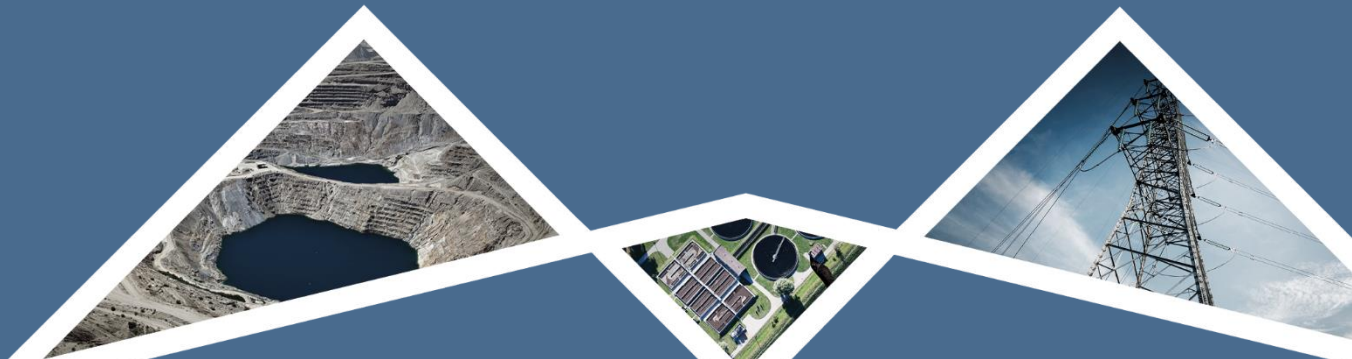
EIMS | ENVIRONMENTAL IMPACT MANAGEMENT SERVICES

T 011 789 7170 E info@eims.co.za W www.eims.co.za

PROPOSED SEWER PIPELINE FOR THE SELKIRK AVENUE HOUSING DEVELOPMENT

BASIC ASSESSMENT REPORT



DOCUMENT DETAILS

EIMS REFERENCE:	1433
DOCUMENT TITLE:	Basic Assessment Report: Proposed Sewer Pipeline for The Proposed Selkirk Avenue Housing Development

DOCUMENT CONTROL

	NAME	SIGNATURE	DATE
COMPILED:	Liam Whitlow		2024/07/18
CHECKED:	Liam Whitlow		2024/07/18
AUTHORIZED:	Liam Whitlow		2024/07/18

REVISION AND AMENDMENTS

REVISION DATE:	REV #	DESCRIPTION
2023/07/21	ORIGINAL DOCUMENT	Report for Public Review and Comment
2024/02/28	REVISION 1	Report for Final Submission
2024/07/18	REVISION 2	Report for Re-Submission and Public Review

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1 INTRODUCTION AND PROJECT DESCRIPTION

CSM Consulting Services (Pty) Ltd on behalf of the Johannesburg Social Housing Development Company (JOSHCO) (hereafter referred to as the applicant) has appointed Environmental Impact Management Services (Pty) Ltd (EIMS) as the Environmental Assessment Practitioner (EAP) to assist with undertaking the required authorisation processes (including the statutory public participation), and to compile and submit the required documentation in support of application for:

- Environmental Authorisation (EA) in accordance with the NEMA- Listed activity/ies:
    - Listing Notice 1: Activity 19; and
    - Listing Notice 3: Activity 12.
- Water Use Licence (WUL) in accordance with the National Water Act – NWA (Act 36 of 1998) – Listed Water Uses
    - Section 21(c) and Section 21(i).

JOSHCO wishes to construct a new housing development in Randburg. As part of the development approval process, Johannesburg Water (JW) requires that JOSHCO upgrades portions of the existing sewer infrastructure to comply with their masterplan requirements. The proposal is to install a new sewer infrastructure adjacent to the existing system with the existing system being kept operational. The sewer infrastructure will be installed within the existing road servitude from Jan Smut Avenue to Bordeaux Riverside Park, tracking through Valley Road and Garden Road. Before the proposed sewer infrastructure connects to an existing sewer infrastructure manhole which is located on the other side of Bordeaux Riverside Park, the pipeline will cross the Braamfontein Spruit stream, alongside the existing pipe. The proposed sewer pipeline infrastructure will involve the installation of a new uPVC Class 34 pipeline with an internal diameter of between 200mm to 360mm.

The proposed crossing of the Braamfontein Spruit stream requires an EA and WUL. The crossing falls within portion 44 of the Farm Klipfontein 203 IR, portion 26 of Farm 41 IR and portion 8 of Farm 42 IR (Bordeaux Riverside Park). The start, middle and end points for the pipeline through the Bordeaux Riverside Park is as follows:

Start: 26° 5'57.20"S, 28° 1'4.91"E;

Middle: 26° 5'5.56"S, 28° 1'12.89"E; and

End: 26° 5'59.75"S, 28° 1'18.48"E.

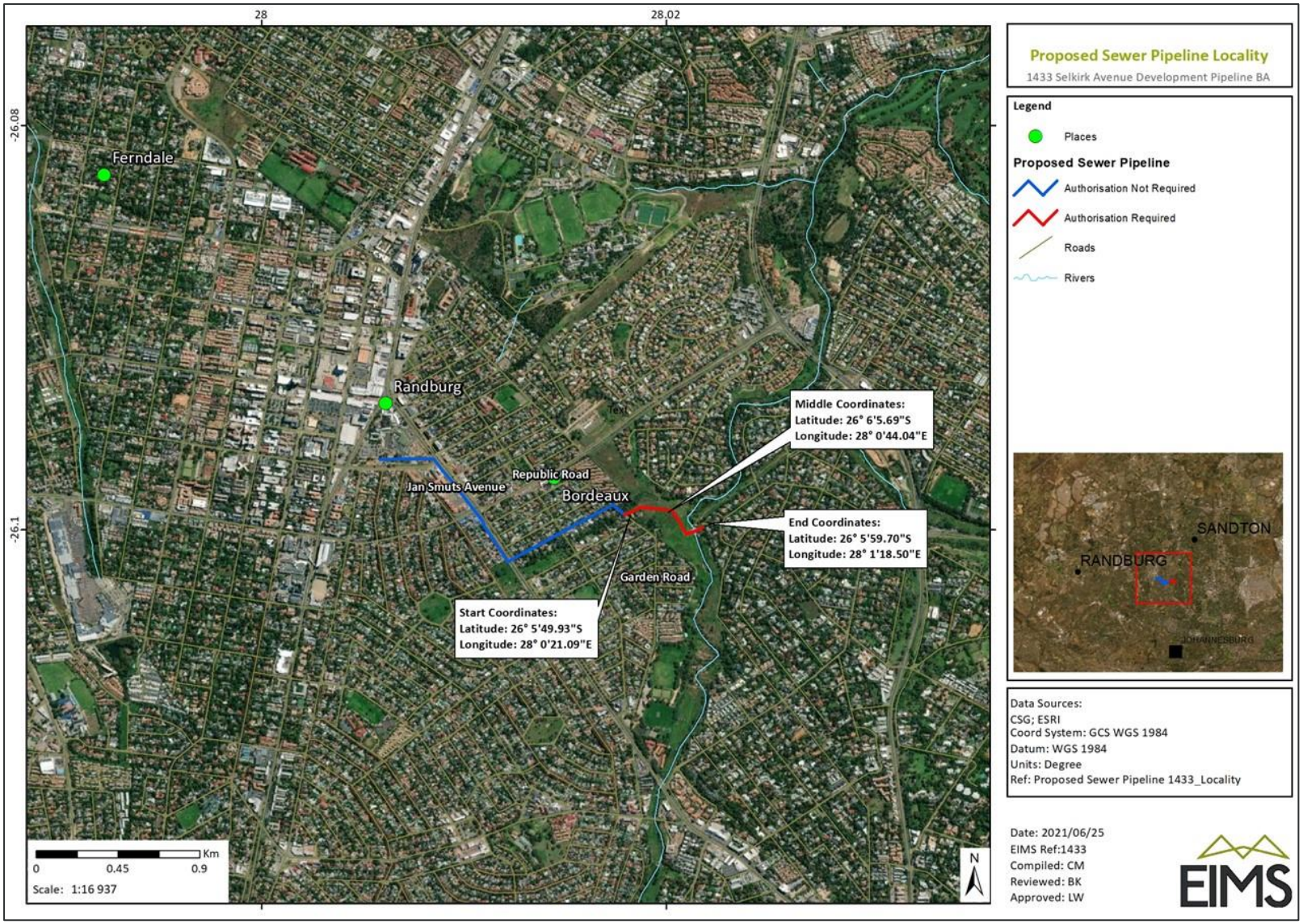

Figure 1: Locality map showing the proposed project site.

2 REPORT STRUCTURE

This report has been compiled in accordance with the EIA Regulations, 2014 (Government Notice (GN) R982). A summary of the report structure, and the specific sections that correspond to the applicable regulations, is provided in Table 1 below.

