



**BASIC ASSESSMENT FOR THE PROPOSED PIKITUP WASTE  
MANAGEMENT FACILITY IN KAALFONTEIN, CITY OF  
JOHANNESBURG MUNICIPALITY, GAUTENG PROVINCE.**

**DRAFT BASIC ASSESSMENT REPORT**

**May 2019**

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## **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)**

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### **Kindly note that:**

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

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### **DEPARTMENTAL DETAILS**

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

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

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

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(For official use only)

<b>NEAS Reference Number:</b>						
<b>File Reference Number:</b>						
<b>Application Number:</b>						
<b>Date Received:</b>						

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

Not applicable as this is a draft report.

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.  
 Decommissioning and closure phase has not been considered as part of this application as the end use of the site and required decommissioning activities are not known at this time. In addition, the current environmental baseline conditions may change overtime; it is therefore not possible to predict the future potential environmental impacts. In addition, it is unlikely that decommissioning will be contemplated due to the nature of the development. However, the closure and decommissioning require a separate EIA process. If decommissioning is considered in future, the developer/ license holder will undertake the required actions by applying for decommissioning.

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.  
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Have State Departments including the competent authority commented? **N/A**

If no, why?  
 The Report is still at draft stage and is being released to the public and state department for comments.

## PROJECT DETAILS

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<b>Title</b>	:	Basic Assessment Process PROPOSED PIKITUP WASTE MANAGEMENT FACILITY IN <b>KAALFONTEIN</b> , CITY OF JOHANNESBURG MUNICIPALITY, GAUTENG PROVINCE.
<b>Report compiled by</b>	:	Envirolution Consulting (Pty) Ltd
<b>Client</b>	:	PIKITUP (SOC) Ltd
<b>Report Status</b>	:	Draft Basic Assessment Report for Public Review

**Public review period: 24 May 2019 – 25 June 2019**



## DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

**This Basic Assessment was compiled by:**

**Company Name: Envirovolution Consulting**  
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### Details of the EAP's expertise to carry out Basic Assessment procedures

Envirovolution Consulting (Pty) Ltd was contracted by Pikitup (SOC) Ltd, as the independent environmental consultant to undertake the Environmental Basic Assessment process for the proposed project. Envirovolution Consulting Pty Ltd is not a subsidiary of, or affiliated to Pikitup (SOC) Ltd. Furthermore, Envirovolution Consulting does not have any interests in secondary developments that may arise out of the authorisation of the proposed project.

The EAPs from Envirovolution Consulting who are responsible for this project are (refer to **Appendix I** for CVs):

- Gesan Govender – The principle environmental assessment practitioner (EAP) for this project is a registered Professional Natural Scientist and holds an Honors Degree in Botany. He has over 15 years of experience within the field of environmental management. His key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; compliance reporting; the identification of environmental management solutions and mitigation/risk minimising measures; and strategy and guideline development. He is currently responsible for the project management of EIAs for several diverse projects across the country.
- Mr Thabang Sekele forms part of the project team and acts as the Project Manager for all phases of the project. Thabang holds a Bachelor's degree in Environmental Management from the University of South Africa. Thabang's key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which include integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; environmental auditing and compliance reporting; the identification of environmental management solution and mitigation/risk minimising measures; environmental auditing, monitoring and reporting compliance. Thabang is currently an Environmental Consultant at Envirovolution Consulting (Pty) Ltd.

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### Appendixes

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information (N/A)

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

## SECTION A: ACTIVITY INFORMATION

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### 1. PROPOSAL OR DEVELOPMENT DESCRIPTION

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

#### 1.1 Introduction and Background

Rapid population growth within the City of Johannesburg (CoJ) and associated economic development, which ultimately results in increased waste generation, is the key pressure resulting in the current waste management challenges in the city (Pikitup, 2010 and CoJ, 2008). Increased population further places pressure on the level of service the city can deliver (CoJ, 2008). In terms of the Constitution of South Africa (Act 108 of 1996) and the Municipal Systems Act, 2000 (Act 32 of 2000), the CoJ is mandated to provide waste collection, disposal and cleansing services to all its residents.

The collection and sorting of recyclable material forms a critical link between the disposal of waste and the actual recycling of the materials. Recycling dramatically reduces the amount of waste taken to landfill sites and the costs incurred by the municipality to accommodate said waste. This proposed facility thus will play a role in improving the economy and therefore the development of people in the region, as well as playing an important role in minimising the waste affecting the environment.

The strategic focus of Pikitup is to ensure waste prevention and minimisation and a community driven approach to waste management.

As stated by the Integrated Waste Management Plan (IWMP) for the City of Johannesburg, City needs to come up with ways of saving/maximising landfill airspace such as:

- Waste minimisation and recycling options.
- Potential for regional collaboration on new landfill site developments.
- Alternative disposal and/or treatment options.

This is largely due to the existing landfill sites are nearing their end of life with limited options to extend their life spans.

#### 1.2 Activity Description

Pikitup is proposing to establish an integrated waste management facility on **Erf 6049 Kaalfontein**, Johannesburg, Gauteng Province. The proposed facility will have a total operation area in excess of 500 m<sup>2</sup>. This proposed facility will aim to contribute to implementing sustainable waste minimisation, reuse, recycling and recovery in the City. The proposed activity will entail storing, sorting of waste and recycling. This proposed site will act as a drop off centre for recyclables such as paper, plastic, cans and e-waste.

#### 1.4. The Activities being applied for:

The activities being applied for are Category A listed activities in terms Schedule 19 (1) of the National Environmental Management Waste Act, (Act No. 59 of 2008). Government Notice 921 of November 2013 requires a Basic Assessment to be conducted for the following listed activities as detailed below:

Listed activity as described in GN R 921	Description of project activity that triggers listed activity
<b>Category A3 (3):</b> The recycling of general waste at a facility that has an operational area in excess of 500m <sup>2</sup> , excluding recycling that takes part as an integral part of internal manufacturing process within the same premises.	Recycling will take place and the operational area is in excess of 500 m <sup>2</sup> .
<b>Category A3 (12):</b> The construction of facility for a waste management activity listed in Category A of this Schedule (not is isolation to associated waste management activity).	A waste management facility and its associated infrastructure will be constructed on the subject property.
<b>Category C5 (1):</b> The storage of general waste at a facility that has the capacity to store in excess of 100m <sup>3</sup> of general waste at any one time, excluding the storage of waste in lagoons or temporary storage of such waste.	Wastes materials will be stored on site and the storage area is in excess of 500m <sup>2</sup> .  Please note: category C5 (1) does not require an authorisation (WML). The operator of the facility will be required to comply with the Norms and Standards for the Storage of Waste, 2013. A Waste Storage Registration form will be submitted to GDARD prior to commencement of activities on site.

**1.4. Technical Details of the Operations**

The operations at the depot will be as follows:

- i. General waste will be delivered to the depot on trucks.
- ii. Receiving, offloading and sorting of waste will take place at the sorting bay and then stored at the designated storage area, according to waste types, and in accordance with the Norms and Standards, 2013.

Select the appropriate box

The application is for an upgrade of an existing development

The application is for a new development

Other, specify

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

YES  NO

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

N/A



If yes, have you applied for the authorisation(s)?

YES	NO
YES	NO

If yes, have you received approval(s)? (attach in appropriate appendix)

## 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:

<u>Title of legislation, policy or guideline (Promulgation Date)</u>	<u>Applicable Requirements</u>	<u>Administering Authority</u>	<u>Description of compliance</u>
National Environmental Management Act (Act No. 107 of 1998)	<ul style="list-style-type: none"> <li>▪ NEMA requires, inter alia, that:               <ul style="list-style-type: none"> <li>○ Development must be socially, environmentally, and economically sustainable.”</li> <li>○ Disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied.”</li> <li>○ A risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.”</li> </ul> </li> <li>▪ EIA Regulations have been promulgated in terms of Chapter 5. Activities which may not commence without an environmental authorisation are identified within these Regulations.</li> <li>▪ In terms of S24(1) of NEMA, the potential impact on the environment associated with these listed activities must be considered, investigated, assessed and reported on to the competent authority charged by NEMA with granting of the relevant environmental authorisation.</li> </ul>	<ul style="list-style-type: none"> <li>▪ National Department of Environmental Affairs</li> <li>▪ Gauteng Department of Agriculture and Resource Development</li> </ul>	The Basic Assessment is undertaken in accordance with the requirements of Government Notice R982 of December 2014, as required in terms of the National Environmental Management: Waste Act, 2008 (No. 59 of 2008)
National Environmental Management Act (Act No. 107 of 1998)	<ul style="list-style-type: none"> <li>▪ A project proponent is required to consider a project holistically and to consider the cumulative effect of potential impacts.</li> <li>▪ In terms of the Duty of Care provision in S28(1) the project proponent must ensure that reasonable measures are taken throughout the life cycle of this project to ensure that any</li> </ul>	<ul style="list-style-type: none"> <li>▪ National Department of Environmental Affairs</li> <li>▪ Gauteng Department of Agriculture and Resource Development</li> </ul>	While no permitting or licensing requirements arise directly, the holistic consideration of the potential impacts of the proposed project has found application in the EIA Phase.

<u>Title of legislation, policy or guideline (Promulgation Date)</u>	<u>Applicable Requirements</u>	<u>Administering Authority</u>	<u>Description of compliance</u>
	pollution or degradation of the environment associated with a project is avoided, stopped or minimised.		<ul style="list-style-type: none"> <li>▪ The implementation of mitigation measures is included as part of the Project EMPr and will continue to apply throughout the life cycle of the project.</li> </ul>
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)	<ul style="list-style-type: none"> <li>▪ The Minister may by notice in the Gazette publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment.</li> <li>▪ In terms of the regulations published in terms of this Act (GN 921 of November 2013), a Basic Assessment or Environmental Impact Assessment is required to be undertaken for identified listed activities.</li> <li>▪ Any person who stores waste must at least take steps, unless otherwise provided by this Act, to ensure that               <ul style="list-style-type: none"> <li>(a) The containers in which any waste is stored, are intact and not corroded or in any other way rendered unfit for the safe storage of waste;</li> <li>(b) Adequate measures are taken to prevent accidental spillage or leaking;</li> <li>(c) The waste cannot be blown away;</li> <li>(d) Nuisances such as odour, visual impacts and breeding of vectors do not arise; and</li> <li>(e) Pollution of the environment and harm to health are prevented.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ National Department of Environmental Affairs (hazardous waste)</li> <li>▪ Gauteng Department of Agriculture and Resource Development (general waste)</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Basic Assessment is undertaken in accordance with the listed Waste Management activities in Category A of Government Notice 921 in terms of the NEM: WA, 2008.</li> <li>▪ Waste handling, storage and disposal during construction and operation is required to be undertaken in accordance with the requirements of this Act, as detailed in the project EMPr, as well as in accordance with the relevant Norms and Standards.</li> </ul>
Norms and standards for storage of waste (2013):	Norms and standards for storage of waste (2013) specify requirements for storage of waste	<ul style="list-style-type: none"> <li>▪ Department of Environmental Affairs</li> </ul>	The EMPr has been drafted taking into consideration the requirements of the norms

<u>Title of legislation, policy or guideline (Promulgation Date)</u>	<u>Applicable Requirements</u>	<u>Administering Authority</u>	<u>Description of compliance</u>
		(DEA) ▪ Gauteng Department of Agriculture & Rural Development (GDARD)	and standards for storage of waste (2013).
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	<ul style="list-style-type: none"> <li>▪ S18, S19 and S20 of the Act allow certain areas to be declared and managed as “priority areas”.</li> <li>▪ Declaration of controlled emitters (Part 3 of Act) and controlled fuels (Part 4 of Act) with relevant emission standards.</li> <li>▪ The Act provides that an air quality officer may require any person to submit an atmospheric impact report if there is reasonable suspicion that the person has failed to comply with the Act.</li> <li>▪ Dust control regulations promulgated in November 2013 may require the implementation of a dust management plan.</li> </ul>	<ul style="list-style-type: none"> <li>▪ National Department of Environmental Affairs</li> <li>▪ City of Johannesburg</li> </ul>	<ul style="list-style-type: none"> <li>▪ While no permitting or licensing requirements arise from this legislation for the depot, this Act will find application during the construction phase of the project.</li> <li>▪ The implementation of dust mitigation measures are included as part of the project EMPr and will continue to apply throughout the life cycle of the project.</li> </ul>
National Heritage Resources Act (Act No. 25 of 1999)	<p>S38 states that Heritage Impact Assessments (HIAs) are required for certain kinds of development including</p> <ul style="list-style-type: none"> <li>▪ Any development or other activity which will change the character of a site exceeding 5 000 m<sup>2</sup> in extent</li> </ul>	<ul style="list-style-type: none"> <li>▪ South African Heritage Resources Agency</li> </ul>	<ul style="list-style-type: none"> <li>▪ The site to be transformed is bigger than 5000 m<sup>2</sup>, as per S38 a Heritage Impact Report has been undertaken as part of the application process for the project.</li> </ul>
Hazardous Substances Act (Act No. 15 of 1973)	<ul style="list-style-type: none"> <li>▪ This Act regulates the control of substances that may cause injury, or ill health, or death due to their toxic, corrosive, irritant, strongly sensitising, or inflammable nature or the generation of pressure thereby in certain instances and for the control of certain electronic products. To provide for the rating of such substances or products in relation to the degree of danger; to provide for the prohibition and control of</li> </ul>	<ul style="list-style-type: none"> <li>▪ Department of Health</li> </ul>	<ul style="list-style-type: none"> <li>▪ This act will find application in the proper storage of hydrocarbons on site e.g. diesel, if any, that will be stored on site will need to comply with the storage and handling requirement of the act</li> </ul>

