate within the proposed location without any significant cumulative impacts.

6 Impact Summary of the Proposal or Preferred Alternative

For proposal:

The following impacts are expected to occur:

Construction Phase:

- Disturbance of wetland habitat and fauna;
- Increased erosion within wetlands due to disturbance of wetland sediments;
- Increased sediment movement into the wetlands due to erosion on approach and departure slopes;
- Altered wetland hydrology due to interception/impoundment/diversion of flows;
- Increase in alien vegetation; and
- Deterioration in water quality due to spills and leaks of hazardous materials.
- The construction of the proposed pipeline could directly impact on marked graves

Operational Phase:

- Increased flows due to leaks or pipe failure; and
- Erosion due to subsidence along pipeline trench.

No-Go Compulsory:

Should the "no-go" alternative be identified as the preferred alternative, then the following situations will occur:

- The property will retain its current status and no construction activities will be undertaken;
- In addition, not using the site for any economic activities does not provide opportunity for job creation within the local community. Business activities provide entrepreneurial opportunities as well as job opportunities, while the environmental impact will be fairly insignificant;
- The no go alternative will contribute negatively water security and sustainable water supply within the region as well as for the Tanganani Extansion 7 Residential Development
- If the No-Go alternative is proposed, the recently identified graves will remain unfenced and susceptible to disturbance.

Based on these reasons the "No-Go" alternative is not recommended. The environmental impacts associated with the proposed pipeline are considered to be of an acceptable level and can be effectively managed with the implementation of effective mitigation methods as discussed in the EMPr.

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

Based on the findings within this Basic Assessment, as well as the outcomes of the Wetland Impact Assessment, it is concluded that considering the existing disturbances impacting on the affected wetland and resulting in the largely modified condition of the affected wetland, together with the fact

that expected impacts can be mitigated to Low significance through the application of a number of easily implementable mitigation measures, it is our considered opinion that the proposed pipeline detailed in this report could be authorised from a wetland perspective.

7 Spatial Development Tools

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

The WET-Health assessment tool is however not applicable to pan wetlands. As such a modified version of the Resource Directed Measures for Wetland Ecosystems (DWAF, 1999) was utilised for determination of the PES for the pan. This modified version incorporates catchment considerations into the PES. Further, the activity is compatible with:

- Gauteng Conservation Plan,
- Gauteng Environmental Management Framework.
- Gauteng Spatial Development Framework
- City of Johannesburg Metropolitan Regional Spatial Development Framework;
- City of Johannesburg Metropolitan Integrated Development Plan;
- City of Tshwane Metropolitan Spatial Development Framework
- Tshwane Regional Integrated Development Plan

8 Recommendations of the 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 as bound by professional ethical standards and the code of conduct of EAPASA).	YES

~~If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):~~

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

It is the recommendation of the environmental consultant that the installation of the pipeline be authorised, constructed and operated due to the positive impacts associated with its development, as well as the negligible negative impacts arising for the implementation of the project. The overall environmental impacts identified as part of this Basic Assessment Process can easily be mitigated provided that the appointed contractors implement the proposed EMPr and mitigation measures.

The construction and operation of the bulk water supply pipeline should be implemented according to the specifications of the EMPr to ensure mitigation and management of potential impacts associated with construction and operation activities. The activities should be monitored against the approved EMPr, the Environmental Authorisation (once issued) and all other relevant environmental legislation

As per the findings of the Wetland Impact Assessment, the following conditions of authorisation are proposed:

- All construction activity should take place within the dry season (June to September);
- All construction activity within the wetland should be completed within a 2 week period. The excavated trench should not remain open for more than 7 days.
- All invasive alien vegetation should be removed from the construction servitude and immediate adjacent areas.
- All building rubble and refuse should be removed from the construction servitude and immediate adjacent areas and disposed of in a suitable facility.
- A monitoring plan be implemented that includes the following:
  - Inspection to be undertaken of affected wetland area at completion of construction activities within the wetland, and after 6 months;
  - Inspections to be undertaken by wetland specialist or suitably qualified ecologist;
  - Inspection to focus on erosion, revegetation and alien vegetation; and
  - All recommendations from the monitoring report to be implemented.

As per the findings of the Heritage Screener, the following conditions of authorisation are proposed:

- Alignment should be altered to avoid the graves, and give them sufficient berth that they are not negatively impacted by excavation work, or by increased traffic resulting from construction
- graves be fenced off, with the fence situated at least 5m from the graves
- There should be a gate in the fence to allow access to the graves by family members.
- pipeline alignment should be moved at least 15m from the fenced off graves, providing a buffer of 20m total around the graves.
- Familiarise all staff and contractors with procedures for dealing with heritage objects/sites.

9 Needs and Desirability of the Proposed Development

Project need

In terms of the project timing, there is a need to align the installation of the proposed pipeline within the construction phase of the approved Tanganani Extension 7 Residential Development. The current municipal water system cannot meet the capacity demands for the new residential development. To comply with RDP standards, sustainable water supply must be available within 200m of each household and since water is a basic human need, this initiative is considered to be of high priority.

Project Desirability

By tying into the existing Diepsloot Reservoir, the supply to the Tanganani Extension 7 Residential Development will be greatly increased and the supply will be reliable. It is expected that the current technology of piping to be installed on-site will be that of High Density Polyethelene (HDPE) piping. This piping will greatly reduce water losses compared to that of existing pipeline within the area.

The proposed development will provide employment opportunities to the local community both during the construction and operational phases. It will further contribute to the upliftment of the community through the provision of infrastructure and services in the form of bulk water services in the area.

10 Period for which the Environmental Authorisation is required?

(Consider When The Activity Is Expected To Be Concluded)

No decommissioning is required. The pipeline will function for a , with regular maintenance. The Authorisation should be valid for this time.

11 Environmental Management Programme

(must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers “Yes” to Point 7 above then an EMP is to be attached to this report as an Appendix

EMPr attached	YES. Attached as Appendix F