Table 1: Report Structure

Environmental Regulation	Description	Section in Report
NEMA EIA Regulations 2014 (as amended)		
Appendix 1(3)(a):	Details of – The EAP who prepared the report; and The expertise of the EAP, including a curriculum vitae;	Section 3
Appendix 1(3)(b):	The location of the activity, including: The 21-digit Surveyor General code of each cadastral land parcel; Where available, the physical address and farm name; and Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section B (5.2)
Appendix 1(3)(c):	A plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is – A linear activity, a description, and coordinates of the corridor in which the proposed activity or activities is to be undertaken; On land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Section B (5) Appendix A Appendix C
Appendix 1(3)(d):	A description of the scope of the proposed activity, including – All listed and specified activities triggered and being applied for; and A description of the activities to be undertaken including associated structures and infrastructure;	Section A (4.1) Section A (4.2)

Environmental Regulation	Description	Section in Report
Appendix 1(3)(e):	A description of the policy and legislative context within which the development is proposed including – 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 How the proposed activity complies with and responds to the legislation and policy context plans, guidelines, tools frameworks, and instruments;	Section A (4.2)
Appendix 1(3)(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;	Section E (0)
Appendix 1(3)(g):	A motivation for the preferred site, activity and technology alternative;	Section A (4.3)
Appendix 1(3)(h):	A full description of the process followed to reach the proposed alternative within the site, including: Details of all the alternatives considered; Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; 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; The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage, and cultural aspects; 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 – Can be reversed; May cause irreplaceable loss of resources; and Can be avoided, managed or mitigated; 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;	Section A (4.3) Section C (6) Appendix E Appendix I

Environmental Regulation	Description	Section in Report
	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; The possible mitigation measures that could be applied and level of residual risk; The outcome of the site selection matrix; If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and A concluding statement indicating the preferred alternatives, including preferred location of the activity;	
Appendix 1(3)(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 – A description of all environmental issues and risks that were identified during the environmental impact assessment process; and 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;	Section E (8) Appendix I
Appendix 1(3)(j):	An assessment of each identified potentially significant impact and risk, including – Cumulative impacts; The nature, significance and consequence of the impact and risk; The extent and duration of the impact and risk; The probability of the impact and risk occurring; The degree to which the impact and risk can be reversed; The degree to which the impact and risk may cause irreplaceable loss of resources; and The degree to which the impact and risk can be mitigated;	Section E (8.4) Appendix I

Environmental Regulation	Description	Section in Report
Appendix 1(3)(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;	Section E (8.6)
Appendix 1(3)(l):	An environmental impact statement which contains – A summary of the key findings of the environmental impact assessment; 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 indicting any areas that should be avoided, including buffers; and A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	Section E (8.5) Section E (8.6) Appendix A
Appendix 1(3)(m):	Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of proposed impact management outcomes for the development for inclusion in the EMPR;	Section E (8.6) Appendix H
Appendix 1(3)(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 E (8)
Appendix 1(3)(o):	A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section E (8)
Appendix 1(3)(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)
Appendix 1(3)(q):	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, and the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A
Appendix 1(3)(r):	An undertaking under oath or affirmation by the EAP in relation to- The correctness of the information provided in the reports; The inclusion of comments and inputs from stakeholders and I&Ps;	Appendix I

Environmental Regulation	Description	Section in Report
	The inclusion of inputs and recommendations from the specialist reports where relevant; and 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;	
Appendix 1(3)(s):	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
Appendix 1(3)(t):	Any specific information that may be required by the competent authority; and	N/A
Appendix 1(3)(u):	Any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

3 DETAILS OF THE EAP

The contact details of the EIMS Environmental Assessment Practitioner (EAP) are presented in Table 2 below:

Table 2: Details of the EAP

EAP	Project Responsibility	Experience
Liam Whitlow	Environmental Assessment Practitioner	1. EDUCATION AND QUALIFICATIONS: • BSc Honours Environmental Management; Rand Afrikaans University (now University of Johannesburg), 2000 • Higher Certificate in Project Management; Damelin Business School, 2001. • ISO 14001 Auditor Training; BVQI, 2003. • Environmental Monitoring- Fallout Dust Training; Dustwatch, 2014. • Aquifer Hydraulics and Groundwater Monitoring Certificate Course; North West University, 2014. • Carbon Footprint Analyst Course; Terra Firma Academy, 2017. 2. MEMBERSHIP IN PROFESSIONAL SOCIETIES: • Registered Environmental Assessment Practitioner: Number 2019/222 • Registered Professional Natural Scientist (SACNASP- #400148/08). • Member of Land Rehabilitation Society of Southern Africa (LaRSSA). 3. KEY EXPERIENCE: An environmental scientist with in excess of 17 years of experience. His key experience includes: • Project management of large complex Environmental Impact Assessments (including EIA's within the Public Private Partnership Process Framework); • Compiling and reviewing EIA documentation for large and complex EIA's; • Environmental Mining Rights and Permits; • Site Assessments/Audits; • Strategic Environmental Assessment; • NEMA S24 (G) Rectification Applications; • Environmental Management Plans; • Environmental legal registers for ISO 14001; and • Planning, design, and implementation of environmental monitoring programmes .

In terms of Regulation 13 of the EIA Regulations, 2014, an EAP must be appointed by the applicant to manage the application. EIMS has been appointed as the EAP and is compliant with the definition of an EAP as defined in Regulations 1 and 13 of the EIA Regulations and Section 1 of the NEMA. This includes, inter alia, the requirement that EIMS is:

- Objective and independent;
- Has expertise in conducting EIA's;
- Comply with the NEMA, the Regulations and all other applicable legislation;
- Takes into account all relevant factors relating to the application; and
- Provides full disclosure to the applicant and the relevant environmental authority.

EIMS is a private and independent environmental management-consulting firm that was founded in 1993. EIMS has in excess of 27 years' experience in conducting EIAs. The declaration of independence of the EAP and the Curriculum Vitae (indicating the experience with environmental impact assessment and relevant application processes) of the consultants that were involved in the BAR process and the compilation of this report are attached as Appendix I.

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 1/2022)

Kindly note that:

This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.

This template is current as of April 2022. It is the responsibility of the EAP to ascertain whether subsequent versions of the template have been published or produced by the competent authority.

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.

A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority (uploaded to the EIA online system) empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application. The EIA online system can be accessed at https://eia.gauteng.gov.za.

A copy (PDF) of the final report and attachments must be uploaded to the EIA online system. The EIA online system can be accessed at https://eia.gauteng.gov.za.

Draft and final reports submitted in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) must be emailed to environmentsue@gauteng.gov.za.

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.

Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.

An incomplete report may lead to an application for environmental authorisation or Waste Management License being refused.

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 authorization or Waste Management License being refused.

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 or Waste Management License being refused.

The applicant must fill in all relevant sections of this form. Incomplete applications will not be processed. The applicant will be notified of the missing information in the acknowledgement letter that will be sent within 10 days of receipt of the application.

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.

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 Sustainable Utilisation of the Environment (SUE) Branch

P.O. Box 8769

Johannesburg

2000

Ground floor, Umnotho House, 56 Eloff Street, Johannesburg

Administrative Unit telephone number: (011) 240 3051/3052

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.

This Basic Assessment Report will be submitted within 90 days of receipt of the application by the competent authority in compliance with the timeframes specified in the NEMA EIA Regulations

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.

A closure plan has not been included in this report as it is currently not applicable for the proposed activity. Should a decision ever be taken, or a need arise to decommission the pipeline, an application for decommissioning and closure will 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

If no, state reasons for not attaching the list.

A list of all identified Interested and Affected Parties (I&APs) including State Departments administering a law relating to a matter likely to be affected has been included in the Public Participation Report (PPR) attached to this report

Have State Departments including the competent authority commented?	NO

If no, why?

The Basic Assessment Report (BAR) has been made available for review and comment by all state departments administering a law related to the application. Once comments have been received if any, this section will be updated prior to submission of the final report.

4 SECTION A: ACTIVITY INFORMATION

4.1 PROPOSAL OR DEVELOPMENT DESCRIPTION

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

Sewer Pipeline for the Proposed Selkirk Avenue Housing Development

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

The National Water Act (NWA), Act No. 36 of 1998, is also applicable as the sewer pipeline crosses the Braamfontein Spruit and will impact on the flow of the river. The Department of Human Settlements, Water and Sanitation (DHSWS) is the competent authority in this regard. A Water Use License application will be made to the DHSWS in terms of Section 40 of the NWA, 1998 (Act No. 36 of 1998) for water uses as defined in Section 21(c) and Section 21(i). The following water uses are applicable to the proposed activity, which would require a GA registration or WULA from the DHSWS.

NWA Section 21 Water Uses	Applicability to This Project
21 c) Impeding or diverting the flow of water in a watercourse	The upgrade of the pipeline will impede or divert the flow of water in a watercourse (including any activities within 500m of any wetland).
21 i) Altering the bed, banks, course or characteristics of a watercourse	The upgrade of the pipeline interventions will alter the beds, banks, course or characteristics of a watercourse.