<u>Title of legislation, policy or guideline (Promulgation Date)</u>	<u>Applicable Requirements</u>	<u>Administering Authority</u>	<u>Description of compliance</u>
	<p>the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products.</p> <ul style="list-style-type: none"> <li>▪ Group I and II: Any substance or mixture of a substance that might by reason of its toxic, corrosive etc., nature or because it generates pressure through decomposition, heat or other means, cause extreme risk of injury etc., can be declared to be Group I or Group II hazardous substance;</li> <li>▪ Group IV: any electronic product;</li> <li>▪ Group V: any radioactive material. The use, conveyance, or storage of any hazardous substance (such as distillate fuel) is prohibited without an appropriate license being in force.</li> <li>▪ It is necessary to identify and list all the Group I, II, III, and IV hazardous substances that may be on the site and in what operational context they are used, stored or handled.</li> </ul>		
<p>Promotion of Access to Information Act, 2000 (Act No 2 of 2000):</p>	<p>Legislation that allows the public access to information about activities that influence their well-being and to make contributions to decision making</p>	<p>DEA &amp; GDARD</p>	<p>No permitting is required the act finds applicability during the public participation process phase of the basic assessment process.</p>
<p>Occupational Health and Safety Act No. 85 of 1993:</p>	<p>The Occupational Health and Safety Act provides for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work, against hazards to health and safety arising out of or in connection with the activities of persons at work.</p>	<p>Department of Labour</p>	<p>While no permitting or licensing requirements arise from this legislation, this Act will find application during the construction phase of the project. Health and safety precautions measures must be put in place for the construction crew and the general public. E.g.</p>

<u>Title of legislation, policy or guideline (Promulgation Date)</u>	<u>Applicable Requirements</u>	<u>Administering Authority</u>	<u>Description of compliance</u>
			Protection of workers on site through provision of Personal Protective Equipment's; Training and other health and safety amenities.
Conservation of Agricultural Resources Act (Act No 43 of 1983).	Regulation 15 of GNR1048 provides for the declaration of weeds and invader plants, and these are set out in Table 3 of GNR1048. Declared Weeds and Invaders in South Africa are categorised according to one of the following categories: » <u>Category 1 plants</u> : are prohibited and must be controlled. <ul style="list-style-type: none"> <li>▪ <u>Category 2 plants</u>: (commercially used plants) may be grown in demarcated areas providing that there is a permit and that steps are taken to prevent their spread.</li> <li>▪ <u>Category 3 plants</u>: (ornamentally used plants) may no longer be planted; existing plants may remain, as long as all reasonable steps are taken to prevent the spreading thereof, except within the floodline of watercourses and wetlands.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Department of Agriculture, Forestry and Fisheries (DAFF)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Alien plant species proliferate in disturbed area. The EMPr has provided mitigation measures for management of invasive plant species that may establish on site following disturbance of the site due to construction and site establishment.</li> </ul>
National Environmental Management: Biodiversity Act 2004 (Act 10 of 2004)	Provides management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act107 of 1998; the protection of species and ecosystems that warrant national protection and the sustainable use of indigenous biological resources. <u>GNR 985; the alien and invasive species (AIS) regulations provides for declaration of weeds and invader plants.</u>	Department of Environmental Affairs (DEA)	This act will find application throughout the life cycle of the project. In this regard soil erosion prevention and soil conservation strategies must be developed and implemented. In addition a weed control and management measures provided in this EMPr must be implemented.
National Waste Management	The National Waste Management Strategy presents Government's	Department of Environmental	The proposed development will support and

<u>Title of legislation, policy or guideline (Promulgation Date)</u>	<u>Applicable Requirements</u>	<u>Administering Authority</u>	<u>Description of compliance</u>
Strategy	<p>strategy for integrated waste management for South Africa. Waste Avoidance is the primary focus of the National Waste Management Strategy, and as such must be the priority of any municipal Integrated Waste Management Plan (IWMP).</p> <p>Waste Avoidance is defined as the action that avoids the entry of material into the waste stream that is when the generator of the potential waste material exercises the decision to do something else with that material rather than to put it out for waste collection. Waste Reduction can also be achieved through the recovery and/or recycling of waste after collection.</p>	Affairs (DEA)	promote waste recycling, providing the collection and depot infrastructure required to collect waste materials across the province and deliver them t to site for sorting and recycling. In turn reducing wastes from the environment.
City of Johannesburg Integrated Waste Management Plan (IWMP) 2011.	Local municipalities are required to develop first generation Integrated Waste Management Plans (IWMPs) and to submit such plans to their respective provincial environmental departments. The strategy was however not supported by legislation resulting in voluntary development of IWMPs by municipalities. With the enactment of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008), the development of IWMPs became a statutory requirement.	City of Johannesburg Metropolitan Municipality	The proposed development of the waste recycling facility is in line with the principles of sustainability and will minimize waste going to landfill and initiate recycling as required in the IWMP.

### 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

#### a) Layout Alternatives

The proposed waste management facility will be located on **ERF 6049 Kaalfontein**, City of Johannesburg Metropolitan Municipality, Gauteng Province (the proposed site).

Site assessments were undertaken to determine what would be the best layout alternative to this development on this particular site. The decision on the type of layout alternative to use was based on the following below:

##### Technical considerations

- Already available road networks
- Technical cost (cost benefit analysis)

##### Environmental considerations

- The site layout was selected to ensure minimal impact on the environment
- No land expropriation is required as the property in question belongs to Pikitup
- No major structures are required

##### Potential Negative Impacts:

- Harmful leachates contaminating soil - When waste ends up at the landfill, chemicals in the trash can leech out into the soil, contaminating it. This has a potential to will harm plants, along with animals and even humans who come into contact with the soil.
- Air pollution - Garbage can create air pollution due to odors from the stored waste.
- Groundwater pollution – As rain falls on the waste storage site, organic and inorganic constituents dissolve, forming leacheate into groundwater.
- Smell – Although a less severe impact the effect of smell could be a nuisance.
- Vermin – The waste facility could provide an attractive environment for rats and other vermin.



**Potential Positive Impacts:**

- The proposed activity will assist in reducing wastes going straight to landfills and thus increase their life spans.
- Will assist in curbing illegal dumping and encourage responsible waste disposal.
- Recycling minimizes pollution where recycling of wastes such as plastics, cans, and chemicals go a long way towards considerably cutting back on levels of pollution because these waste products are reused rather than just being thrown away recklessly.
- A waste recovery and recycling effect which is achieved through manual or mechanical separation to provide recovery and recycling of waste.
- Waste information recording will take place as vehicles transporting wastes will be weighed and recorded along with all other wastes entering the facility. This emphasizes the importance of collection and dissemination of accurate waste information to be incorporated in to the National Waste Information System.
- Recycling and waste minimisation is becoming a preferred option globally and nationally to improve impacts on the environment and to ensure sustainability.
- Job creation by way of a leading to a long chain of collection and delivery employment opportunities

The following **layout alternatives** were compared:

Based on the feasibility analysis undertaken only layout alternatives were considered feasible and provided for further assessment through the Basic Assessment. These are discussed further below.

## 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	<b>Proposed Development</b>	<p>The proposed development to establish a waste management facility on <b>Erf 6049 Kaalfontein</b>, Johannesburg, Gauteng Province. The proposed facility will have a total operation area in excess of 500 m<sup>2</sup>. This proposed facility will aim to contribute to implementing sustainable waste minimisation, reuse, recycling and recovery in the City.</p> <p>The proposed development entailed evaluating two (2) different layout alternatives for the waste facility. The proposed (preferred) layout entails the <b>Sorting and Storage Area</b> located at the south west corner of the site property away from the adjacent residential houses. The alternative layout entails the <b>Sorting and Storage Area</b> being located on the east of the site property , this option is less preferred as the sorting and storage area is closer to the residential houses and would cause noise and odour nuisance as compared to the preferred alternative.</p>

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other(provide details of "other")	Description
1	<b>Proposed (preferred) Layout - (Sorting and Storage Area on the South West corner)</b>	<p><b>Proposed Preferred Layout (Sorting and Storage Area on the South West corner)</b></p> <p>The proposed development will involve the storing, sorting and recycling of general and garden also acting as a waste drop-off</p>

centre for recyclables such as paper, plastics, cans and e-waste.

The proposed (preferred) alternative layout entails the **Sorting and Storage Area** located at the south west corner of the site property away from the adjacent residential houses.



Figure 1: The proposed (preferred) layout of the waste facility (Sorting and Storage Area on the **South West corner**).

Supporting machinery and equipment include:

- a. Mini dumper trucks
- b. Picker truck
- c. Front end loader trucks.
- d. Forklifters
- e. Waste storage skips

Please refer to pictorial supporting machinery below.



**Front end loader trucks**



**Picker truck**





**Mini dumper trucks**



**Recycling machine**



**Waste storage skips**

Waste transportation vehicles will enter the site and will drive through the installed weighbridge to weigh and record the waste that is brought in-to the facility. The waste will then be classified and sorted according to set classifications. Some of the wastes will go through recycling machines and transferred to respective approved recycled goods manufacturers to be re-used again. The remaining wastes will be stored on site and will later be transported to a


		licensed land fill.
	<p><b>Alternative Layout - (Sorting and Storage Area on the Eastern corner)</b></p>	<p><b>Alternative Layout (Sorting and Storage Area on the Eastern corner)</b></p> <p>The alternative layout entails the <b>Sorting and Storage Area</b> being located on the eastern part of the project site, this option is less preferred as it the sorting and storage area is closer to the residential houses and would cause noise and odour nuisance as compared to the preferred alternative. This alternative will entail the same supporting machinery and equipment at the proposed alternative.</p> 

		Figure 3: The Alternative layout of the waste facility ( <b>Sorting and Storage Area on the Eastern corner</b> ).
3	<b>No Go Option</b>	The 'do nothing alternative' is the option of not constructing the waste facility on site. This alternative would result in no additional environmental impacts related to the proposed waste facility on the site or its surrounding area. This option would result in landfills rapidly reaching their capacities at a quicker rate than desired as the proposed waste facilities would not play their role as waste deflecting facilities and it would mean wastes would be less recycled.

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

--

**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:

<b>Proposed (preferred) Layout - (Sorting and Storage Area on the South West corner)</b>	<b>Size of the activity:</b> 500 m <sup>2</sup>
--	--

Alternatives:

<b>Alternative Layout - (Sorting and Storage Area on the Eastern corner)</b>	500 m <sup>2</sup>
--	--------------------

or, for linear activities:

<b>Proposed activity</b>	<b>Length of the activity:</b>
Alternatives:	
Alternative 1 (if any)	
Alternative 2 (if any)	
	m/km

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

<b>Proposed (preferred) Layout - (Sorting and Storage Area on the South West corner)</b>	<b>Size of the site/servitude:</b> 500 m <sup>2</sup>
Alternatives:	
<b>Alternative Layout - (Sorting and Storage Area on the Eastern corner)</b>	500 m <sup>2</sup>

**5. SITE ACCESS**

**Both Layout Alternatives**

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

Describe the type of access road planned:

The site is directly accessible from the existing access roads viz. Dale Road Street. No access road is planned.
--

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).



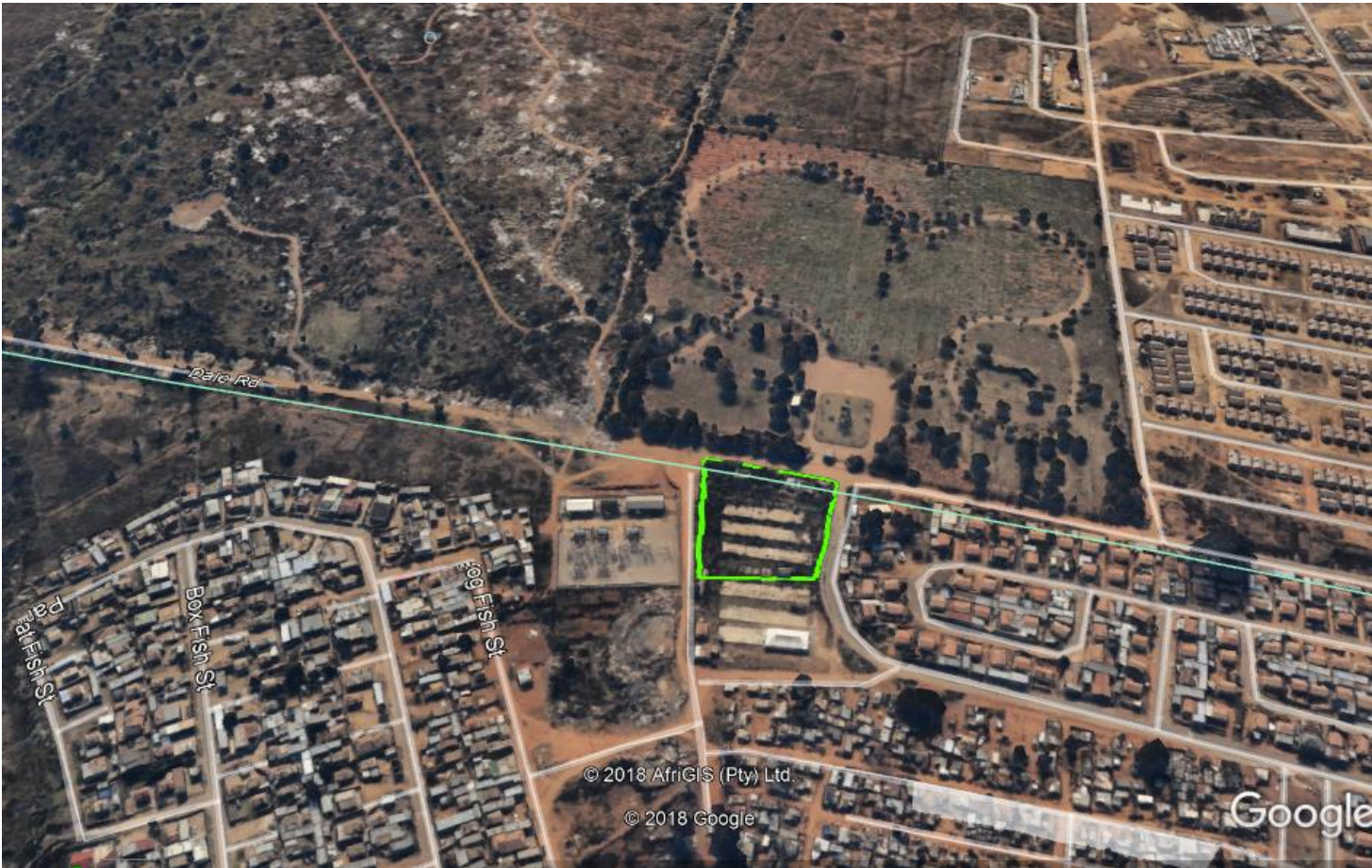


Figure 1: Overview of study showing access routes to site.