If yes, have you applied for the authorisation(s)?	YES	
If yes, have you received approval(s)? (attach in appropriate appendix)		NO

4.2 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:

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	1998
Environment Conservation Act, 1989 (Act No. 73 of 1989)	National & Provincial	1989
National Water Act, 1998 (Act No. 36 of 1998).	National & Provincial	1998
Environmental Impact Assessment (EIA) Regulations, 2014 (GN R. 982)	National & Provincial	2014
Water Use License Application and Appeals Regulations, 2017	National & Provincial	2017
The National Environmental Management: Waste Management Act 59 of 2008	National & Provincial	2008
The National Environmental Management Air Quality Act, 2004 (Act No 39 of 2004)	National & Provincial	2004
National Heritage Resources Act (No. 25 of 1999)	National & Provincial	2004
National Environmental Management: Biodiversity Act 2004 (Act No. 10 of 2004)	National & Provincial	1983
National Environmental Management Protected Areas Act (Act No. 57 of 2003)	National & Provincial	2003
Conservation of Agricultural Resources Act (Act 43 of 1983)	National & Provincial	1983
Spatial Planning and Land Use Management Act (Act 16 of 2013)	National & Provincial	2013
Gauteng Province Environmental Management Framework	Provincial	2018
Gauteng Conservation-Plan 3.3 (2011)	Provincial	2011

Description of compliance with the relevant legislation, policy or guideline:	
Legislation, policy of guideline	**Description of compliance**
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	NEMA outlines provisions regarding an obligation to conduct environmental impact assessments for certain proposed activities. The proposed Selkirk Avenue Development project requires environmental authorisation for activities listed under GN R. 983 and GN R. 985 of the EIA Regulations, as amended (See Section 3 for the specific listed activities). Therefore, a Basic Assessment process is being followed to obtain authorization from the GDARD.
National Water Act, 1998 (Act No. 36 of 1998).	The proposed sewer pipeline will traverse certain watercourses (rivers/ streams and wetland). The DHSWS is the competent authority to this regard. A WUL application will be made to the DHSWS in terms of Section 40 of the NWA, 1998 (Act No. 36 of 1998) for water uses as defined in Section 21(c) and Section 21(i).
Water Use License Application and Appeals Regulations, 2017	The proposed project constitutes Water Uses in terms of Section 21 of the National Water Act (Act No. 36 of 1998). A GA registration or WULA will have to be undertaken for the proposed project.
The National Environmental Management: Waste Management Act 59 of 2008	The Act ensures that consideration be given to all reasonable measures for prevention of pollution and managing waste in such a manner that it does not endanger health or the environment. The applicant through its representatives or sub-contractors has a responsibility of ensuring all waste generated during the construction and operational phases of the proposed Selkirk Avenue Development Project managed appropriately.
The National Environmental Management Air Quality Act, 2004 (Act No 39 of 2004)	The proposed project may cause the generation of dust, noise disturbances and unwanted odours during the construction phase and the operational phase therefore the Air quality act will be applicable as it sets out measures with regards to dust, noise and unwanted odours.
National Heritage Resources Act (No. 25 of 1999)	The Act is for protection and preservation of heritage resources and artefacts. No heritage resources were identified on site however should any be discovered during construction they are protected in terms of the NHRA
National Environmental Management: Biodiversity Act 2004 (Act No. 10 of 2004)	The Act ensures protection of species and ecosystems that warrant national protection and the sustainable

Description of compliance with the relevant legislation, policy or guideline:	
Legislation, policy of guideline	**Description of compliance**
	use of indigenous biological resources. The proposed sewer pipeline mostly crosses Important Critical Biodiversity Areas to the northeast and Undefined Areas to the southwest of the project area. The pipeline traverses some Ecological Support Areas.
Environmental Impact Assessment (EIA) Regulations, 2014 (GN R. 982)	The proposed Selkirk Avenue Development project requires environmental authorisation for activities listed under GN R. 983 and GN R. 985 of the EIA Regulations, as amended (See Section 3 for the specific listed activities). Therefore, a Basic Assessment process is being followed to obtain authorization from the GDARD.
Gauteng Province Environmental Management Framework (GPEMF)	A basic assessment process for the environmental authorisation application is being followed and the GPEMF has been used to identify any development incentives, restrictions, exclusions, or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site.
Gauteng Provincial Environmental Management Framework Revised in 2014	The southwestern and northeastern parts of the proposed pipeline fall within Zone 1 of the GP EMF. This zone is predestined for urban development.
Gauteng Conservation-Plan 3.3 (2011)	The GP C-Plan was spatially investigated for the proposed project area. The proposed sewer pipeline mostly crosses Important Critical Biodiversity Areas to the northeast and Undefined Areas to the southwest of the project area. The pipeline traverses some Ecological Support Areas.

4.3 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

An assessment of the feasible and reasonable alternatives was undertaken in line with the definition of alternatives contained in GNR 982. This assessment is presented below:

(a) **Location Alternatives:** Property on which or location where the activity is proposed to be undertaken.

Due to engineering considerations and in order to avoid use of pump stations, the best location for the pipeline is adjacent to the existing sewer pipeline within the existing pipeline and road servitude. The most feasible location for the pipeline to cross the stream is at the proposed location as the manhole which the pipeline needs to connect to is just a few meters from this location. As such, no alternative property or location alternative is feasible in this instance as the proposed upgrade will be installed in an existing servitude.

(b) **Activity Alternatives:** Type of activity to be undertaken.

Johannesburg Social Housing Development Company (JOSHCO) wishes to construct a new housing development in Randburg. As part of the development approval process, Johannesburg Water (JW) requires that JOSHCO upgrades portions of the existing sewer infrastructure to comply with their masterplan requirements. The proposal is to install a new sewer infrastructure adjacent to the existing system with the existing system being kept operational.

Alternatives such as a septic tank and French drain system could be considered however, due to the long term maintenance costs and high risk of environmental contamination if not maintained correctly, this option was not further assessed during this process. The sewer pipeline is the only feasible and reasonable alternative given that there is an already existing pipeline, and the proposed pipeline is required to increase the capacity of the existing system. No other activity alternatives have been considered.

(c) **Layout Alternatives:** Design or layout of the activity;

Alternatives such as a septic tank and French drain system could be considered however, due to the long term maintenance costs and high risk of environmental contamination if not maintained correctly, this option was not further assessed during this process.

The proposed sewer pipeline infrastructure will involve the installation of a new uPVC Class 34 pipeline with an internal diameter of between 200mm to 360mm. The installation of the pipeline will be undertaken as follows:

- Road: Traditional open trench excavation; and
- Watercourse: The sewer line is designed to lay on the riverbed alongside the existing sewer line. This results in minimum excavation to the rocky bed save for the outcropped areas which would be reinstated using the concrete. Details also include in drawings issued.

Figure 2 below shows the construction of the sewer pipeline across the Braamfontein Spruit. While Figure illustrates how the pipeline will cross the Braamfontein Spruit, Majority of the pipeline route will be trenched as illustrated in Appendix A and Appendix C. It is anticipated that the width of the trench for the pipeline will be between 800mm to 960mm wide depending on the pipeline size chosen (Width = 300mm side allowance + pipe diameter + 300mm side allowance). Within the protected Bordeaux Riverside Park area, the trench depth will be approximately 3.0 meters from the surface at its deepest point and 2.0 meters at its shallowest point, flatulating based on the terrain encountered.

An additional alternative was also considered which involves the pipeline spanning the area which crosses wetlands. This was considered alongside potential impacts. The potential impacts associated with this alternative were far more, including impacts, not only on the wetland albeit minimised, but also on pre-existing land uses, visuals, as well as involving additional risks such as potential damage with the infrastructure being suspended as opposed to being laid in concrete.

(d) **Technology to be used in the activity**; or

The proposed sewer pipeline infrastructure upgrade will involve the installation of a new uPVC Class 34 pipeline with an internal diameter of between 200mm to 360mm. No alternative technologies were considered in this assessment as a uPVC Class 34 pipeline is considered the standard practice for a sewer pipeline. Therefore, no technology alternatives were considered further in this assessment.

(e) **Operational aspects of the activity.**

Operationally, the sewer pipeline infrastructure will remain stationary and affixed to the site. Once installed, they are permanent. Therefore, no feasible or reasonable operational aspect alternatives are considered in this assessment.