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

Section A 6-8 has been duplicated  Number of times

(only complete when applicable)

**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)
- shape files 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.

The Locality and Sensitivity maps for the proposed development are attached as **Appendix A**.

## 7. SITE PHOTOGRAPHS

Colour photographs from the center 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.

Site photographs are attached as **Appendix B**.

## 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.

Facility illustrations are attached as **Appendix C**.

## 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  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 alternative 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  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.  (complete only when appropriate for above)

**It is worth noting that the two (2) layout alternatives that are investigated occur within the same property located in the same receiving environment and therefore will be described together as the**

**characteristics will be similar irrespective of the layout alternative selected. It is for this reason that this section will not be duplicated.**

## 1. PROPERTY DESCRIPTION

### Property description:

(Including Physical Address and Farm name, portion etc.)

The project area is located along Dale Road on **ERF 6049 Kaalfontein**, City of Johannesburg Metropolitan Municipality, Gauteng Province.

## 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):
<b>Proposed (preferred) Layout - (Sorting and Storage Area on the <b>South West corner</b>)</b>	26° 5'49.64"S	28° 5'34.94"E
<b>Alternative Layout - (Sorting and Storage Area on the <b>Eastern corner</b>)</b>	26° 5'49.64"S	28° 5'34.94"E

In the case of linear activities:

### Alternative:

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

### Latitude (S):

### Longitude (E):


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

Addendum of route alternatives attached

The 21 digit Surveyor General code of each cadastral land parcel

### Both Layout Alternatives :

21 DIGIT SURVEYOR GENERAL CODE –

T0IR09300000604900000 – ERF 6049 Kaalfontein

## 3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

**Note:** Both Layout Alternatives investigated are located on the same property/site and thus will have identical gradient details.

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

#### 4. LOCATION IN LANDSCAPE

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

**Note:** Both Layout Alternatives investigated are located on the same property/site and thus will have identical landscape details.

Ridgeline	Plateau	Side slope of hill/ridge	Valley	Plain ✓	Undulating plain/low hills	River front
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**5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

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

**Note:** Both Layout Alternatives investigated are located on the same property/site and thus will have identical groundwater, soil and geological details.

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

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

b) are any caves located on the site(s)  YES  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):

c) are any caves located within a 300m radius of the site(s)  YES  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):

d) are any sinkholes located within a 300m radius of the site(s)  YES  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):

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)?  YES  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	Natural veld with	Natural veld with	<b>Veld</b>	Landscaped
---------------------	-------------------	-------------------	-------------	------------

condition % =	scattered aliens % =	heavy alien infestation % =	<b>dominated by alien species % = 40</b>	(vegetation) % =
Sport field % =	Cultivated land % =	<b>Paved surface (hard landscaping) % = 30</b>	<b>Building or other structure % = 20</b>	<b>Bare soil % = 10</b>

**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.

The proposed development is located outside any Critical Biodiversity Area as per the Gauteng Conservation Plan v 3.3.

Furthermore the site is highly disturbed and transformed with the majority of the site being dominated by alien invasive species. Also, a notable portion of the site is transformed as there are remnants of old unused structures and associated paving. No impacts on the natural environment will occur as a result of the proposed project.

The study area falls within that zone usually located on the front edge of (city) urban-sprawl where the land previously used for agricultural use (only) have become subdivided into small holdings. What used to be a large single agricultural unit or farm now consists of tens of small properties. These units do not have their economic base in traditional agriculture but are sustained by a variety of land uses and economic activities with strong urban associations. This phenomenon happened in the past forty years. Therefore, most of the built fabric, date from this period. The result was that any historic farmsteads older than 60 years that may have existed have either disappeared or have been 'upgraded'.

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

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

If YES, specify and explain:

N/A

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

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

If YES, specify and explain:

N/A

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

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

If YES, specify and explain:

N/A

Was a specialist consulted to assist with completing this section

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

**1.) Heritage Specialist**

Name of the specialist:

J van Schalkwyk



Qualification(s) of the specialist:

J A van Schalkwyk, D Litt et Phil, heritage consultant, has been working in the field of heritage management for more than 30 years. Based at the National Museum of Cultural History, Pretoria, he has actively done research in the fields of anthropology, archaeology, museology, tourism and impact assessment. This work was done in Limpopo Province, Gauteng, Mpumalanga, North West Province, Eastern Cape, Northern Cape, Botswana, Zimbabwe, Malawi, Lesotho and Swaziland. Based on this work, he has curated various exhibitions at different museums and has published more than 60 papers, many in scientifically accredited journals.

Postal address:

62 Coetzer Avenue, Monument Park, 0181

Postal code:

2194

Telephone:

Cell:

076 790 6777

E-mail:

[jvschalkwyk@mweb.co.za](mailto:jvschalkwyk@mweb.co.za)

Fax:

Are any further specialist studies recommended by the specialist?

YES

NO

If YES, specify:

N/A

If YES, is such a report(s) attached?

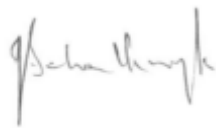
YES

NO

If YES list the specialist reports attached below

N/A

Signature of specialist:



Date:

06.03.2019

**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 <sup>AN</sup>	17. Hospitality facility	18. Church	19. Education facilities ✓	20. Sport facilities ✓
21. Golf course/polo fields	22. Airport <sup>N</sup>	23. Train station or shunting yard <sup>N</sup>	24. Railway line <sup>N</sup>	25. Major road (4 lanes or more) <sup>N</sup>
26. Sewage treatment plant <sup>A</sup>	27. Landfill or waste treatment site <sup>A</sup>	28. Historical building	29. Graveyard ✓	30. Archeological site
31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam <sup>A</sup>	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

	10	10	10,1	1	1	
	13	13	13	14	14	
WEST	13	13		15	15	EAST
	24	24	24	24	24	
	1	1	1	1	1	
						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 ✓	NO
-------	----

If yes indicate the type of reports below

Heritage Impact Assessment: Phase 1
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## 9. SOCIO-ECONOMIC CONTEXT

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

**Introduction:** The City of Johannesburg is divided into seven regions, designated alphabetically from A to G. The project is located within Region A.

**Population:** Understanding both the age as well as anticipated population growth of the city assists in planning for the anticipated demand for services and job opportunities. The City of Johannesburg has a population of approximately 4 million made up primarily of a young population aged between 30 and 39 years. This total population translates into roughly 1.3 million households. The city's population is projected to increase to about 4.1 million in 2015 implying an annual rate of growth of the population of about 1.3% per annum by 2015. Household projections further indicate that the number of households in the City is likely to increase from about 1.3 million in 2010 to about 1.5 million in 2015 with an average household size of about 3 persons. **The region is home to more than 250 000 residents, most of whom are concentrated in Midrand.**

**Economic Profile of local Municipality:** The City of Johannesburg's economy is driven primarily by four economic sectors which are: (a) finance and business services, (b) community services, (c) manufacturing, and (d) trade. These four economic sectors collectively account for more than 82% of economic activity within the City. **The population in the region is relatively young, with some 24 percent being between the ages of 20 and 29. While the formal residential areas are home to prosperous and well-educated residents, most of the people living in the townships and informal settlements are poor, with low levels of school education (CoJ).**

**Level Of Unemployment:** The CoJ had high unemployment levels of 23.1% in 2010/2011. **Regions E, B have one of the lowest rates** of unemployment at 2.3% and 9.2% respectively. Youth unemployment remains a major challenge both nationally and for the city. Low education levels and slow formal sector growth are two of the major causes of youth unemployment. The vast majority of the youthful population in Johannesburg has only a matric certificate preventing access to the labour market (CoJ IDP 2012/2016). **Unemployment levels in this region stands at over 50 percent and more than 70 percent of the residents live below the poverty line. In the Kaalfontein area, approximately 70 percent of residents earn less than R2 500 a month, while 34 percent earn no income at all (CoJ, 2018).**

**Level of Education:** With regard to Education, the City of Johannesburg has low education levels and slow formal sector growths are two of the major causes of youth unemployment. The vast majority of the youthful population in Johannesburg has only a matriculation certificate, preventing access to the labour market.

## 10. CULTURAL/HISTORICAL FEATURES

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

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-
- (a) the construction of a road, wall, power line, 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 m<sup>2</sup> 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 m<sup>2</sup> in extent; or
  - (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

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

If YES, explain:

YES	NO ✓
-----	------

N/A

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:

Identified sites:

During the physical survey, no sites, features or objects of cultural significance were identified.

Impact assessment:

Impact analysis of cultural heritage resources under threat of the proposed development, is based on the present understanding of the development:

- As no sites, features or objects of cultural significance are known to exist in the development area, there would be no impact as a result of the proposed development.

From a heritage point of view, it is recommended that the proposed development be allowed to continue on acceptance of the mitigation measures stated in the report. Should archaeological sites or graves be exposed in other areas during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.

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

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

If yes, please attached the comments from SAHRA in the appropriate Appendix

YES	NO ✓
YES	NO ✓

**SECTION C: PUBLIC PARTICIPATION (SECTION 41)**

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

**2. LOCAL AUTHORITY PARTICIPATION**

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

Was the draft report submitted to the local authority for comment?

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

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

YES	NO
-----	----

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

The report is at draft stage and is being submitted to the local authority for the 30 days legislated commenting period. Comments are anticipated during the 30-day review period.
--

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 at draft stage and is being submitted to the local authority for the 30 days legislated commenting period. Comments are anticipated during the 30-day review period.

The Draft Basic Assessment Report will be submitted for comment to the local authority and as well as to other stakeholders. Comments that will be received will be reflected in the Final Basic Assessment Report.

The following public participation was conducted for the proposed project during to date:

Identification of stakeholders, including occupiers of the property, owners and occupiers of land adjacent to the site, municipal officials and relevant State Departments as part of the Public Participation Process. All respondents will then be placed on the project database. This database will be supplemented by I&APs the EAP to be included on the database. The database will be used throughout the process to inform the stakeholders of the project.

In order to canvass the issues and concerns of the broader public and to ensure that all IAPs are afforded the opportunity to comment on the proposed development, the proposed project was announced as follows:

- Erection of site notices, size A2) advertising the proposed development and displaying the contact details of the EAP will be prepared and displayed on-site and along the power line routes. The site notices will serve the purpose of informing potential IAPs of the project and therefore afford them the opportunity to comment.
- Distribution of the notification letter with a registration and comment sheet, and the locality map to state departments and other potential stakeholders through emails.
- An advert was placed in a local newspaper to notify the public about the Basic Assessment process, invite members of the public to register as I&APs on the project's database and notify the public of the availability of the Draft Basic Assessment Report.
- Communication with local authorities and stakeholders
- The comments received on the application and DBAR, have been included in the response and comment sheet.
- A copy of the Draft Basic Assessment Report is being made available for public review for a 30 day review period.
- Any further comments received during the review period of the draft Basic Assessment as well as responses provided will be captured and recorded within the Comments and Response Report in the final Basic Assessment Report that will be submitted to GDARD.

Once GDARD has made a decision on Environmental Authorisation: The registered I&APs, stakeholders and organs of state will be notified of the department's decision.

### 3. CONSULTATION WITH OTHER STAKEHOLDERS

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

Has any comment been received from stakeholders?

YES	NO ✓
-----	------

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

N/A

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

It is assumed that the project does did not attract any interest from the immediate community.

#### 4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

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

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

Throughout the BA process, public participation receives high priority. Public participation is one of the most important elements of the development process; therefore, interested and affected parties (I&APs), were identified as part of the Public Participation Process, including occupiers of the property, owners and occupiers of land adjacent to the site, municipal officials and relevant State Departments. All respondents were then registered on the project database. This database was supplemented by I&APs that contacted our Public Participation consultant to be included on the database. The database was used throughout the process to inform the I&APs of the project and is attached within **Appendix E**.

In order to canvass the issues and concerns of the broader public and to ensure that all I&APs are afforded the opportunity to comment on the proposed development, the proposed project was announced as follows:

- Two Site notices (size A2) advertising the proposed development and displaying the contact details of the EAP were prepared and displayed on-site. The site notices served the purpose of informing potential IAPs of the project and therefore afforded them the opportunity to comment. Refer to **Appendix E1** for Proof of Site Notices.
- Distribution of the notification letter with a registration and comment sheet, and the locality map to state departments and other potential stakeholders through emails (Refer to **Appendix E2a** for the notification letter and proof of email.
- Hand-delivered the announcement letter with Registration and Comment Sheet to the adjacent landowners in close proximity of the boundary of the property.
- Published an advertisement in two local newspapers.
- Communication with local authorities and stakeholders.
- No comments of objections were received from the public during the project announcement.

Please note that any further comments received during the review period of the draft Basic Assessment as well as responses provided will be captured and recorded within the Comments and Response Report attached as **Appendix E7** in the final Basic Assessment Report.



A copy of the Draft Basic Assessment Report for public review has been made available for public review at the nearest public library for a legislated 30-day commenting period.

## 5. APPENDICES FOR PUBLIC PARTICIPATION

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

Appendix 1 – Proof of site notice Attached as **Appendix E1**

Appendix 2 – Written notices issued as required in terms of the regulations Attached as **Appendix E2**

Appendix 3 – Proof of newspaper advertisements Attached as **Appendix E3**

Appendix 4 – Communications to and from interested and affected parties Attached as **Appendix E4**

Appendix 5 – Minutes of any public and/or stakeholder meetings **Not Applicable at this stage-to be held during the DBAR review period**

Appendix 6 - Comments and Responses Report Attached as **Appendix E6**

Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report- **N/A Comments are anticipated during the Draft BAR review period**

Appendix 8 –Comments from I&APs on amendments to the BA Report **N/A**

Appendix 9 – Copy of the register of I&APs **Appendix E9**

**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 alternative 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  times (complete only when appropriate)

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

**1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT**

**Solid waste management**

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

YES ✓	NO
-------	----

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

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

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

Solid construction waste will be temporarily stored on site in designated waste skips and then removed by an appropriate waste contractor appointed by the main construction contractor to an approved landfill site. This will be managed through the EMP.

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

Solid construction waste and general domestic waste (if any) will be removed from site by waste contractors and will be disposed of at a suitably licensed disposal facility. The nearest licensed landfill site is the FG Landfill and waste management. Safe disposal certificates must be obtained and kept on site for the duration of the construction phase.

Will the activity produce solid waste during its operational phase?  
If yes, what estimated quantity will be produced per month?

YES ✓	NO
At this stage it is unknown but anticipated to be minimal.	

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

Waste will be disposed of in dust bins or in waste disposal containers (skips) and will feed into the municipal waste stream

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?

YES ✓	NO
-------	----

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

As the proposed development is a waste storage facility, solid waste produced at the facility will be handled as per the proposed intention of the facility.

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?

YES	NO ✓
-----	------

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

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

YES ✓	NO
-------	----

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.

Yes, the proposed development is solid waste handling facility by means of sorting and recycling. . These activities are Category A Listed Activities (in terms of the *List of Waste Management Activities, 2013 as per the National Environmental Management: Waste Act (59 of 2008)*) and as such, requires that a Basic Assessment Process is undertaken as part of the Waste Management License Application and not an application for Scoping and EIA.

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

During construction: Wastes must be separated at source and disposed at relevant suitably licensed facilities. Waste should be separated into recyclable and non-recyclable materials and distributed for recycling where applicable. Construction waste rubble should be used as fill material and as foundation for the proposed upgrade processes where possible – this will however also be informed by the requirements of the storm water management plan. The re-use of construction waste materials will minimise the amount of waste that will need to be disposed of at registered municipal waste facilities.

During Operation: The purpose of the facility is to deflect wastes away from landfill sites by way of sorting and recycling wastes.

**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?

YES	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)?

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

	NO ✓
--	------

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

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?

YES	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 waste water, if any:

--

**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?

At this stage it is unknown but anticipated to be minimal.	
--	--

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity (ies)?

YES	NO
-----	----

The applicant will engage with the municipality to obtain a letter of confirmation. The letter will be attached to the final submission if received on time, or as soon as received from the local municipality.

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

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

N/A

**Emissions into the atmosphere**

Will the activity release emissions into the atmosphere? YES NO

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

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

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

This development is for a waste storage facility and will therefore not release any toxic pollutants to the environment other than exhaust emissions and dust generated during operation, which will be limited only to working hours 8am-4pm.

**2. WATER USE**

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

Municipal <input checked="" type="checkbox"/>	Directly from water board	groundwater	river, stream, dam or lake	other	the activity process itself will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month: N/A

If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Does the activity require a water use permit from the Department of Water Affairs? YES NO

If yes, list the permits required

N/A

If yes, have you applied for the water use permit(s)? YES NO

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

**3. POWER SUPPLY**

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

Municipal power supply.

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

Fuel generated generators may be used during periods of municipal power cuts.

**4. ENERGY EFFICIENCY**

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

The use of heavy electrical machinery in the operation of the proposed development has been avoided and/or minimised, thus minimising electricity required for this facility. All operations will be undertaken during daylight hours (i.e. between 8am and 4pm) reducing the need for lighting. Where lighting is required, energy efficient lighting will be used as far as practical.

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

N/A

## SECTION E: IMPACT ASSESSMENT

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

### 1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

Issue/ Comment/ Concern	Response
None at this stage	

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):

The summary of responses from the practitioner to the issues raised by the IAPs have been provided for in Section E:1 above. A Comments and Response Report is attached within Appendix E of the DBAR report. Further comments that will be received during the DBAR review period will be included in the Final BAR that will be submitted to the authorising authority (GDARD)

## 2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

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

The following methodology and criteria was used in assessing impacts related to the proposed development.

- The **Nature**, a description of what causes the effect, what will be affected, and how it will be affected.
- The **Extent**, wherein it is indicated whether the impact will be local (limited to the immediate area or site of development), regional, national or international. A score of between 1 and 5 is assigned as appropriate (with a score of 1 being low and a score of 5 being high).
- The **Duration**, wherein it is indicated whether:
  - The lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
  - The lifetime of the impact will be of a short duration (2-5 years) - assigned a score of 2;
  - Medium-term (5–15 years) – assigned a score of 3;
  - Long term (> 15 years) - assigned a score of 4; or;
  - Permanent - assigned a score of 5.
- The **Magnitude**, quantified on a scale from 0-10, where a score is assigned:
  - 0 is small and will have no effect on the environment;
  - 2 is minor and will not result in an impact on processes;
  - 4 is low and will cause a slight impact on processes;
  - 6 is moderate and will result in processes continuing but in a modified way;
  - 8 is high (processes are altered to the extent that they temporarily cease); and
  - 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The **Probability** of occurrence, which describes the likelihood of the impact actually occurring. Probability is estimated on a scale, and a score assigned:
  - Assigned a score of 1–5, where 1 is very improbable (probably will not happen);
  - Assigned a score of 2 is improbable (some possibility, but low likelihood);
  - Assigned a score of 3 is probable (distinct possibility);
  - Assigned a score of 4 is highly probable (most likely); and
  - Assigned a score of 5 is definite (impact will occur regardless of any prevention measures).

The **Significance**, which is determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high.

- The status, which is described as positive, negative or neutral.
- The degree to which the impact can be reversed.
- The degree to which the impact may cause irreplaceable loss of resources.
- The degree to which the impact can be mitigated.

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

**S= (E+D+M) P;** where

S = Significance weighting

E = Extent



D = Duration  
M = Magnitude  
P = Probability

The significance weightings for each potential impact are as follows:

< 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),

30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),

> 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

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

**IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE**

Construction is limited to the laying of foundations and building of the warehouse/ shed that will house the sorting and recycling machinery.

**Proposed (preferred) Layout - (Sorting and Storage Area on the South West corner) and Alternative Layout 1 (Sorting and Storage Area on the Eastern Boundary)**

**Table 1:** The environmental impacts associated with the construction phase of the Proposed Waste Storage Facility using - Proposed (preferred) Layout - (Sorting and Storage Area on the South West corner) and the Alternative Layout 1 (Sorting and Storage area on the Eastern boundary) are anticipated to be the same during construction and therefore these have been assessed together as follows:

Potential impacts	Proposed mitigation	Risk of the impact and mitigation not being implemented						
<p><b><u>ECOLOGICAL IMPACTS (FLORA)</u></b></p> <p>The vegetation on the site was observed to be highly disturbed and transformed by past impacts and is infested by alien invasive plant species, many of which were declared category 1 invasive species that should be removed. Due to the disturbed state of the vegetation on the site it makes it improbable that the on-site vegetation significantly contributes to the conservation of regional vegetation. There is a significant establishment of exotic plant species, as the majority these inhabited the study site and also proliferated in disturbed environments.</p>								
<p><b>Direct Impact:</b> Establishment and spread of exotic vegetation (alien invasive plant species)</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Mitigation</th> <th>With Mitigation</th> </tr> </thead> <tbody> <tr> <td><b>Extent</b></td> <td>Local (2)</td> <td>Local (2)</td> </tr> </tbody> </table>	Description	Without Mitigation	With Mitigation	<b>Extent</b>	Local (2)	Local (2)	<ul style="list-style-type: none"> <li>▪ Monitor the establishment of alien invasive species within the areas affected by the construction and maintenance and take immediate corrective action such as removal where invasive species are observed to establish.</li> <li>▪ Invasive species could colonise the disturbed soils on site. Invasive species</li> </ul>	<p>A risk of the impact is low</p>
Description	Without Mitigation	With Mitigation						
<b>Extent</b>	Local (2)	Local (2)						

Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented
<b>Duration</b>	Long-term (4)	Short-term (1)	should be eradicated to prevent spread to adjacent natural vegetation. ■ Construction activities must be limited to the site. No construction activities are allowed to impact directly or indirectly on the remaining bushveld vegetation south of the site (e.g. dumping or release of pollutants/effluent etc.).	
<b>Magnitude</b>	Minor (2)	Minor (2)		
<b>Probability</b>	Probable (3)	improbable (2)		
<b>Significance</b>	<b>Low (24)</b>	<b>Low (10)</b>		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impacts:</b> Increased erosion risk as a result of soil disturbance and loss of vegetation cover during construction.			Same as above	Loss of soil fertility however the risk is low as the site terrain is flat
<b>Cumulative impact:</b> The impact is negligible and will not be assessed further.				
<b><u>ECOLOGICAL IMPACTS (FAUNA)</u></b>				
The impact on fauna is expected to be negligible. Presence of indigenous terrestrial vertebrates within the study area is low due to current land use and degradation. No restricted or specific habitat of vertebrates exists on the study area and will be affected by the proposed development. The construction activities on site will have no impact on biodiversity seeing that the site has been developed. Therefore, the impact is not assessed further.				
<b><u>VISUAL IMPACTS</u></b>				
Visual Impacts expected on the construction site.				
<b>Direct Impact:</b> Littering and illegal dumping on the site may result in an alteration of the visual character of the site.			■ Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public	The risk will be medium with or without mitigation.

Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented																					
<table border="1"> <thead> <tr> <th>Description</th> <th>Without Mitigation</th> <th>With Mitigation</th> </tr> </thead> <tbody> <tr> <td>Probability</td> <td>Probable (3)</td> <td>Probable (3)</td> </tr> <tr> <td>Duration</td> <td>Short-term (2)</td> <td>Short-term (2)</td> </tr> <tr> <td>Extent</td> <td>Limited to Local Area (2)</td> <td>Limited to Local Area (2)</td> </tr> <tr> <td>Magnitude</td> <td>Moderate (6)</td> <td>Moderate (2)</td> </tr> <tr> <td>Significance</td> <td>30 (medium)</td> <td>18 (low)</td> </tr> <tr> <td>Status (positive or negative)</td> <td>Negative</td> <td>Negative</td> </tr> </tbody> </table>			Description	Without Mitigation	With Mitigation	Probability	Probable (3)	Probable (3)	Duration	Short-term (2)	Short-term (2)	Extent	Limited to Local Area (2)	Limited to Local Area (2)	Magnitude	Moderate (6)	Moderate (2)	Significance	30 (medium)	18 (low)	Status (positive or negative)	Negative	Negative	<p>places and open spaces during or after the construction period.</p> <ul style="list-style-type: none"> <li>All waste/litter/rubbish generated on-site must be disposed of at an approved dumping site.</li> <li>Supply sufficient garbage bins throughout the site and service regularly.</li> <li>Ensure good housekeeping is implemented at all times.</li> <li>Keep the property neat and litter free at all times.</li> <li>Lighting on site is to be sufficient for safety and security purposes, but shall not be intrusive to neighboring residents, disturb wildlife, or interfere with road traffic;</li> <li>Should overtime/night work be authorized, the Contractor shall be responsible to ensure that lighting does not cause undue disturbance to neighboring residents. In this situation, low flux and frequency lighting shall be utilized.</li> </ul>	
Description	Without Mitigation	With Mitigation																							
Probability	Probable (3)	Probable (3)																							
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Significance	30 (medium)	18 (low)																							
Status (positive or negative)	Negative	Negative																							
<b>Indirect impacts:</b> No known indirect impacts			-	-																					
<b>Cumulative impacts:</b> None			-	-																					
<b><u>NOISE IMPACTS</u></b>																									
<p>Noise Impacts anticipated from construction machinery and vehicles</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Mitigation</th> <th>With Mitigation</th> </tr> </thead> <tbody> <tr> <td>Probability</td> <td>Probable (3)</td> <td>Improbable (2)</td> </tr> <tr> <td>Duration</td> <td>Short-term (2)</td> <td>Short-term (2)</td> </tr> </tbody> </table>			Description	Without Mitigation	With Mitigation	Probability	Probable (3)	Improbable (2)	Duration	Short-term (2)	Short-term (2)	<ul style="list-style-type: none"> <li>Construction activities must be limited to normal working hours (8am-5pm) and according to municipal by-laws and labour laws.</li> <li>No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site.</li> <li>Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc.) must be used as per operating instructions and maintained</li> </ul>	The risk would be medium												
Description	Without Mitigation	With Mitigation																							
Probability	Probable (3)	Improbable (2)																							
Duration	Short-term (2)	Short-term (2)																							

Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented
<b>Extent</b>	Limited to Local Area (2)	Limited to Local Area (2)	<p>properly during site operations.</p> <ul style="list-style-type: none"> <li>▪ Provide Personal Protective Equipment (PPE) such as ear plugs for workers when required.</li> <li>▪ Any person who is or may be exposed to noise at or above the noise-rating limit of 85dBA shall obey any lawful order given to him or her by the employer or self-employed person or by anyone authorized thereto by the employer or self-employed person, regarding -                             <ul style="list-style-type: none"> <li>○ the use of measures adopted for noise control;</li> <li>○ the immediate reporting of defective, damaged or lost noise control equipment to the health and safety representative or the employer;</li> <li>○ the use of personal hearing protectors where provided</li> </ul> </li> <li>▪ A prohibition to enter signage or remain in an area must be displayed where personal hearing protectors are required unless the person is authorized to do so and is wearing the required hearing protectors;</li> </ul>	
<b>Magnitude</b>	Moderate (6)	Moderate (5)		
<b>Significance</b>	30 (medium)	18 (low)		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect Impacts:</b> None			-	-
<b>Cumulative impacts:</b> None, The cumulative impact is negligible and short term during construction.			-	-
<p><b><u>TRAFFIC IMPACTS</u></b></p> <p>Traffic congestion and delay may potentially occur along the access road due to construction activities.</p>				
<b>Direct Impacts:</b> <i>Traffic congestion and delays.</i>			<ul style="list-style-type: none"> <li>▪ It must be ensured that a backlog of traffic does not develop at the access points during peak hours through the implementation of an efficient and effective access control system.</li> <li>▪ Suitable warning and information signage should be erected before</li> </ul>	The risk will be low with or without mitigation
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		

Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented
<b>Probability</b>	Improbable (2)	Improbable (2)	construction commences on the site. <ul style="list-style-type: none"> <li>▪ The existing access roads should be used, where possible.</li> <li>▪ Areas demarcated as being out of bounds for construction personnel must be sign posted and must be regarded strictly as “no-go’ areas. No contractor’s personnel, vehicles or machinery may access these areas. Very strict control must be exercised over this aspect of construction activities.</li> <li>▪ Vehicular movement of construction vehicles beyond the property boundaries of the site should be outside the morning and afternoon peak hours.</li> <li>▪ Ensure that the necessary signage and traffic measures are implemented for safe and convenient access to the site; Measures must also be put in place to ensure that these access points do not get built up with mud or sand.</li> </ul>	
<b>Duration</b>	Short-term (2)	Very short-term (1)		
<b>Extent</b>	Limited to Local Area (2)	Limited to Local Area (1)		
<b>Magnitude</b>	Moderate (5)	Minor (2)		
<b>Significance</b>	<b>18 (Low)</b>	<b>8 (Low)</b>		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impacts:</b> None anticipated			-	-
<b>Cumulative impacts:</b> The impact is negligible and shall not be assessed further			-	-
<b><u>HERITAGE IMPACTS</u></b>				
There are no important cultural heritage resources or graves near the proposed sites. Nonetheless some of these heritage resources such as graves occur below ground and these could be exhumed during excavations which will take place for the laying of foundations.				
<b>Direct impacts:</b> Heritage Impacts and Probability of artifacts present on site			<ul style="list-style-type: none"> <li>▪ Should graves, fossils or any archaeological artefacts be exhumed during construction, work on the area where the artefacts were found must cease immediately and it should immediately be reported to a heritage practitioner</li> </ul>	The risk is low with or without mitigation

Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>	so that an investigation and evaluation of the finds can be made.	
<b>Probability</b>	Improbable (2)	Very Improbable (1)		
<b>Duration</b>	Short-term (2)	Very short-term (1)		
<b>Extent</b>	Limited to Local Area (2)	Limited to Local Area (1)		
<b>Magnitude</b>	Moderate (5)	Small (0)		
<b>Significance</b>	<b>18 (Low)</b>	<b>2 (Low)</b>		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impacts:</b> None anticipated.			-	-
<b>Cumulative impacts:</b> The loss of a number of heritage resources in the region			The same as mitigation measures for direct impacts will apply for cumulative impacts.	The cumulative impact is negligible.
<b><u>SAFETY AND SECURITY IMPACTS</u></b>				
<b>Direct impacts:</b> Safety and security on the site			<ul style="list-style-type: none"> <li>▪ All flammable substances must be stored in dry area which does not pose an ignition risk to the said substances.</li> <li>▪ Ensure all construction vehicles and machinery is under the control of competent personnel.</li> <li>▪ No fires must be allowed on site.</li> <li>▪ Emergency preparedness and response plan for the operations must be developed and approved.</li> <li>▪ Fire extinguishers on site.</li> <li>▪ Limit access to the construction site to the workforce only.</li> </ul>	The risk is low with or without mitigation
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		
<b>Probability</b>	Highly Probable (4)	Improbable (2)		
<b>Duration</b>	Short-term (2)	Very short-term (1)		
<b>Extent</b>	Limited to Local	Limited to Local		

Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented
	Area (2)	Area (1)	<ul style="list-style-type: none"> <li>▪ Comply with the requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).</li> <li>▪ Construction footprints, including site offices, excavations, storage areas, materials lay-down areas, stockpile area, and workers rest areas should be clearly demarcated or fenced off before construction commences.</li> <li>▪ All construction activities should be limited to the demarcated areas.</li> <li>▪ Access to these demarcated areas strictly controlled.</li> <li>▪ Entry points and access routes to the sites must be clearly marked and traffic limited to those areas as far as possible.</li> <li>▪ Suitable warning and information signage should be erected before construction commences.</li> <li>▪ Adequate sanitary and ablutions facilities must be provided for construction workers</li> <li>▪ Construction sites by their nature act as a magnet to the unemployed, so large numbers of people may gather on or around the site. These people must be kept off the site for safety reasons.</li> </ul>	
<b>Magnitude</b>	Moderate (6)	Minor (2)		
<b>Significance</b>	40 (Medium)	8 (Low)		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect Impacts:</b> None			-	-
<b>Cumulative Impacts:</b> None			-	-
<b><u>WASTE MANAGEMENT</u></b>				
<b>Direct impact:</b> Pollution due to inappropriate management of waste on the construction site			<ul style="list-style-type: none"> <li>▪ Regular litter picking (good housekeeping).</li> <li>▪ Waste bins/skips must be readily available for litter disposal.</li> <li>▪ All solid waste generated during the construction process must be placed in a designated waste collection area within the site and must not be allowed to blow around the site, be accessible to animals, or be placed in piles</li> </ul>	The risk will be medium
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		



Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented
<b>Probability</b>	Highly Probable (4)	Probable (3)	adjacent the waste skips / bins. All solid waste must then be disposed of at the licensed landfill and safe disposal certificates obtained. Separate waste skips/ bins for must be provided for general and hazardous waste. General and hazardous waste must not be mixed. <ul style="list-style-type: none"> <li>▪ The waste containers must be appropriate to the waste type contained therein and where necessary should be lined and covered.</li> <li>▪ No waste (hazardous or general) will be disposed of within the construction footprint. All hazardous material must be carefully stored on site and then disposed of offsite at the licensed hazardous landfill site</li> <li>▪ Adequate toilet facilities must be provided for all staff members as standard construction practice. Monitor the sewerage facilities for spillages, and handle any spillages as hazardous waste;</li> <li>▪ Chemical toilets must be placed within the construction site</li> <li>▪ The chemical toilets to be provided must be from a registered company and all sewage must be disposed of at an appropriate facility. Safe disposal certificates must be kept on record.</li> <li>▪ Machinery must be properly maintained to keep oil leaks in check</li> </ul>	
<b>Duration</b>	Short-term (2)	Very short-term (1)		
<b>Extent</b>	Limited to Local Area (2)	Limited to Local Area (1)		
<b>Magnitude</b>	Moderate (6)	Moderate (6)		
<b>Significance</b>	40 (Medium)	24 (Low)		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impacts:</b> None			-	-
<b>Cumulative impacts:</b> None			-	-
<b>POTENTIAL SOIL AND GROUNDWATER CONTAMINATION</b>				
<b>Direct impacts:</b> Inappropriate handling and storage of hazardous chemicals and materials			<ul style="list-style-type: none"> <li>▪ Any hazardous or dangerous goods utilised during the construction phase must be stored on an impermeable surface that is bunded, fenced, locked and covered.</li> </ul>	The risk will be medium

Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>	<ul style="list-style-type: none"> <li>▪ A spill kit must be clearly marked and visible when utilising hazardous or dangerous materials to ensure all spills can be immediately cleaned.</li> <li>▪ Remediation of spillages must be conducted on a continual basis and within 24 hours of a spillage;</li> <li>▪ Contaminated soil will be considered to be hazardous waste and disposed of accordingly by a registered waste handling company to the nearest landfill that accepts hazardous waste.</li> <li>▪ The contractors must provide and maintain a method statement for mixing of cement and asphalt. The method statement must provide information on proposed location, storage, washing and disposal of cement, packaging, tools and plant storage.</li> <li>▪ Washing and cleaning of equipment and vehicles should also be done within a bermed area (wash bay area). These sites must be rehabilitated prior to commencing the operational phase.</li> <li>▪ The mixing of concrete should only be done at specifically selected sites on mortar boards or similar structures to contain pollution</li> <li>▪ Materials such as fuel and oil must be sealed and stored in bunded areas or under lock and key, as appropriate, in well-ventilated areas</li> <li>▪ Drip trays (minimum of 10cm deep) must be placed under all vehicles suspected of leaking these must not be left unattended, drip trays must be utilised.</li> <li>▪ Drip trays must be utilised during repairs and maintenance of all machinery. The depth of the drip tray must be determined considering the total amount / volume of oil in the vehicle. The drip tray must be able to contain the volume of oil in the vehicle.</li> </ul>	
<b>Probability</b>	Highly Probable (4)	Probable (3)		
<b>Duration</b>	Short-term (2)	Very short-term (1)		
<b>Extent</b>	Limited to Local Area (2)	Limited to Local Area (1)		
<b>Magnitude</b>	Moderate (6)	Moderate (6)		
<b>Significance</b>	<b>40 (Medium)</b>	<b>24 (Low)</b>		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impact:</b> None			-	-

Potential impacts	Proposed mitigation	Risk of the impact and mitigation not being implemented															
<i>Cumulative impact:</i> None	-	-															
<b><u>SOIL EROSION AND LOSS OF TOPSOIL</u></b>																	
<p><b>Direct impacts:</b></p> <ul style="list-style-type: none"> <li>▪ Increased erosion risk as a result of soil disturbance and loss of vegetation cover during construction.</li> <li>▪ Loss of fertile topsoil due to the initial vegetation clearing (for the depot) and increased storm water runoff</li> <li>▪ Occupation of the site by development footprint</li> <li>▪ Construction activities which disturb the natural soil profile</li> </ul>	<ul style="list-style-type: none"> <li>▪ Strip and stockpile topsoil from areas where excavations are made.</li> <li>▪ Re-spread topsoil after completion of construction.</li> <li>▪ Ensure that adequate erosion measures are in place and limit direct footprint.</li> <li>▪ Explore the potential to re-establish vegetation immediately when construction is completed in the area</li> <li>▪ Limit vehicle movement to identified access routes and ensure that dust suppression is exercised during dry seasons and during maximum vehicle movement</li> <li>▪ Topsoil (top 300mm as a minimum) shall be stripped from all areas to be utilized during construction period and where permanent structures and access is required.</li> <li>▪ Topsoil shall be stripped when it is in a dry condition in order to prevent compaction.</li> </ul>	The risk will be medium															
<table border="1"> <thead> <tr> <th>Description</th> <th>Without Mitigation</th> <th>With Mitigation</th> </tr> </thead> <tbody> <tr> <td><i>Probability</i></td> <td>Highly Probable (4)</td> <td>Highly Probable (4)</td> </tr> <tr> <td><i>Duration</i></td> <td>Medium-term (3)</td> <td>Medium-term (3)</td> </tr> <tr> <td><i>Extent</i></td> <td>Limited to Local Area (2)</td> <td>Limited to Local Area (2)</td> </tr> <tr> <td><i>Magnitude</i></td> <td>High (8)</td> <td>Low (4)</td> </tr> </tbody> </table>	Description	Without Mitigation	With Mitigation	<i>Probability</i>	Highly Probable (4)	Highly Probable (4)	<i>Duration</i>	Medium-term (3)	Medium-term (3)	<i>Extent</i>	Limited to Local Area (2)	Limited to Local Area (2)	<i>Magnitude</i>	High (8)	Low (4)		
Description	Without Mitigation	With Mitigation															
<i>Probability</i>	Highly Probable (4)	Highly Probable (4)															
<i>Duration</i>	Medium-term (3)	Medium-term (3)															
<i>Extent</i>	Limited to Local Area (2)	Limited to Local Area (2)															
<i>Magnitude</i>	High (8)	Low (4)															

Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented
<b>Significance</b>	52 (medium)	21 (low)		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impacts:</b> Infertile soils			<ul style="list-style-type: none"> <li>Same as above</li> </ul>	The risk is very low
<b>Cumulative impacts; None</b>			-	--
<b><u>SOCIAL NEGATIVE IMPACTS</u></b>				
<p><b>Direct Impacts:</b> Social impacts anticipated during the construction period</p> <ul style="list-style-type: none"> <li>Damage to surrounding neighbours' properties i.e.: houses, fence lines, and accesses,</li> <li>Influx of workers in the area</li> </ul>			<ul style="list-style-type: none"> <li>All adjacent landowners must be informed of the construction processes prior to commencement of construction activities.</li> <li>Access to the construction site must be strictly controlled.</li> <li>Entry points and access routes to the sites must be clearly marked and traffic limited to those areas as far as possible.</li> <li>Mechanisms should be implemented to deal with people seeking employment in order to minimise any issues related to the influx of people.</li> <li>All construction activities should be limited to the demarcated areas.</li> <li>Access to these demarcated areas should be strictly controlled.</li> <li>Adequate sanitary and ablutions facilities must be provided for construction workers as standard construction practice.</li> <li>The Contractor shall provide sanitation facilities in the form of chemical toilets, at all camps, offices, workshops and construction sites for staff and visitors. No other form of sanitation will be permitted unless a connection with a local sewer main is possible. The provision of this facility will comply with current legislation.</li> </ul>	The risk is medium
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		
<b>Probability</b>	Probable (3)	Probable (3)		
<b>Duration</b>	Short-term (2)	Very short-term (1)		
<b>Extent</b>	Limited to Local Area (2)	Limited to Local Area (1)		
<b>Magnitude</b>	Moderate (6)	Small (0)		
<b>Significance</b>	30 (medium)	6(Low)		

Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented
<b>Status (positive or negative)</b>	Negative	Negative	<ul style="list-style-type: none"> <li>▪ A minimum of one toilet per 11 people or within 100 meters of the work site in order to prevent any breach of sanitary bylaws or offence to public decency.</li> <li>▪ All staff is to use the toilets at all times rather than informal defecation in the environment.</li> <li>▪ Toilets are to meet the minimum requirements of the OHS ACT.</li> <li>▪ Ablutions are to be cleaned/emptied before they are full and contaminate the environment.</li> <li>▪ Any sewerage spillages must be regarded as hazardous and cleaned up immediately using appropriate PPE.</li> <li>▪ A sewage leak due to accidental damage to a sewerage service must contain the spillage. The spillage may not leave the site. The relevant authority must be notified, all necessary precautions against veldt fires and also to protect material on site shall be taken.</li> <li>▪ No fires for warming or cooking are allowed outside of secured areas in the construction site.</li> </ul>	
<b>Indirect impacts:</b> No known indirect impacts			-	-
<b>Cumulative impacts:</b> None			-	-
<b><u>SOCIAL POSITIVE IMPACTS</u></b>				

Potential impacts	Proposed mitigation	Risk of the impact and mitigation not being implemented																					
<p><b>Direct impact:</b> The construction phase will lead to positive social benefits, such as job creation and small businesses opportunities such as waste collection and transportation, supplier of construction materials etc. (Direct employment and skills development).</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Enhancement</th> <th>With Enhancement</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local-Regional (2)</td> <td>Local-Regional (2)</td> </tr> <tr> <td>Duration</td> <td>Short-term (1)</td> <td>Short-term (1)</td> </tr> <tr> <td>Magnitude</td> <td>Small (1)</td> <td>Low (4)</td> </tr> <tr> <td>Probability</td> <td>Probable (3)</td> <td>Probable (3)</td> </tr> <tr> <td>Significance</td> <td>Low (12)</td> <td>Low (21)</td> </tr> <tr> <td>Status (positive or negative)</td> <td>Positive</td> <td>Positive</td> </tr> </tbody> </table>	Description	Without Enhancement	With Enhancement	Extent	Local-Regional (2)	Local-Regional (2)	Duration	Short-term (1)	Short-term (1)	Magnitude	Small (1)	Low (4)	Probability	Probable (3)	Probable (3)	Significance	Low (12)	Low (21)	Status (positive or negative)	Positive	Positive	<p><b>Enhancement:</b></p> <ul style="list-style-type: none"> <li>It is recommended that local employment policy is adopted to maximise the opportunities made available to the local labour force.</li> <li>Where reasonable and practical PIKITUP should appoint local contractors and implement a (local first) policy especially for semi-skilled and low skilled job categories.</li> </ul>	<p>The impact is positive. No risk exist</p>
Description	Without Enhancement	With Enhancement																					
Extent	Local-Regional (2)	Local-Regional (2)																					
Duration	Short-term (1)	Short-term (1)																					
Magnitude	Small (1)	Low (4)																					
Probability	Probable (3)	Probable (3)																					
Significance	Low (12)	Low (21)																					
Status (positive or negative)	Positive	Positive																					
<p><b>Indirect impact:</b> Local employed people during the construction phase may learn new skills thereby making them more employable in the future.</p>	<p>Same as above</p>	<p>Same as above</p>																					
<p><b>Cumulative impact:</b> Increased skilled labourers in the local area</p>	<p>Same as above</p>	<p>Same as above</p>																					
<p><b><u>AIR QUALITY IMPACTS</u></b></p> <p>Movement of heavy duty vehicles and machinery on site will generate dust. Limited gaseous or particulate emissions are anticipated from exhaust emissions from construction equipment on-site.</p>																							

Potential impacts			Proposed mitigation	Risk of the impact and mitigation not being implemented
<b>Direct impact:</b> Dust generated during vehicle movement			<ul style="list-style-type: none"> <li>▪ Speed restriction of 40km/h must be implemented for all construction vehicles.</li> <li>▪ All vehicles transporting friable materials such a sand, rubble etc. must be covered by a tarpaulin or wet down.</li> <li>▪ No burning of refuse or vegetation is permitted.</li> <li>▪ An appropriate dust suppressant must be applied on all exposed areas as required to minimise/control airborne dust.</li> <li>▪ The developer must hard-pack the waste management facility area as a permanent solution to the dust problem.</li> <li>▪ Construction vehicles must be in good working order.</li> </ul>	The risk with or with mitigation is low
Description	Without Mitigation	With Mitigation		
Extent	Local (1)	Local (1)		
Duration	Long-term (4)	Long-term (4)		
Magnitude	Minor (2)	Small (1)		
Probability	Highly probable (4)	Improbable (2)		
Significance	Low (28)	Low (12)		
<b>Indirect impacts:</b> Potential health concerns for the construction crew exposed to dust			-	-
<b>Cumulative impacts:</b> None			-	-

**IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE**

**Proposed Preferred Layout (Sorting and Storage Area on the **South West corner**) - Preferred**

**Table 1:** The environmental impacts associated with the **Operation phase** of the Proposed Waste Storage Facility using - **Proposed Preferred Layout (Sorting and Storage Area on the **South West corner**)** are anticipated as follows:

Potential impacts:	Proposed mitigation:	Risk of the impact and mitigation not being implemented															
<b><u>ECOLOGICAL IMPACTS (FLORA)</u></b>																	
<p>The vegetation on the site was observed to be highly disturbed and transformed by past impacts and is infested by alien invasive plant species, many of which were declared category 1 invasive species that should be removed. Due to the disturbed state of the vegetation on the site it makes it improbable that the on-site vegetation significantly contributes to the conservation of regional vegetation. There is a significant establishment of exotic plant species, as the majority these inhabited the study site and also proliferated in disturbed environments.</p>																	
<p><b>Direct impacts:</b> Introduction and spread of exotic vegetation</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #cccccc;">Description</th> <th style="background-color: #cccccc;">Without Mitigation</th> <th style="background-color: #cccccc;">With Mitigation</th> </tr> </thead> <tbody> <tr> <td><b>Extent</b></td> <td>Local (2)</td> <td>Local (2)</td> </tr> <tr> <td><b>Duration</b></td> <td>Long-term (4)</td> <td>Short-term (1)</td> </tr> <tr> <td><b>Magnitude</b></td> <td>Low (4)</td> <td>Minor (2)</td> </tr> <tr> <td><b>Probability</b></td> <td>Highly Probable (4)</td> <td>improbable (2)</td> </tr> </tbody> </table>	Description	Without Mitigation	With Mitigation	<b>Extent</b>	Local (2)	Local (2)	<b>Duration</b>	Long-term (4)	Short-term (1)	<b>Magnitude</b>	Low (4)	Minor (2)	<b>Probability</b>	Highly Probable (4)	improbable (2)	<ul style="list-style-type: none"> <li>▪ Invasive species could colonise the disturbed soils onsite if left unmanaged and allowed to grow. Invasive species should be eradicated and not allowed to spread to adjacent natural vegetation.</li> <li>▪ Operation activities must be limited to the site. No operational activities are allowed to impact directly or indirectly on the remaining surrounding vegetation (e.g. dumping or release of pollutants/effluent etc.).</li> </ul>	<p>The risk will be medium</p>
Description	Without Mitigation	With Mitigation															
<b>Extent</b>	Local (2)	Local (2)															
<b>Duration</b>	Long-term (4)	Short-term (1)															
<b>Magnitude</b>	Low (4)	Minor (2)															
<b>Probability</b>	Highly Probable (4)	improbable (2)															



Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Significance</b>	<b>Medium (40)</b>	<b>Low (10)</b>		
<b>Status (positive or negative)</b>	Negative	Negative		
<i>Indirect impact:</i> None anticipated			-	-
<i>Cumulative impact:</i> None			-	-
<b><u>ECOLOGICAL IMPACTS (FAUNA)</u></b>				
<p>The impact on fauna is expected to be negligent. Presence of indigenous terrestrial vertebrates within the study area is low due to current land use and degradation. No restricted or specific habitat of vertebrates exists on the study area and will be affected by the proposed development. The construction activities on site will have no impact on biodiversity seeing that the site has been developed. Therefore, the impact is not assessed further.</p>				
<b><u>VISUAL IMPACTS</u></b>				
Visual Impacts expected on the construction site.				
<p><i>Direct impacts:</i> Pollution may occur due to the littering and illegal dumping on the site and surrounding areas which can affect the visual character of the site.</p>			<ul style="list-style-type: none"> <li>• Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces during or after the construction period.</li> <li>• All waste/litter/rubbish etc. must be disposed of at an approved dumping site as approved by the Council.</li> <li>• The landscape must be rehabilitated in such a way that it</li> </ul>	
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		
<b>Probability</b>	Probable (3)	Probable (3)		

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Duration</b>	Short term (2)	Very short duration(1)	corresponds to the surrounding topography; <ul style="list-style-type: none"> <li>Should overtime/night work be authorized, the Contractor shall be responsible to ensure that lighting does not cause undue disturbance to neighbouring residents.</li> </ul>	
<b>Extent</b>	Limited to Local Area (2)	Limited to Site (1)		
<b>Magnitude</b>	Low (4)	Minor (2)		
<b>Significance</b>	<b>24 (Low)</b>	<b>12 (Low)</b>		
<b>Status (positive or negative)</b>	Negative	Negative		
<b><u>NOISE IMPACTS</u></b>				
<b>Direct impacts:</b> Noise Impacts anticipated from recycling and sorting machinery and vehicles.			<ul style="list-style-type: none"> <li>Operation activities must be limited to normal working hours (8am-5pm) and according to municipal by-laws and labour laws.</li> <li>No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site.</li> <li>Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc.) must be used as per operating instructions and maintained properly during site operations.</li> <li>Provide Personal Protective Equipment (PPE) such as ear</li> </ul>	
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		
<b>Probability</b>	Probable (3)	Probable (3)		
<b>Duration</b>	Short term (2)	Very short duration(1)		

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Extent</b>	Limited to Local Area (2)	Limited to Site (1)	plugs for workers when required. <ul style="list-style-type: none"> <li>Any person who is or may be exposed to noise at or above the noise-rating limit of 85dBA shall obey any lawful order given to him or her by the employer or self-employed person or by anyone authorized thereto by the employer or self-employed person.</li> </ul>	
<b>Magnitude</b>	Low (4)	Minor (2)		
<b>Significance</b>	24 (Low)	12 (Low)		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect Impacts:</b> Minimal				
<b>Cumulative impacts:</b> Negilent,				
<b><u>TRAFFIC IMPACTS</u></b>				
Traffic congestion and delay may potentially occur along the access road due to operational activities.				
<b>Direct Impacts:</b> Impeded traffic flow due to entrance/ exit from the waste facility and the movement of trucks to and from the waste facility.			<ul style="list-style-type: none"> <li>All signage and road markings for the proposed site should be in accordance with the South African Road Traffic Signs Manual".</li> <li>Ensure that the necessary signage and traffic measures are implemented for safe and convenient access to the site;</li> <li>Measures must also be put in place to ensure that these access points do not get built up with mud or sand.</li> <li>Vehicular movement of truck and waste transport vehicles beyond the property boundaries should not take place.</li> </ul>	
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		
<b>Probability</b>	Highly Probable	Probable (3)		