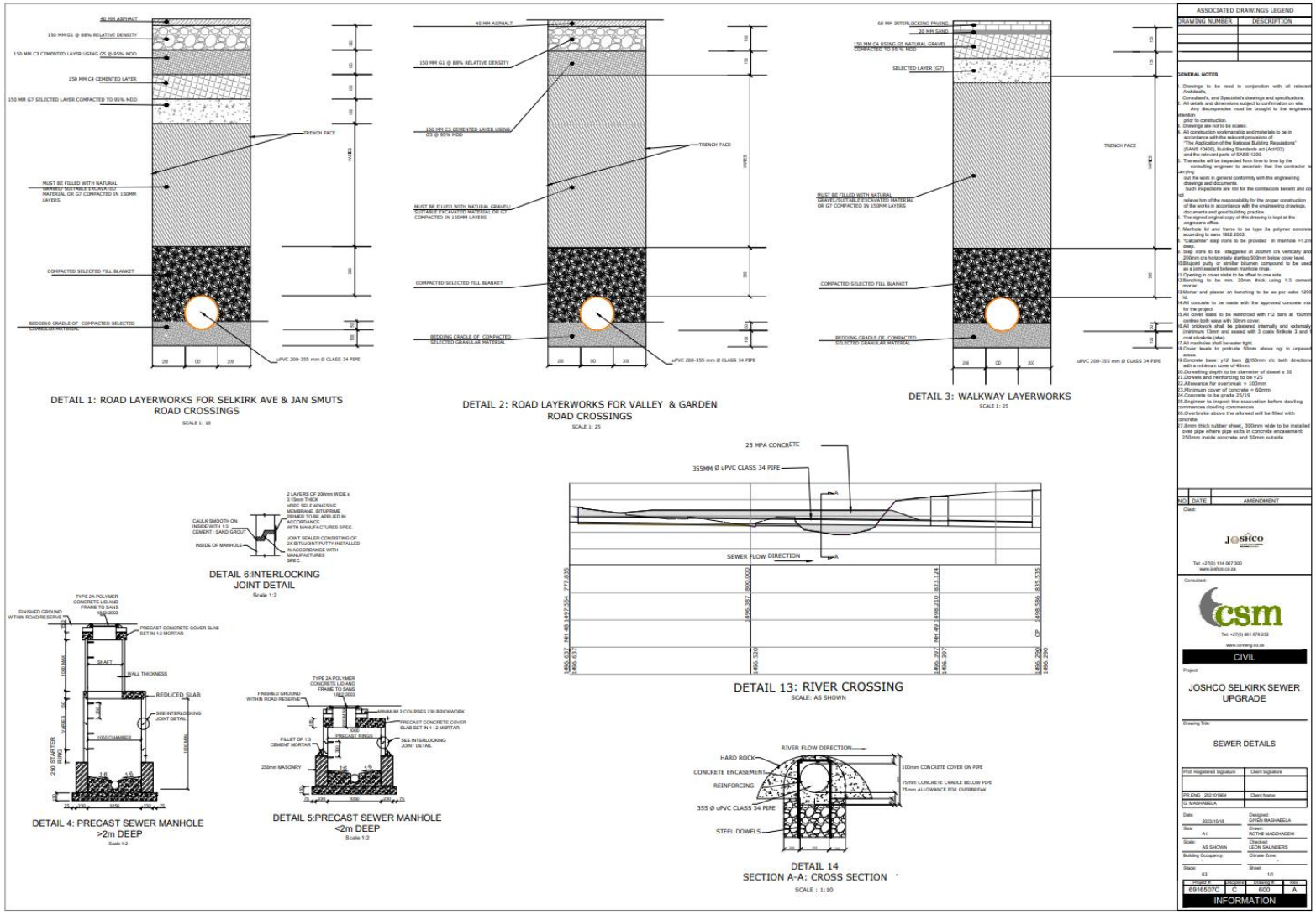

Figure 2: Proposed Layout of Activity

Provide a description of the 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	The proposed project, considered a linear activity, involves the addition of a new pipeline to the existing pipeline servitude in order to increase capacity to effectively service the surrounding neighbourhoods. The old sewer pipeline has reached its full capacity and regularly overflows at the manholes, leaking from certain parts along its route, polluting the environment. The new proposed pipeline will follow the same ~20 km route as the old pipeline. As the project involves the installation of a new sewer pipeline adjacent to the existing sewage pipeline, the development footprint will be localised around the existing pipeline, minimising the potential environmental impact. Therefore, no alternatives other than the proposal and the no-go option will be considered as part of the EA application. Refer to Figure 1 for the site locality. Included in Figure 1 is a mapping out of the two key sections of the pipeline. As highlighted, majority of the pipeline does not trigger any Listed Activities. However, the EA and requirements for this assessment is applicable to the section of the pipeline which intersects with wetlands and watercourses, as illustrated. Numerous properties are involved along the pipeline route, where the proposed pipeline will mostly be following a road servitude within urban areas and open fields.
2	**Alternative 1**	

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

The proposed sewer pipeline is planned to supplement the existing sewer pipeline for a new proposed developments in the area. The locality of the proposed pipeline route makes it most desirable for the proposed installation, satisfying the need for such an upgrade. Alternatives such as a septic tank and French drain system could be considered however, due to the long-term maintenance costs and high risk of environmental contamination if not maintained correctly, this option was not further assessed during this process. The sewer pipeline is the only feasible and reasonable alternative given that there is an already existing pipeline, and the proposed pipeline is required to increase the capacity of the existing system.

4.4 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:
Proposed activity (Total environmental (landscaping, parking, etc.) and the building footprint)	[redacted]
Alternatives:	
Alternative 1 (if any)	[redacted]
Alternative 2 (if any)	
	Ha/ m^2

or, for linear activities:

	Length of the activity:
Proposed activity	~0.5km
Alternatives:	
Alternative 1 (if any)	[redacted]
Alternative 2 (if any)	
	m/km

	Size of the site/servitude:
Proposed activity	~1m servitude
Alternatives:	
Alternative 1 (if any)	[redacted]
Alternative 2 (if any)	
	Ha/m^2

4.5 SITE ACCESS

Proposal

Does ready access to the site exist, or is access directly from an existing road?	YES [redacted]
If NO, what is the distance over which a new access road will be built	m

Describe the type of access road planned:

[redacted]

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).

Alternative 1

Does ready access to the site exist, or is access directly from an existing road? [redacted]

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

Describe the type of access road planned:

[redacted]

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 | **0** | Number of times

(only complete when applicable)

4.6 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.

4.7 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.

4.8 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.

5 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- Similar environment over a short distance.	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	(complete only when appropriate)

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

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

All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B Section of Route		(complete only when appropriate for above)

Section B – Location/route Alternative No.	[redacted]	(complete only when appropriate for above)

5.1 PROPERTY DESCRIPTION

Property description: (Including Physical Address and Farm name, portion etc.)	The proposed activity will fall on portion 44 of the Farm Klipfontein 203 IR, Portion 59 of Farm Driefontein 41, portion 26 of the Farm Driefontein 41 and Portion 8 of Farm Zandfontein 42. The pipeline will cross the Braamfontein Spruit Watercourse on portion 26 of the Farm Driefontein 41.

5.2 ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in 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):**
□ Starting point of the activity	[redacted]	[redacted]
□ Middle point of the activity	[redacted]	[redacted]
□ End point of the activity	[redacted]	[redacted]

In the case of linear activities:

Alternative:	**Latitude (S):**	**Longitude (E):**
• Starting point of the activity (Proposed Pipeline Section 1)	26° 5'57.20"S	28° 1'4.91"E
• Middle point of the activity (Proposed Pipeline Section 1)	26° 5'5.56"S	28° 1'12.89"E
• End point of the activity (Proposed Pipeline Section 1)	26° 5'59.75"S	28° 1'18.48"E

Alternative:	**Latitude (S):**	**Longitude (E):**
• Starting point of the activity	[redacted]	[redacted]
• Middle point of the activity	[redacted]	[redacted]
• End point of the activity	[redacted]	[redacted]

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	0

The 21 digit Surveyor General code of each cadastral land parcel

Proposal	T	0	I	R	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	9
Proposal	T	0	I	R	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	8
Proposal	T	0	I	R	0	0	0	0	0	0	0	0	0	2	0	3	0	0	1	0	9
Proposal	T	0	I	R	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	2	6

5.3 GRADIENT OF THE SITE

Indicate the general gradient of the site.

Flat	

5.4 LOCATION IN LANDSCAPE

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

	River front

5.5 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site located on any of the following?

Shallow water table (less than 1.5m deep)	YES
Dolomite, sinkhole or doline areas	YES
Seasonally wet soils (often close to water bodies)	NO
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%)	YES	NO
Any other unstable soil or geological feature		NO
An area sensitive to erosion	YES	

(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

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	**Longitude (E):**
o	o

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

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	**Longitude (E):**
o	o

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

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	**Longitude (E):**
o	o

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

6. Agriculture

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)? NO

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

7. Groundcover

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 % = 90	Natural veld with scattered aliens % =10	Natural veld with heavy alien infestation % =	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % =	Building or other structure % =	Bare soil % =

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		NO

If YES, specify and explain:

No rare or endangered flora or fauna species where recorded on site. This was primarily due to the site being recently burnt.

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.		NO

If YES, specify and explain:

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

If YES, specify and explain:

Yes. The Site consists of several wetlands as well as the Braamfontein spruit that the proposed pipeline transverses.

Was a specialist consulted to assist with completing this section	YES	NO

If yes complete specialist details

Name of the specialist:	The Biodiversity Company		
Qualification(s) of the specialist:	Ecology and Wetland Specialist		
Postal address:	777 Peridot Street, Juskei Park		
Postal code:	2153		
Telephone:	081 319 1125	Cell:	
E-mail:	info@thebiodiversitycompany.com	Fax:	086 527 1965

Are any further specialist studies recommended by the specialist?		NO
If YES, specify:		
If YES, is such a report(s) attached?		

If YES list the specialist reports attached below

Signature of specialist:	*Refer to specialist report.*	Date:		
Was a specialist consulted to assist with completing this section	YES	NO		

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 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	
Other land uses (describe):				

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	1	1	1	1
1	2	2	2	1
1	2		2	1
1	2	2	2	1
1	1	1	1	1

WEST EAST = Site

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

Ecological and Wetland Impact Assessment and Heritage Impact Assessment.

5.6 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 proposed project is situated in Randburg within Region B, Ward 102 of City of Johannesburg Municipality, Gauteng Province. The estimated population of the ward is 32 875, representing nine percent (9%) of the population of Randburg. It is composed of 36 percent black, 51 percent white, 9 percent Indian and 3 percent coloured people.

According to StatsSA (2011), Randburg has a total population of 337 053 people, with 73.3 % of the population between the working age (15 -64 years). Randburg has a high population density of 2007 people per square kilometre. In terms of education, 42.6% of persons older than 20 years have obtained higher education and 31% of persons have obtained matric.

According to the latest statistics, StatsSA (2022) suggests that the City of Johannesburg itself has a total population of 4 803 262 people, with 73,1% of the population between working age (15-64 years). This corresponds with the data from the 2011 census. In terms of a finer observation in terms of these data, the 2022 census statistics are yet to be released for the Randburg area specifically.