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented						
	(4)									
<b>Duration</b>	Long-term (4)	Short-term (2)								
<b>Extent</b>	Local (2)	Local (2)								
<b>Magnitude</b>	High (8)	Moderate (6)								
<b>Significance</b>	48 (Medium)	Low (24)								
<b>Status (positive or negative)</b>	Negative	Negative								
<i>Indirect Impacts: Traffic congestion and delays near entrance</i>										
<i>Cumulative impacts: Minimal</i>										
<b><u>POTENTIAL FIRE INCIDENT</u></b>										
Whole waste stockpiles are flammable and when they are stored together in large volumes, they can create a fire hazard. This can significantly cause damage to property, air pollution (from noxious smoke), create run-off of toxic oil, dangerous heavy metals and soot causing soil pollution. In addition, smoke from burning waste contains toxic chemicals and particulate matter that can impact on human health.										
<b>Direct impact</b> Accidental fire incidents may occur due to the temporary storage of waste on site.			<ul style="list-style-type: none"> <li>▪ No fires permitted on site.</li> <li>▪ A security attendant trained in fire prevention must be on site at all times.</li> <li>▪ Ensure adequate firefighting equipment is available on site and serviced according to requirements.</li> <li>▪ Ensure that a minimum of two employees onsite are trained in</li> </ul>	The possible risk is medium						
<table border="1"> <thead> <tr> <th>Description</th> <th>Without Mitigation</th> <th>With Mitigation</th> </tr> </thead> <tbody> <tr> <td><b>Extent</b></td> <td>Local (2)</td> <td>Local (2)</td> </tr> </tbody> </table>			Description	Without Mitigation	With Mitigation	<b>Extent</b>	Local (2)	Local (2)		
Description	Without Mitigation	With Mitigation								
<b>Extent</b>	Local (2)	Local (2)								

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Duration</b>	Long-term (4)	Long-term (4)	fire-fighting. <ul style="list-style-type: none"> <li>▪ No single stockpile of wastes may exceed 3 meters in height, a length of 20 meters and a width of 10 meters.</li> <li>▪ The edges of the stockpiles must be 8 metres from the perimeter fence, and any buildings, and the area between the stockpiles and fence and buildings must be clear of any debris and vegetation</li> <li>▪ All interior firebreaks between piles of waste must be at least 5 metres wide.</li> <li>▪ The developer must ensure that all site personnel are aware of the fire risks and how to deal with any fires that occur. This shall include, but not be limited to:                             <ul style="list-style-type: none"> <li>▪ Regular fire prevention talks</li> <li>▪ Posting of regular reminders to staff</li> </ul> </li> </ul>	
<b>Magnitude</b>	High (8)	Low (4)		
<b>Probability</b>	Probable (3)	improbable (2)		
<b>Significance</b>	Medium (42)	Low (20)		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impact:</b> None			-	-
<b>Cumulative impact:</b> None			-	-
<b><u>POTENTIAL SOIL AND GROUNDWATER CONTAMINATION</u></b>				
<b>Direct impacts:</b> Most of the site is bare ground and soil and groundwater pollution may occur may occur due to: <ul style="list-style-type: none"> <li>▪ Hydrocarbon leaks from site operation equipment e.g. (fork lift/Bobcat) and from heavy duty vehicles that will assess site;</li> <li>▪ Inappropriate handling and storage of hydrocarbons</li> </ul>			<ul style="list-style-type: none"> <li>▪ Transportation vehicles and operation machinery (e.g. forklift/Bobcat) are to be maintained in good working order, to avoid the probability of leakages of fuels and lubricants.</li> <li>▪ All hazardous material must be stored in the necessary containers/bunded areas and in demarcated areas to prevent a spill or contamination of the site.</li> <li>▪ For a long-term mitigation measure, the site must be hard-</li> </ul>	Due to the nature and scale of the development site, the risk will be low with mitigation.

Potential impacts:	Proposed mitigation:	Risk of the impact and mitigation not being implemented																					
<p>on site</p> <ul style="list-style-type: none"> <li>▪ The waste storage facility may be an additional potential source of subsurface contamination.</li> <li>▪ Accidental fires from the burning of wastes resulting in soil pollution</li> </ul>	<p>packed.</p> <ul style="list-style-type: none"> <li>▪ Washing and cleaning of equipment and vehicles should also be done within a bermed area (wash bay area).</li> </ul>																						
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<b>Significance</b>	<b>Medium (40)</b>	<b>Low (12)</b>																					
<b>Status (positive or negative)</b>	Negative	Negative																					
<b>Indirect impact:</b> None	-	-																					
<b>Cumulative impact:</b> None	-	-																					
<p><b><u>POTENTIAL IMPACT ON STORM WATER</u></b></p> <p>Presently, there is no provision for storm water infrastructure available on the site. During the rainy season, this may result in pooling of storm water in storage and operation areas. Contamination of storm water may occur. Management of storm water on site during the rainy conditions will therefore, be required. The section below provides a guideline for the management of storm water on site.</p>																							

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Direct impacts:</b> Contamination of storm water			<ul style="list-style-type: none"> <li>A detailed storm water management plan must be compiled for the site (including storm water measures to be implemented temporarily during construction phase and permanent measures to be installed for the operation phase) must be developed prior to commencing with activities on site by a suitably qualified engineer and approved by the Local Municipality.</li> </ul>	The risk is medium
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		
<b>Probability</b>	Highly Probable (4)	Improbable (2)		
<b>Duration</b>	Short-term (1)	Very short-term (1)		
<b>Extent</b>	Limited to Local Area (1)	Limited to Local Area (1)		
<b>Magnitude</b>	Moderate (6)	Minor (2)		
<b>Significance</b>	<b>32 (Medium)</b>	<b>8 (Low)</b>		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impacts:</b> Degradation of the nearest watercourses			Same as above	The risk is negligible
<b>Cumulative impact:</b> Contamination of watercourse that may occur in the area			Same as above	The risk is negligible
<p><b><u>POTENTIAL POLLUTION FROM WASTE SORTING AND RECYCLING MANAGEMENT</u></b></p> <p>The temporary storage and handling of a variety of wastes may result in pollution due to inappropriate handling. In addition, the facility will generate both general and minimal hazardous waste during its operation phase which may result in unsightliness and pollution if not properly managed. Impacts are expected to be of low significance which, in most instances could be reduced to a lower impact through appropriate mitigation.</p>				
<b>Direct impacts:</b> Potential pollution from waste			<ul style="list-style-type: none"> <li>Regular litter picking and general waste bins must be readily</li> </ul>	The risk is low with or without

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
management .			<p>available for litter disposal and general housekeeping.</p> <ul style="list-style-type: none"> <li>▪ All solid waste generated during the operation phase must be placed in a designated waste collection area within the depot and must not be allowed to blow around the site.</li> <li>▪ All solid waste must then be disposed of at the nearest licensed landfill and safe disposal certificates obtained.</li> <li>▪ Separate waste skips/ bins for the different waste streams must be available on site.</li> <li>▪ The waste containers must be appropriate to the waste type contained therein and where necessary should be lined and covered. This will be managed through the site specific EMPr and monitored by the Facility Manager.</li> <li>▪ All hazardous material must be carefully stored and then disposed of offsite at the licensed hazardous landfill site</li> <li>▪ Adequate toilet facilities must be provided for all staff members as standard health and safety practice.</li> <li>▪ Ensure that no litter, refuse, waste, generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces</li> <li>▪ All waste/litter/rubbish etc must be disposed of at an approved dumping site.</li> <li>▪ Keep the property neat and litter free at all times and maintain the landscaped areas.</li> <li>▪ Where possible generated waste on site should be recycled or reused.</li> </ul>	mitigation
Description	Without Mitigation	With Mitigation		
Extent	Local (1)	Local (1)		
Duration	Long-term (4)	Long-term (4)		
Magnitude	Low (1)	Low (1)		
Probability	Highly probable (4)	Probable (3)		
Significance	<b>Low (24)</b>	<b>Low (18)</b>		
Status (positive or negative)	Negative	Negative		



Potential impacts:	Proposed mitigation:	Risk of the impact and mitigation not being implemented									
	<ul style="list-style-type: none"> <li>▪ General and hazardous waste must be stored in separate waste receptacles.</li> <li>▪ Burning or burying of waste material will not be permitted on site.</li> <li>▪ All hazardous waste must be disposed of at a registered hazardous waste disposal facility.</li> <li>▪ Documentation (waste manifest) must be maintained detailing the quantity, type of waste brought to site for pre-processing and that taken offsite to recycling facilities. Waste management records must be available for review at any time.</li> </ul>										
<b>Indirect impact:</b> None	-	-									
<b>Cumulative impact:</b> None	-	-									
<b><u>MANAGEMENT OF HAZARDOUS MATERIALS</u></b>											
<p><b>Direct Impacts:</b> Potential pollution from inappropriate management and storage of hazardous chemicals and materials on site</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Mitigation</th> <th>With Mitigation</th> </tr> </thead> <tbody> <tr> <td><b>Probability</b></td> <td>Highly Probable (4)</td> <td>Probable (3)</td> </tr> <tr> <td><b>Duration</b></td> <td>Short-term (2)</td> <td>Very short-term (1)</td> </tr> </tbody> </table>	Description	Without Mitigation	With Mitigation	<b>Probability</b>	Highly Probable (4)	Probable (3)	<b>Duration</b>	Short-term (2)	Very short-term (1)	<ul style="list-style-type: none"> <li>▪ Any hazardous or dangerous goods utilized during the operation phase must be stored on an impermeable surface that is bunded, fenced, locked and covered.</li> <li>▪ A spill kit must be available on site for the clean-up of spillages on site</li> <li>▪ A spill kits must be clearly marked and visible when utilizing hazardous or dangerous materials to ensure all spills can be immediately cleaned.</li> <li>▪ Remediation of spillages must be conducted on a continual basis and within 24h of spillage;</li> </ul>	The risk is medium
Description	Without Mitigation	With Mitigation									
<b>Probability</b>	Highly Probable (4)	Probable (3)									
<b>Duration</b>	Short-term (2)	Very short-term (1)									

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented																					
<b>Extent</b>	Limited to Local Area (2)	Limited to Local Area (1)	<ul style="list-style-type: none"> <li>Contaminated soil will be considered to be hazardous waste and disposed of accordingly.</li> </ul>																						
<b>Magnitude</b>	Moderate (6)	Moderate (6)																							
<b>Significance</b>	40 (Medium)	24 (Low)																							
<b>Status (positive or negative)</b>	Negative	Negative																							
<b>Indirect impact:</b> None			-	-																					
<b>Cumulative impact:</b> None anticipated			-	-																					
<p><b><u>SOCIAL POSITIVE IMPACTS</u></b></p> <p>It is expected that the project will create employment opportunities. Job opportunities will be available to skilled personnel (e.g. management and supervisory), semi-skilled personnel (e.g. equipment operators), and low-skilled staff (e.g. security personnel, waste handlers and cleaners). Positive social impacts are expected to be of low significance due mechanized operations.</p>																									
<p><b>Direct impacts:</b> Direct employment and skills development through the facility for those that will be employed during the operation phase.</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Enhancement</th> <th>With Enhancement</th> </tr> </thead> <tbody> <tr> <td><b>Extent</b></td> <td>Local-Regional (1)</td> <td>Local (3)</td> </tr> <tr> <td><b>Duration</b></td> <td>Medium-term (3)</td> <td>Medium-term (3)</td> </tr> <tr> <td><b>Magnitude</b></td> <td>Small (0)</td> <td>Small (0)</td> </tr> <tr> <td><b>Probability</b></td> <td>Definite (5)</td> <td>Definite (5)</td> </tr> <tr> <td><b>Significance</b></td> <td>Low(20)</td> <td>Low (30)</td> </tr> <tr> <td><b>Status (positive)</b></td> <td>Positive</td> <td>Positive</td> </tr> </tbody> </table>			Description	Without Enhancement	With Enhancement	<b>Extent</b>	Local-Regional (1)	Local (3)	<b>Duration</b>	Medium-term (3)	Medium-term (3)	<b>Magnitude</b>	Small (0)	Small (0)	<b>Probability</b>	Definite (5)	Definite (5)	<b>Significance</b>	Low(20)	Low (30)	<b>Status (positive)</b>	Positive	Positive	<p><b>Enhancement:</b></p> <ul style="list-style-type: none"> <li>It is recommended that local employment policy is adopted to maximise the opportunities made available to the local labour force.</li> <li>Where reasonable and practical the developer should appoint local contractors and implement a (local first) policy especially for semi-skilled and low skilled job categories.</li> <li>Training and skills development programmes should be initiated prior to the commencement of the operation phase.</li> </ul>	None, it is a positive impact
Description	Without Enhancement	With Enhancement																							
<b>Extent</b>	Local-Regional (1)	Local (3)																							
<b>Duration</b>	Medium-term (3)	Medium-term (3)																							
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<b>Probability</b>	Definite (5)	Definite (5)																							
<b>Significance</b>	Low(20)	Low (30)																							
<b>Status (positive)</b>	Positive	Positive																							

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented																		
<i>or negative)</i>																						
<p><b>Indirect impact:</b> The key social issues associated with the operation phase of the Waste Management Facility include positive indirect social impacts as follows: Economic multiplier effects from the use of local contractors and development of related businesses such as waste collectors, pyrolysis facilities and waste transporters This will also result in the creation of indirect job opportunities in the region</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Enhancement</th> <th>With Enhancement</th> </tr> </thead> <tbody> <tr> <td><b>Extent</b></td> <td>Local-Regional (2)</td> <td>Local-Regional (2)</td> </tr> <tr> <td><b>Duration</b></td> <td>Medium-term (1)</td> <td>Medium-term (1)</td> </tr> <tr> <td><b>Magnitude</b></td> <td>Moderate (6)</td> <td>High (8)</td> </tr> <tr> <td><b>Probability</b></td> <td>Definite (5)</td> <td>Definite (5)</td> </tr> <tr> <td><b>Significance</b></td> <td><b>Medium (40)</b></td> <td><b>Medium (55)</b></td> </tr> </tbody> </table>			Description	Without Enhancement	With Enhancement	<b>Extent</b>	Local-Regional (2)	Local-Regional (2)	<b>Duration</b>	Medium-term (1)	Medium-term (1)	<b>Magnitude</b>	Moderate (6)	High (8)	<b>Probability</b>	Definite (5)	Definite (5)	<b>Significance</b>	<b>Medium (40)</b>	<b>Medium (55)</b>	<p><b>Enhancement:</b></p> <ul style="list-style-type: none"> <li>It is recommended that local contractors are used to maximize the opportunities made available to the local labor force.</li> <li>Develop a database of local BEE service providers and ensure that they are informed of economic opportunities in the waste industry.</li> </ul>	No risk, the impact is positive
Description	Without Enhancement	With Enhancement																				
<b>Extent</b>	Local-Regional (2)	Local-Regional (2)																				
<b>Duration</b>	Medium-term (1)	Medium-term (1)																				
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<b>Probability</b>	Definite (5)	Definite (5)																				
<b>Significance</b>	<b>Medium (40)</b>	<b>Medium (55)</b>																				