There are approximately 123 767 households in Randburg, 93% of which are formal dwellings. The average household size is 2.6 persons and 38.3% of households are female headed households.

5.7 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.

Section 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?

[redacted] NO

If YES, explain:

[redacted]

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:

A Heritage Specialist was appointed to conduct a walkthrough of the proposed application area and an heritage exemption letter was produced. No fatal flaws in terms of heritage was identified and no further assessments were required.

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

[redacted] 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

6 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.

6.1 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 [redacted]

If yes, has any comments been received from the local authority?

[redacted] NO

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

[redacted]

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

The report is currently out for public review and comment. This section will be updated post the public review period.

6.2 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):

Comment was received from Johannesburg City Parks and Zoo (JCPZ) with regards to the EIA process. The report is currently out for public review and comment and will be updated post the public participation review period.

If “NO” briefly explain why no comments have been received

6.3 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.

6.4 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

7 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

1) 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

4) Each alterative needs to be clearly indicated in the box below

5) Attach the above documents in a chronological order

Section D has been duplicated for alternatives	0	times

(complete only when appropriate)

Section D Alternative No.	0	(complete only when appropriate for above)

7.1 WASTE, EFFLUENT, AND EMISSION 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?	Waste from the installation of the pipeline will occur only during the installation phase.

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

During the construction phase of the activity is anticipated that small amounts of solid waste may be produced from the construction camp site, this would include general waste (such as plastic, papers, etc.), such general waste will be disposed of at an approved licenced landfill site.

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

Any construction inert waste (such as concrete, rubble, etc.) that may be encountered from removal of existing services and construction works should be disposed of at an approved licenced spoil site by the appointed contractor.

Will the activity produce solid waste during its operational phase? NO

If yes, what estimated quantity will be produced per month? 0 m^3

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

No solid waste is anticipated during the operational phase of the pipeline. However, any solid waste encountered during maintenance activities will be temporarily stored on site in designated waste skips, these must be monitored to ensure no spillage of waste into the environment, appropriately labelled (for waste separation) and closable waste bins should be used. The waste will be regularly transported offsite to a registered landfill or spoil site if not re-used during construction. Disposal slips must be collected as proof where available.

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? NO

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

No solid waste is anticipated during the operational phase of the pipeline

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? NO

If yes, inform the competent authority and request a change to an application for scoping and EIA.

It is not expected that any hazardous waste will be generated as part of construction or normal operational activities. If any hazardous waste is to be generated it will be disposed of at a registered and licensed hazardous waste facility.

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

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

Throughout construction, waste will be separated at source into recyclable and non-recyclable materials and distributed for recycling where possible. The construction inert waste (concrete, rubble, etc.) may be re-used as fill material where relevant/possible, this will minimize the amount of waste to be disposed at municipal waste facility.

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?	
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?	Yes NO
If yes, what estimated quantity will be produced per month?	m^3

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

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

If yes, provide the particulars of the facility:

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

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

Due to the nature of the project will not produce any wastewater.

Liquid effluent (domestic sewage)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?	YES / NO
If yes, what estimated quantity will be produced per month?	During construction, portable toilets will be deployed for construction workers.
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 off.	

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?	NO
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, a minimal amount of emissions may be realized from construction vehicles and moving plant exhausts in small quantities. This is only limited to the construction and not the operation phase of the project.

7.2 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 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:

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

The project proposed sewer pipeline will cross a river and certain wetlands . The activity thus requires a Section 21 (c) and (i) authorization in terms of the National Water Act, Act No 36 of 1998 from the DHSWS.

If yes, have you applied for the water use permit(s)? YES

If yes, have you received approval(s)? (attached in appropriate appendix) NO

7.3 POWER SUPPLY

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

Portable generators will be used to supply power for construction activities. No power is required during the operation stage of the stormwater discharge infrastructure.

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

7.4 ENERGY EFFICIENCY

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

All machinery or construction plant which requires a power supply will be switched off when not in use.

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

Due to the nature of the project no alternative sources of energy have been considered. The project is for the installation of a sewer pipeline.

8 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).

8.1 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

Comments raised by JCPZ with regards to the EIA process for the proposed project.

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):

Issues raised were addressed in a transparent manner and included in the compilation of the Basic Assessment Report for the Proposed Project. Issues raised were used quantitatively to calculate the significance of impacts both real and perceived and to provide further suggestions and recommendations with regard to potential management options for impacts. The Public Participation Process (PPP) is still ongoing and more comments will be received during the 30 day Public Review and Comment of the BAR

8.2 IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

Briefly describe the methodology utilised in the rating of significance of impacts

The impact significance rating methodology, as presented herein and utilised for all EIMS Impact Assessment Projects, is guided by the requirements of the NEMA EIA Regulations 2014 (as amended). The broad approach to the significance rating methodology is to determine the environmental risk (ER) by considering the consequence (C) of each impact (comprising Nature, Extent, Duration, Magnitude, and Reversibility) and relate this to the probability/ likelihood (P) of the impact occurring. The ER is determined for the pre- and post-mitigation scenario. In addition, other factors, including cumulative impacts and potential for irreplaceable loss of resources, are used to determine a prioritisation factor (PF) which is applied to the ER to determine the overall significance (S). The impact assessment has been applied to all identified alternatives.

Determination of Environmental Risk

The significance (S) of an impact is determined by applying a prioritisation factor (PF) to the environmental risk (ER). The environmental risk is dependent on the consequence (C) of the particular impact and the probability (P) of the impact occurring. Consequence is determined through the consideration of the Nature (N), Extent (E), Duration (D), Magnitude (M), and Reversibility (R) applicable to the specific impact.

For the purpose of this methodology the consequence of the impact is represented by:

$$\boldsymbol{C = \frac{(E + D + M + R) * N}{4}}$$

Each individual aspect in the determination of the consequence is represented by a rating scale as defined in Table 3 below.

Table 3: Criteria for Determining Impact Consequence

Aspect	Score	Definition
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e., within the development property boundary)
	3	Local (i.e., the area within 5 km of the site)
	4	Regional (i.e., extends between 5 and 50 km from the site)
	5	Provincial / National (i.e., extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years)
	3	Medium term (6-15 years)
	4	Long term (15-65 years, the impact will cease after the operational life span of the project)
	5	Permanent (>65 years, no mitigation measure of natural process will reduce the impact after construction)
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected)
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected)
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way, moderate improvement for +ve impacts)
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease, high improvement for +ve impacts)
	5	Very high / don't know (where natural, cultural, or social functions or processes are altered to the extent that it will permanently cease, substantial improvement for +ve impacts)
Reversibility	1	Impact is reversible without any time and cost.
	2	Impact is reversible without incurring significant time and cost.
	3	Impact is reversible only by incurring significant time and cost.
	4	Impact is reversible only by incurring prohibitively high time and cost.

	5	Irreversible Impact.

Table 4: Probability Scoring

Probability	1	Improbable (the possibility of the impact materialising is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),

The result is a qualitative representation of relative ER associated with the impact. ER is therefore calculated as follows:

$$\boldsymbol{ER = C\ x\ P}$$

Table 5: Determination of Environmental Risk

Consequence	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
	Probability					

The outcome of the environmental risk assessment will result in a range of scores, ranging from 1 through to 25. These ER scores are then grouped into respective classes as described in Table 6.

Table 6: Environmental Risk Scores

ER Score	Description
<9	Low (i.e., where this impact is unlikely to be a significant environmental risk/ reward).
≥9 ≤17	Medium (i.e., where the impact could have a significant environmental risk/ reward),
>17	High (i.e., where the impact will have a significant environmental risk/ reward).

The impact ER has been determined for each impact without relevant management and mitigation measures (pre-mitigation), as well as post implementation of relevant management and mitigation measures (post-mitigation). This allows for a prediction in the degree to which the impact can be managed/mitigated.

Impact Prioritisation

Further to the assessment criteria presented in the section above, it is necessary to assess each potentially significant impact in terms of:

- Cumulative impacts; and
- The degree to which the impact may cause irreplaceable loss of resources.

To ensure that these factors are considered, an impact prioritisation factor (PF) has been applied to each impact ER (post-mitigation). This prioritisation factor does not aim to detract from the risk ratings but rather to focus the attention of the decision-making authority on the higher priority/significance issues and impacts. The PF has been applied to the ER score based on the assumption that relevant suggested management/mitigation impacts are implemented.

Table 7: Criteria for Determining Prioritisation

Cumulative Impact (CI)	Low (1)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/ definite that the impact will result in spatial and temporal cumulative change.
Irreplaceable Loss of Resources (LR)	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.
	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).

The value for the final impact priority is represented as a single consolidated priority, determined as the sum of each individual criteria represented in Table 7. The impact priority is therefore determined as follows:

$$\boldsymbol{Priority = CI + LR}$$

The result is a priority score which ranges from 2 to 6 and a consequent PF ranging from 1 to 1.5 (Refer to Table 8

Table 8: Determination of Prioritisation Factor

Priority	Prioritisation Factor
2	1
3	1.125

4	1.25
5	1.375
6	1.5

In order to determine the final impact significance, the PF is multiplied by the ER of the post mitigation scoring. The ultimate aim of the PF is an attempt to increase the post mitigation environmental risk rating by a factor of 0.5, if all the priority attributes are high (i.e., if an impact comes out with a high medium environmental risk after the conventional impact rating, but there is significant cumulative impact potential and significant potential for irreplaceable loss of resources, then the net result would be to upscale the impact to a high significance).

Table 9: Final Environmental Significance Rating

Significance Rating	Description
<-17	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).
≥-17, ≤-9	Medium negative (i.e. where the impact could influence the decision to develop in the area).
>-9, < 0	Low negative (i.e., where this impact would not have a direct influence on the decision to develop in the area).
0	No impact
>0, <9	Low positive (i.e., where this impact would not have a direct influence on the decision to develop in the area).
≥9, ≤17	Medium positive (i.e., where the impact could influence the decision to develop in the area).
>17	High positive (i.e., where the impact must have an influence on the decision process to develop in the area).

The significance ratings and additional considerations applied to each impact has been used to provide a quantitative comparative assessment of the alternatives being considered. In addition, professional expertise and opinion of the specialists and the environmental consultants has been applied to provide a qualitative comparison of the alternatives under consideration. This process will identify the best alternative for the proposed project.

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.

Table 10: Identified impacts, their significance and proposed mitigation measure for the proposed project.

Planning Phase

Potential impacts (Planning phase):	Significance rating of impacts (positive or negative):	Proposed mitigation	Significance rating of impacts after mitigation	Risk of the impact and mitigation not being implemented
Temporary disturbance of wildlife due to increased human presence and possible use of machinery and/or vehicles. As more vehicles will be driving in the area to survey various components of the project, the wildlife will be disturbed. The possible use of heavy machinery can also lead to the trampling of both vegetation and faunal species.	-12	• No heavy machinery must be allowed within the delineated wetland. All excavations must be carried out via manual labour instead of heavy machinery/vehicles; and • Lighter vehicles (small trucks and other vehicles) required for the proposed activities should only be allowed to use existing roads (including dirt roads).	-3.94	Low

Construction Phase

Potential impacts (Construction phase):	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation	Risk of the impact and mitigation not being implemented
Waste management- Waste will be generated as a result of the construction process. Such wastes would typically include solid wastes (construction debris, inert materials-overburden, cement	-12	• A Waste Management Plan (WMP) must be prepared and implemented throughout construction. This Plan must include measures for waste sorting for the purpose of	-8	Low

bags, wrapping materials, timber, cans, wire, nails, food, and other organic wastes, etc); and Liquid wastes (oil, paint, sewage, fuel, etc). The management of waste will be applicable throughout the construction process. It should be noted that irresponsible and uncontrolled waste management can result in severe air, water and soil pollution.		recycling where feasible. The procedure must include a water conservation and management plan which should aim to reduce, and re-use water where possible. A dedicated waste collection and storage facility must be prepared, and this should be emptied and collected wastes disposed of on a regular basis. Wastes must be disposed of at suitably licensed waste disposal facilities. • A dedicated waste collection and storage facility must be prepared, and this should be emptied, and waste disposed of on a regular basis. • Waste must be disposed of at suitably licensed waste disposal facilities. No waste is to be disposed of directly in the local environment. • Adequate refuse facilities (with lids to protect against scavengers) must be placed at all active construction areas and these must be serviced on a regular basis. • Contaminated water, and effluents must be prevented from entering the local		

		environment (soil and water), adequately stored in protected and where necessary bunded areas, and disposed of at a suitably licensed disposal facility. • Each active construction site must be checked daily to ensure that the site is free from litter and unnecessary waste. • Vermin / weatherproof bins must be provided in enough numbers and capacity to store domestic waste. These bins must be kept closed to reduce odour build-up and emptied regularly to avoid overfilling and other associated nuisances. • Proper disposal of waste material in provided waste bins and skips is recommended. Waste bins must be emptied on a regular basis or when full and the collected waste disposed of at a suitably licensed waste disposal site or the municipal disposal site. • Hazardous waste must be kept in correctly sealed storage bins in a shaded and bunded area. Surplus		

		Hazardous materials or substances must be collected into a designated container /containment area and disposed of appropriately. • Safe disposal certificates to be obtained for all hazardous wastes leaving the sites. • Staff should be provided with necessary hazardous waste training. • The SANS 10089-3:2010 must be consulted for best practice guidelines on backfilling and materials to be used for backfilling. If the excavated material complies with these standards, it should be used for backfilling rather than disposal of at a waste management facility. • Waste management must be a priority and all waste must be collected and stored effectively • Litter, spills, fuels, chemicals and human waste in and around the project area. • Refuse bins will be emptied and secured Temporary storage of domestic waste shall be in covered waste skips. Maximum domestic		

		waste storage period will be 10 days. • A minimum of one toilet must be provided per 10 persons. Portable toilets must be pumped dry to ensure the system does not degrade over time and spill into the surrounding area. • The Contractor should supply sealable and properly marked domestic waste collection bins and all solid waste collected shall be disposed of at a licensed disposal facility. Where a registered disposal facility is not available close to the project area, the contractor shall provide a method statement with regards to waste management. Under no circumstances may domestic waste be burned on site.		
Dust Pollution- During the installation of the sewer pipeline dust pollution is anticipated due to clearing of vegetation to prepare for lay down areas and a construction camp. Sensitive receptors around the site (households to the south) are likely to be affected by dust-related impacts during construction. Implementation of suggested mitigation	-10	• Clearance of any landscaped areas must be kept to a minimum and exposed soils must be regularly sprayed should dusty conditions be noted. • Haul vehicles carrying potentially dusty material	-4.08	Low

measures is anticipated to reduce/ minimize the magnitude of this impact.		should be covered with a tarp to prevent dust. • The ambient air quality standard of the National Environmental Management: Air Quality Act must be complied with (GNR 1210 of December 2009), specifically pertaining to particulate matter (PM10). Monitoring must be initiated should any complaints be received. • Where topsoil and sub-soil is removed and stored these must be protected from excessive wind erosion. • Dust-reducing mitigation measures must be put in place and must be strictly adhered to, for all roads and dumps especially. This includes wetting of exposed soft soil surfaces and not conducting activities on windy days which will increase the likelihood of dust being generated.		
Noise Pollution- Noise during construction is expected to be most acute, particularly during earthworks. Trucks delivering building material as well as infrastructure to the site will also generate noise during the construction phase of the	-11	• All construction vehicles must be serviced regularly to control unnecessary noise. • Working hours to be restricted to 07h00 to 18h00 weekdays and 09h00 to	-6.13	Low

proposed project. Suggested mitigation measures should be properly implemented to reduce the magnitude of this impact.		16h00 on weekends. If possible, work should not be done during public holidays and Sundays to prevent nuisance to nearby occupiers. • The Gauteng Province Noise Control Regulations, GN 5479 of 1999 as well as the provisions of SANS 10103, must be complied with must be complied with.		
Employment creation- Positive economic impacts are anticipated during the construction phase of the proposed development. The construction phase of the proposed development will provide employment opportunities to the local community. Employment to be generated during the construction phases is considered a positive impact from the development.	3.5 (Positive Impact)	• Prioritise sub-contracting to local SMEs and un-skilled labour where possible. • Utilise existing community structures if available, to act as a communication link between the local community and the applicant for informing the local community of job opportunities and informing the Applicant of possible contractors in the local community.	13.33 (Positive Impact)	Low
Soil erosion- Soil erosion could potentially occur where stripped vegetation is exposed to rainfall with the resultant washing away of topsoil. Cut and fill embankments, if implemented are also vulnerable to soil erosion. This impact is considered to have a medium	-12	• Should erosion become a problem during construction, then diversion berms and drains should be constructed to divert run-off away from exposed areas.	-6.67	Low

significance provided that correct environmental management practices are implemented.		• Adequate stormwater drainage and management is required to prevent soil erosion.		
Impact on domestic water resources- There is risk that the oils and other hazardous substances used during construction can directly and indirectly enter the local environmental pathways, e.g. surface water, groundwater, and soils if proper mitigation measures are not implemented. This will cause a negative impact on the soil and water resources around the site.	-9.75	• Storage and application of hazardous substances must be done in accordance with best practice standards, and where necessary a bund must be provided. • Hazardous substances must be stored in a secure location, isolated from direct contact with the soils and covered where necessary. • Pollution of the surface water and aquifer is to be prevented at all costs. • A spill response procedure must be prepared and applied. • Concrete, cement and other hazardous substances required during construction must be stored and where applicable mixed on an impermeable layer acting as a barrier to prevent direct contact with soils. • Spillages and excess water from these areas must not be discharged into the environment but contained,	-6.67	Low

		collected and disposed of at a suitably licensed facility. • Ablution facilities (chemical toilets, etc) must be installed according to the relevant manufacturers' specifications, outside of the 1:100-year flood line/drainage lines/ wetlands, and best environmental practice must be maintained to ensure that no pollution from effluents occurs. No releases into the environment should be permitted. • All contaminated effluents, wastes, and soils must be collected and disposed of at a suitably licensed facility. • Vehicles must be maintained to proactively prevent unnecessary spills (fuels, lubricants, etc). • All working fronts must be provided with a spill containment kit to contain and collect spills. • All spills must be reported to the appointed ECO. • A suitable stormwater management plan (SWMP) must be prepared for the		

		construction camp and any facilities utilised for the storage of hazardous substances must be approved by the ECO and the relevant engineer. • Stormwater from the site should be managed effectively in order to avoid pollution of any non-perennial streams/drainage lines.		
Impact on safety and security of surrounding community- The presence of construction workers, but more importantly, the potential influx of criminal opportunists could potentially affect the safety and security of the residents of surrounding households and workers during construction. The proposed site is located in an urban area.	-11	• Contractors and employees shall always be courteous towards landowners, tenants and the local community. • The speed limit on private/ unregulated roads (access roads) should be limited to 20km/h and all traffic rules on regulated roads should be adhered to. • Construction workers must be made aware of their specific responsibilities in terms of the environmental impacts i.e. controlling noise levels, reducing dust, etc. • Construction workers must be made aware that no alcohol/drugs on site and no workers under the influence are permitted on site.	-7	Low

		• Construction workers must be made aware that firearms or traditional weapons will not be allowed on site unless it is for use by approved security. • Construction workers must be made aware that no fires will be permitted on site. • Construction teams should be clearly identified by wearing uniforms and/or wearing identification cards that should be exhibited in a visible place on their body. • Access to the construction site should be controlled.		
Destruction, further loss and fragmentation of the vegetation community The vegetation communities are classed as CR, through site clearing, more of the vegetation communities will be lost. Unmitigated, this will also lead to habitat fragmentation and the establishment of alien invasive species as well as soil erosion. Activities that will contribute to this impact: • Driving/ moving outside of designated areas; • Physical removal of vegetation;	-14	• Proper stripping and stockpiling techniques must be followed. • Concurrent rehabilitation must be carried out rather than full rehabilitation after construction. • Avoid unnecessary vegetation clearing and avoid preferential surface flow paths.	-6.56	Low

• Temporary site establishment (laydown, chemical toilets etc.); • Soil dust precipitation as a result of site establishment; • Dumping of waste products; • Hydrocarbon storage and leakages; and • Random events such as fire (cooking fires or cigarettes).		• Storage of potential contaminants in bunded areas • All contractors must have spill kits available and be trained in the correct use thereof. • All contractors and employees should undergo induction which is to include a component of environmental awareness. The induction is to include aspects such as the need to avoid littering, the reporting and cleaning of spills and leaks and general good "housekeeping". • No cleaning or servicing of vehicles, machines and equipment in water resources. • Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area. • Demarcate footprint areas to be cleared to avoid unnecessary clearing. • Exposed areas must be ripped and vegetated to increase surface roughness.		
Loss of CBA and ESA. Portions of the project area is classified as a CBA, ESA.	-16.25		6.19	Low
Introduction of alien species, especially plants The spread of alien invasive species will result in the loss of habitat and water for indigenous fauna and flora. It can also contribute to the spreading of potentially dangerous diseases due to invasive - and pest species. Overall, the fauna assemblage will be changed. Activities that will contribute to this impact: • Vegetation removal and disturbance of soil; • Vehicles potentially spreading seed; • Unsanitary conditions surrounding infrastructure promoting the establishment of alien and/or invasive; and • Eating area increasing pest species such as rats and flies.	-15		-5.00	Low

Erosion due to storm water runoff and wind Erosion will lead to the loss of vegetation, the removal/ relocation of the topsoil and the destruction of habitat. Activities that will contribute to this impact: • Storm water runoff from roads, and other paved areas; • Vehicles driving outside demarcated areas; • Footpaths outside demarcated areas; • Clearing of vegetation; • Water runoff from areas with bare soil; and • Compacting of roads.	-13	• Reduce the amount of unnecessary people and restrict vehicle access as much as possible on the property by making use of spatial data. • Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further. Clearing of vegetation should be minimized and avoided where possible. Maintain small patches of natural vegetation within the area	-8.44	Low
Displacement of faunal community due to habitat loss, direct mortalities and disturbance (road collisions, noise, light, dust, vibration and poaching). Faunal community will be influenced in a number of ways, including the loss of habitat, disturbances that will either make them move out of the area if possible or have to adapt and possible deaths due to physical harm or indirect harm. Activities that will contribute to this impact: • Clearing of vegetation; • Roadkill due to vehicle collision;	-12	• Areas of indigenous construction site to accelerate restoration and succession of cleared. • All footprints to be rehabilitated and landscaped after construction is complete. Rehabilitation of the disturbed areas existing in the project area must be made a priority. Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and	-7.50	Low

• Pollution of water resources due to dust effects and run-off; • Intentional killing of fauna for food (hunting) or otherwise (killing of snakes); • Disease caused by increased dust levels; • Increase in pest species in the area due to new food source created; and • Vibrations, noise and rock chips skidding out due to the construction activities.		grass species which are endemic to this vegetation type. • High Sensitivity sites/ sensitivity areas. No further loss of high sensitivity areas should be permitted. It is recommended that areas to be developed be specifically demarcated so that during the construction phase, only the demarcated areas be impacted upon (including fencing off the defined project area). • When vegetation is cleared, hand cutting techniques should be used as far possible in order to avoid the use of heavy machinery. • All laydown, chemical toilets etc. should be restricted to least concern sensitivity areas. Any materials may not be stored for extended periods of time and must be removed from the project area once the construction/closure phase has been concluded. No permanent structures should be permitted at drill sites.. • No storage of vehicles or equipment will be allowed		
Potential leaks, discharges, pollutant from machinery and storage leaching into the surrounding environment. Hydrocarbons leaching into the surrounding area will result in the loss of usable water resources, the loss of fauna and flora species. This will also result in the contamination of the topsoil and reduce the likelihood of successful rehabilitation of an area. Activities that will contribute to this impact: • Loss of vegetation; and • Loss of topsoil.	-14		-5.00	Low

		outside of the designated project areas. • Assess the state of Areas that are denuded during construction need to be re-vegetated with Indigenous vegetation to prevent erosion during flood events. This will also reduce the likelihood of encroachment by alien invasive plant species. • Progressive rehabilitation will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank Any woody material removed can be shredded and used in conjunction with the topsoil to augment soil moisture and prevent further erosion. • It should be made an offence for any staff to /take bring any plant species into/out of any portion of the project area. No plant species whether indigenous or exotic should be brought into/taken from the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants.		

		• Any topsoil that is removed during construction must be appropriately removed and stored according to the national and provincial guidelines. This includes on-going maintenance of such topsoil piles so that they can be utilised during decommissioning phases and re-vegetation • A fire action plan needs to be complied and implemented to restrict the impact unplanned fires might have on the surrounding areas. • A qualified environmental control officer must be on site when construction begins to identify faunal species that will be directly disturbed and to relocate fauna/flora that are found during the activities. The Bordeaux Riverside Park area must be walked though prior to construction to ensure no faunal species remain in the habitat and get killed. Should animals not move out of the area on their own relevant specialists must be contacted to advise on how the species can be relocated.		

		• Noise must be kept to an absolute minimum during the evenings and at night surrounding the Bordeaux Riverside Park area to minimize all possible disturbances to amphibian species and nocturnal mammals • No trapping, killing, or poisoning of any wildlife is to be allowed. Signs must be put up to enforce this. • The duration of the construction should be minimized to as short term as possible, to reduce the period of disturbance on fauna. • The footprint area of the construction should be kept to a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas		
Impact on Wetlands	-16.25	• Adhere to the buffer area where relevant. Only essential services, machinery and personnel are permitted within the wetland and buffer for installation of the pipeline;		

		• The contractors used for the construction should have spill kits available prior to construction to ensure that any fuel, oil or hazardous substance spills are cleaned-up and discarded correctly; • All construction activities must be restricted to the development footprint area. This includes laydown and storage areas, ablutions, offices etc.; • During construction activities, all rubble generated must be removed from the site; • Construction vehicles and machinery must make use of existing access routes; • All chemicals and toxicants to be used for the construction must be stored in a bunded area; • All machinery and equipment should be inspected regularly for faults and possible leaks, these should be serviced off-site; • All contractors and employees should undergo induction which is to include a component of		

		environmental awareness. The induction is to include aspects such as the need to avoid littering, the reporting and cleaning of spills and leaks and general good "housekeeping"; • Adequate sanitary facilities and ablutions on the servitude must be provided for all personnel throughout the project area. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the surrounding vegetation); • All removed soil and material stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds; • Any exposed earth should be rehabilitated promptly by planting suitable vegetation (vigorous indigenous grasses) to protect the exposed soil; • No dumping of construction material on site may take place; and		

		• All waste generated on site during construction must be adequately managed. • Separation and recycling of different waste materials should be supported. • The first 300 mm of soil must be stockpiled separate from the soil excavated deeper than 300 mm; and • The proposed pipeline system must be divided up into 100 m intervals. Each interval's soil must be stockpiled and filled back up (in the correct order) to avoid long periods of stockpiling. • A rehabilitation plan must be compiled and implemented for the project, prioritise the wetland and buffer areas.		
Impact on pre-existing land uses within the park, e.g. mountain biking and walking trails, religious and other gatherings.	-6	• Prior to construction, an overall account of on-site observations (existing pathways and trails) and activities must be prepared. • Ensure that safe detours and alternative pathways are created. • Install temporary signage during construction phase to warn the public of the	-3	Low

		potential changes to the area and associated pathways. • Ensure that minimal changes to the landscape are made during construction. • Restore disturbed areas to pre-construction state. • The restoration of the area must correspond with the overall rehabilitation plan to be compiled and implemented.		

Operational Phase

Potential impacts (Operational phase):	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Continued encroachment of an indigenous and CR vegetation community by alien invasive plant species as well as erosion due to disturbed soils	-13	• All contractors and employees should undergo induction which is to include a component of environmental awareness. The induction is to include aspects such as the need to avoid littering, the reporting and cleaning of spills and leaks and general good "housekeeping". • No cleaning or servicing of vehicles, machines and equipment in water resources.	-8.44	Low
Continued displacement and fragmentation of the faunal community (including threatened or protected species) due to ongoing anthropogenic disturbances (noise, dust and vibrations) and habitat degradation/loss (litter, road mortalities and/or poaching).	-15		-8.44	Low

		• All footprints to be rehabilitated and landscaped after construction is complete. Rehabilitation of the disturbed areas existing in the project area must be made a priority. Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and grass species which are endemic to this vegetation type • No further loss of high sensitivity areas should be permitted. It is recommended that areas to be developed be specifically demarcated so that during the construction phase, only the demarcated areas be impacted upon (including fencing off the defined project area). • When vegetation is cleared, hand cutting techniques should be used as far possible in order to avoid the use of heavy machinery. • All construction/operational and access must make use of the existing roads. • All laydown, chemical toilets etc. should be restricted to		

		least concern sensitivity areas. Any materials may not be stored for extended periods of time and must be removed from the project area once the construction/closure phase has been concluded. No permanent structures should be permitted at drill sites.. No storage of vehicles or equipment will be allowed outside of the designated project areas. • Progressive rehabilitation will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank Any woody material removed can be shredded and used in conjunction with the topsoil to augment soil moisture and prevent further erosion. • A hydrocarbon spill management plan must be put in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site. Drip trays or		

		any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when not in use. No servicing of equipment on site unless necessary. All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers • Leaking equipment and vehicles must be repaired immediately or be removed from project area to facilitate repair • Storm Water run-off (flow paths, velocity and effects) monitoring and the water quality. • It should be made an offence for any staff to /take bring any plant species into/out of any portion of the project area. No plant species whether indigenous or exotic should be brought into/taken from the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants. • Any topsoil that is removed during construction must be appropriately removed and		

		stored according to the national and provincial guidelines. This includes on-going maintenance of such topsoil piles so that they can be utilised during decommissioning phases and re-vegetation • A fire action plan needs to be complied and implemented to restrict the impact unplanned fires might have on the surrounding areas. • A qualified environmental control officer must be on site when construction begins to identify faunal species that will be directly disturbed and to relocate fauna/flora that are found during the activities. The Bordeaux Riverside Park area must be walked though prior to construction to ensure no faunal species remain in the habitat and get killed. Should animals not move out of the area on their own relevant specialists must be contacted to advise on how the species can be relocated. • Noise must be kept to an absolute minimum during the evenings and at night surrounding the Bordeaux		

		Riverside Park area to minimize all possible disturbances to amphibian species and nocturnal mammals. • The duration of the construction should be minimized to as short term as possible, to reduce the period of disturbance on fauna. • The areas to be developed must be specifically demarcated to prevent movement of staff or any individual into highly sensitive areas and the surrounding environments, i.e. the wetlands.		
Potential leaks, discharges, pollutant from sewage pipeline overflowing or leak due to damage spreading into the surrounding environment.	-17	• An early overflow alarm system must be installed.	-7.50	Low

No Go

Potential impacts (Construction and operational phases):	**Significance rating of impacts (positive or negative):**	**Proposed mitigation:**	**Significance rating of impacts after mitigation:**	**Risk of the impact and mitigation not being implemented**
Employment creation-		NA		

Employment creation will be negatively impacted if the No Go alternative is considered. The pipeline project will contribute to 19 employment opportunities during construction.				

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

Ecology and Wetland assessment Report
Heritage Exemption Letter

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

The information presented in this report is based on the information available at the time of compilation of the report. It is assumed that all data and information supplied by the Applicant or any of their staff or consultants is complete, valid and true.

8.3 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 this project involves the upgrading of the sewer pipeline infrastructure which includes the installation of an additional sewer pipeline. The applicant does not expect to decommission the infrastructure currently. Should the sewer pipeline infrastructure require decommissioning in future, a suitably qualified specialist must prepare a decommissioning plan prior to decommissioning.

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

Due to the nature of this project, this section is not applicable to this project.

8.4 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:

Several Cumulative impacts with regard to ecology were identified in the specialist assessment and are listed below:

- Loss of CR vegetation type.
- Loss of habitat for indigenous species.
- Spread of disease to surrounding areas.
- Loss of CBA: important habitat.

- Loss of wetland habitat.
- Removal of topsoil.
- Loss of usable water resources for fauna species.
- Loss of viable habitat.

The proposed project aims to provided additional sewage infrastructure to the surrounding areas and therefore, will support development in the area. However, the installation of the pipeline and associated activities could have negative cumulative impacts if the prescribed mitigation measures are not adhered to.

8.5 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

No site or activity alternatives have been identified for the proposed project as there is an existing pipeline servitude. Please note that from an environmental point of view the proposal is considered the best option for the proposed installation as all identified impacts under the proposal can be reduced to medium and low significance provided that all recommended mitigation measures are implemented correctly.

Alternative 1

[redacted]

No-go (compulsory)

The “No Go” or “No Action” alternative refers to the alternative of not embarking on the proposed project at all. This alternative would denote the current status quo without the proposed project. It is important to note that the No Go alternative is the baseline against which all other alternatives and the development proposal are assessed.

When considering the No Go alternative, the impacts (both positive and negative) associated with any other specific alternative or the current project proposal would not occur and in effect the impacts of the No Go alternative are therefore inadvertently assessed by assessing the other alternatives. In addition to the direct implications of retaining the status quo there are certain other indirect impacts, which may occur should the No Go alternative be followed. The No Go alternative as a specific alternative is not considered feasible for the following reasons:

- The employment benefits (temporary and permanent jobs) that will be created during both construction and operation of the facility will not be created if the No-Go Alternative is considered feasible.
- Should the sewer pipeline not be installed, the new development will place additional pressure on the existing infrastructure and could result in spillages. This could significantly impact on the socio-economic status of the area .

The No-go alternative, as a specific alternative will not be considered further for this application.

8.6 IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

The following potential Construction Phase Impacts are anticipated:

- Impacts on vegetation communities;
- Erosion;
- Loss of CBA and ESA;
- Disturbance of Wildlife;
- Potential leaks or discharges from machinery into sensitive areas;
- Impact on wetlands;
- Community safety; and
- Job Creation
- Impact on pre-existing land uses

The following Potential Operational Phase Impacts are anticipated:

- Continued encroachment of an indigenous and CR vegetation community by alien invasive plant species as well as erosion due to disturbed soils
- Continued displacement and fragmentation of the faunal community (including threatened or protected species) due to ongoing anthropogenic disturbances (noise, dust and vibrations) and habitat degradation/loss (litter, road mortalities and/or poaching); and
- Potential leaks or discharges from machinery into sensitive areas.

For alternative:

[redacted]

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.

The proposed project will increase the capacity for sewage management in the area and allow for further economic growth and urban development. The proposed pipeline will be installed in an existing servitude.

Several impacts have been identified for the proposed project, with many having medium significance pre-mitigation. These Moderate impacts are anticipated as the proposed project will be for the installation of the pipeline infrastructure and the temporary and short-term physical disturbance of the wetland area cannot be avoided during construction.

Impacts identified for the construction phase of the project are associated with changes to the wetland system caused by the installation of the pipeline This will have a direct impact on the wetland it passes through. However, if the prescribed mitigation measures are implemented for the project, the impacts would be reduced to Low for all the construction aspects.

8.7 SPATIAL DEVELOPMENT TOOLS

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

It is anticipated that the proposed installation will not negatively change the character of the watercourse and will for an increased capacity for sewage. As such, this development is deemed to be compatible with the following spatial data sets that were assessed on a GIS:

- Gauteng Spatial Development Framework 2030;
- Gauteng Provincial Environmental Management Framework (EMF); and
- Gauteng Conservation Plan

8.8 RECOMMENDATION 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	NO
X	

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 opinion of the EAP that the project be granted environmental authorisation by the Competent Authority (CA) based on the low significance of impacts identified if all mitigation measures are implemented. All recommended mitigation measures that should be considered for inclusion in the EA during the issuing of an EA by the CA in respect of this application have been listed in the attached EMPr (Appendix H).

8.9 THE NEEDS AND DESIRABILITY OF THE PROPOSED DEVELOPMENT

(as per notice 792 of 2012, or the updated version of this guideline)

The proposed project aims to increase the capacity of the sewage infrastructure in Randburg, City of Johannesburg. The current sewage infrastructure is inadequate and is therefore, unable to support any further development in the area. The installation of the pipeline will allow for the housing developments in the area to commence. The proposed pipeline will be installed in an existing servitude.

8.10 THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

(consider when the activity is expected to be concluded)

The environmental authorisation is required for a period of 10 years from the time of issuing. This will allow adequate time for the remaining permitting and planning to be concluded and construction to commence.

8.11 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

(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

9 SECTION F: APPENDICES

The following appendixes must be attached as appropriate (this list is inclusive, but not exhaustive):

It is required that if more than one item is enclosed that a table of contents is included in the appendix

Appendix A: Site plan(s) – (must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix E: Public participation information

Appendix F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information

Appendix G: Specialist reports

Appendix H: EMPr

Appendix I: Other information

CHECKLIST

To ensure that all information that the Department needs to be able to process this application, please check that:

 Where requested, supporting documentation has been attached;

 All relevant sections of the form have been completed.