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Status (positive or negative)</b>	Positive	Positive		
<b>Cumulative impact:</b> economic boost			Same as above	
<b><u>AIR QUALITY IMPACTS</u></b>				
<p>Limited gaseous or particulate emissions are anticipated from exhaust emissions from operation equipment on-site and heavy duty haulage vehicles that will assess site. The overall impact on the environment as a result of the operation is likely to be of low significance as the waste sorting, storage and recycling process will not release emissions into the atmosphere and impacts associated with dust and vehicle emissions will be localised.</p>				
<b>Direct impacts:</b> Air pollution			<ul style="list-style-type: none"> <li>▪ The site must be flat and hard-packed as a long-term mitigation measure (for waste handling facilities).</li> <li>▪ No burning of refuse or vegetation is permitted.</li> <li>▪ An appropriate dust suppressant must be applied on all exposed areas as required to minimize/control airborne dust.</li> <li>▪ Maintenance of vehicles.</li> </ul>	Low with or without mitigation.
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		
<b>Probability</b>	Probable (3)	Probable (3)		
<b>Duration</b>	Short term (2)	Very short duration(1)		
<b>Extent</b>	Limited to Local Area (2)	Limited to Site (1)		
<b>Magnitude</b>	Low (4)	Minor (2)		
<b>Significance</b>	<b>24 (Low)</b>	<b>12 (Low)</b>		

Potential impacts:				Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Status (positive or negative)</b>	Negative	Negative			
<b>Indirect impact:</b> Reduced air quality especially to houses near the eastern boundary of the waste facility.				<ul style="list-style-type: none"> <li>▪ Same as above-</li> </ul>	-
<b>Cumulative impact:</b> The households may develop a health issue related to the layout of the Sorting and Storage Area on the Eastern Boundary.				-	-

**IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE**

**Alternative Layout - (Sorting and Storage Area on the Eastern corner)**

**Table 1:** The environmental impacts associated with the **Operation phase** of the Proposed Waste Storage Facility using - **Alternative Layout - (Sorting and Storage Area on the Eastern corner)** are anticipated as follows:

Potential impacts:	Proposed mitigation:	Risk of the impact and mitigation not being implemented									
<p><b><u>ECOLOGICAL IMPACTS (FLORA)</u></b></p> <p>The vegetation on the site was observed to be highly disturbed and transformed by past impacts and is infested by alien invasive plant species, many of which were declared category 1 invasive species that should be removed. Due to the disturbed state of the vegetation on the site it makes it improbable that the on-site vegetation significantly contributes to the conservation of regional vegetation. There is a significant establishment of exotic plant species, as the majority these inhabited the study site and also proliferated in disturbed environments.</p>											
<p><b>Direct impacts:</b> Introduction and spread of exotic vegetation</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Mitigation</th> <th>With Mitigation</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local (2)</td> <td>Local (2)</td> </tr> <tr> <td>Duration</td> <td>Long-term (4)</td> <td>Short-term (1)</td> </tr> </tbody> </table>	Description	Without Mitigation	With Mitigation	Extent	Local (2)	Local (2)	Duration	Long-term (4)	Short-term (1)	<ul style="list-style-type: none"> <li>▪ Invasive species could colonise the disturbed soils onsite if left unmanaged and allowed to grow. Invasive species should be eradicated and not allowed to spread to adjacent natural vegetation.</li> <li>▪ Operation activities must be limited to the site. No operational activities are allowed to impact directly or indirectly on the</li> </ul>	<p>The risk will be medium</p>
Description	Without Mitigation	With Mitigation									
Extent	Local (2)	Local (2)									
Duration	Long-term (4)	Short-term (1)									

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Magnitude</b>	Low (4)	Minor (2)	remaining surrounding vegetation (e.g. dumping or release of pollutants/effluent etc.).	
<b>Probability</b>	Highly Probable (4)	improbable (2)		
<b>Significance</b>	<b>Medium (40)</b>	<b>Low (10)</b>		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impact:</b> None anticipated			-	-
<b>Cumulative impact:</b> None			-	-
<b><u>ECOLOGICAL IMPACTS (FAUNA)</u></b>				
<p>The impact on fauna is expected to be negligent. Presence of indigenous terrestrial vertebrates within the study area is low due to current land use and degradation. No restricted or specific habitat of vertebrates exists on the study area and will be affected by the proposed development. The construction activities on site will have no impact on biodiversity seeing that the site has been developed. Therefore, the impact is not assessed further.</p>				
<b><u>VISUAL IMPACTS</u></b>				
Visual Impacts expected on the construction site.				
<p><b>Direct impacts:</b> Pollution may occur due to the littering and illegal dumping on the site and surrounding areas which can affect the visual character of the site.</p>			<ul style="list-style-type: none"> <li>• Ensure that no litter, refuse, waste, rubbish, rubble, debris and builders wastes generated on the premises be placed, dumped or deposited on adjacent or surrounding properties including road verges, roads or public places and open spaces during or after the construction period.</li> <li>• All waste/litter/rubbish etc. must be disposed of at an approved dumping site as approved by the Council.</li> </ul>	
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented						
<b>Probability</b>	Probable (3)	Probable (3)	<ul style="list-style-type: none"> <li>The landscape must be rehabilitated in such a way that it corresponds to the surrounding topography;</li> <li>Should overtime/night work be authorized, the Contractor shall be responsible to ensure that lighting does not cause undue disturbance to neighbouring residents.</li> </ul>							
<b>Duration</b>	Short term (2)	Very short duration(1)								
<b>Extent</b>	Limited to Local Area (2)	Limited to Site (1)								
<b>Magnitude</b>	Low (4)	Minor (2)								
<b>Significance</b>	<b>24 (Low)</b>	<b>12 (Low)</b>								
<b>Status (positive or negative)</b>	Negative	Negative								
<b><u>NOISE IMPACTS</u></b>										
<p><b>Direct impacts:</b> Noise Impacts anticipated from recycling and sorting machinery and vehicles.</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Mitigation</th> <th>With Mitigation</th> </tr> </thead> <tbody> <tr> <td><b>Probability</b></td> <td>Highly Probable (4)</td> <td>Probable (3)</td> </tr> </tbody> </table>			Description	Without Mitigation	With Mitigation	<b>Probability</b>	Highly Probable (4)	Probable (3)	<ul style="list-style-type: none"> <li>Operation activities must be limited to normal working hours (8am-5pm) and according to municipal by-laws and labour laws.</li> <li>No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site.</li> <li>Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc.) must be used as per operating</li> </ul>	
Description	Without Mitigation	With Mitigation								
<b>Probability</b>	Highly Probable (4)	Probable (3)								



Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Duration</b>	Long-term (4)	Short-term (2)	instructions and maintained properly during site operations. <ul style="list-style-type: none"> <li>• Provide Personal Protective Equipment (PPE) such as ear plugs for workers when required.</li> <li>• Any person who is or may be exposed to noise at or above the noise-rating limit of 85dBA shall obey any lawful order given to him or her by the employer or self-employed person or by anyone authorized thereto by the employer or self-employed person.</li> </ul>	
<b>Extent</b>	Local (2)	Local (2)		
<b>Magnitude</b>	High (8)	Moderate (6)		
<b>Significance</b>	48 (Medium)	Low (24)		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect Impacts:</b> Minimal				
<b>Cumulative impacts:</b> Negilent,				
<b><u>TRAFFIC IMPACTS</u></b>				
Traffic congestion and delay may potentially occur along the access road due to operational activities.				
<b>Direct Impacts:</b> Impeded traffic flow due to entrance/ exit from the waste facility and the movement of trucks to and from the waste facility.			<ul style="list-style-type: none"> <li>• All signage and road markings for the proposed site should be in accordance with the South African Road Traffic Signs Manual".</li> <li>• Ensure that the necessary signage and traffic measures are implemented for safe and convenient access to the site;</li> <li>• Measures must also be put in place to ensure that these access points do not get built up with mud or sand.</li> </ul>	
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Probability</b>	Highly Probable (4)	Probable (3)	<ul style="list-style-type: none"> <li>• Vehicular movement of truck and waste transport vehicles beyond the property boundaries should not take place.</li> </ul>	
<b>Duration</b>	Long-term (4)	Short-term (2)		
<b>Extent</b>	Local (2)	Local (2)		
<b>Magnitude</b>	High (8)	Moderate (6)		
<b>Significance</b>	<b>48 (Medium)</b>	<b>Low (24)</b>		
<b>Status (positive or negative)</b>	Negative	Negative		
<i>Indirect Impacts: Traffic congestion and delays near entrance</i>				
<i>Cumulative impacts: Minimal</i>				
<b><u>POTENTIAL FIRE INCIDENT</u></b>				
<p>Whole waste stockpiles are flammable and when they are stored together in large volumes, they can create a fire hazard. This can significantly cause damage to property, air pollution (from noxious smoke), create run-off of toxic oil, dangerous heavy metals and soot causing soil pollution. In addition, smoke from burning waste contains toxic chemicals and particulate matter that can impact on human health.</p>				
<p><b>Direct impact</b> Accidental fire incidents may occur due to the temporary storage of waste on site.</p>			<ul style="list-style-type: none"> <li>▪ No fires permitted on site.</li> <li>▪ A security attendant trained in fire prevention must be on site at all times.</li> <li>▪ Ensure adequate firefighting equipment is available on site and serviced according to requirements.</li> </ul>	The possible risk is medium
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>		

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Extent</b>	Local (2)	Local (2)	<ul style="list-style-type: none"> <li>▪ Ensure that a minimum of two employees onsite are trained in fire-fighting.</li> <li>▪ No single stockpile of wastes may exceed 3 meters in height, a length of 20 meters and a width of 10 meters.</li> <li>▪ The edges of the stockpiles must be 8 metres from the perimeter fence, and any buildings, and the area between the stockpiles and fence and buildings must be clear of any debris and vegetation</li> <li>▪ All interior firebreaks between piles of waste must be at least 5 metres wide.</li> <li>▪ The developer must ensure that all site personnel are aware of the fire risks and how to deal with any fires that occur. This shall include, but not be limited to:                             <ul style="list-style-type: none"> <li>▪ Regular fire prevention talks</li> <li>▪ Posting of regular reminders to staff</li> </ul> </li> </ul>	
<b>Duration</b>	Long-term (4)	Long-term (4)		
<b>Magnitude</b>	High (8)	Low (4)		
<b>Probability</b>	Probable (3)	improbable (2)		
<b>Significance</b>	Medium (42)	Low (20)		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impact:</b> None			-	-
<b>Cumulative impact:</b> None			-	-
<b><u>POTENTIAL SOIL AND GROUNDWATER CONTAMINATION</u></b>				
<p><b>Direct impacts:</b> Most of the site is bare ground and soil and groundwater pollution may occur may occur due to:</p> <ul style="list-style-type: none"> <li>▪ Hydrocarbon leaks from site operation equipment e.g. (fork lift/Bobcat) and from heavy duty vehicles that will assess site;</li> </ul>			<ul style="list-style-type: none"> <li>▪ Transportation vehicles and operation machinery (e.g. forklift/Bobcat) are to be maintained in good working order, to avoid the probability of leakages of fuels and lubricants.</li> <li>▪ All hazardous material must be stored in the necessary containers/bunded areas and in demarcated areas to prevent a spill or contamination of the site.</li> </ul>	Due to the nature and scale of the development site, the risk will be low with mitigation.

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented																					
<ul style="list-style-type: none"> <li>▪ Inappropriate handling and storage of hydrocarbons on site</li> <li>▪ The waste storage facility may be an additional potential source of subsurface contamination.</li> <li>▪ Accidental fires from the burning of wastes resulting in soil pollution</li> </ul>			<ul style="list-style-type: none"> <li>▪ For a long-term mitigation measure, the site must be hard-packed.</li> <li>▪ Washing and cleaning of equipment and vehicles should also be done within a bermed area (wash bay area).</li> </ul>																						
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<b>Status (positive or negative)</b>	Negative	Negative																							
<b>Indirect impact:</b> None			-	-																					
<b>Cumulative impact:</b> None			-	-																					

Potential impacts:	Proposed mitigation:	Risk of the impact and mitigation not being implemented																					
<b><u>POTENTIAL IMPACT ON STORM WATER</u></b>																							
<p>Presently, there is no provision for storm water infrastructure available on the site. During the rainy season, this may result in pooling of storm water in storage and operation areas. Contamination of storm water may occur. Management of storm water on site during the rainy conditions will therefore, be required. The section below provides a guideline for the management of storm water on site.</p>																							
<p><b>Direct impacts:</b> Contamination of storm water</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Mitigation</th> <th>With Mitigation</th> </tr> </thead> <tbody> <tr> <td>Probability</td> <td>Highly Probable (4)</td> <td>Improbable (2)</td> </tr> <tr> <td>Duration</td> <td>Short-term (1)</td> <td>Very short-term (1)</td> </tr> <tr> <td>Extent</td> <td>Limited to Local Area (1)</td> <td>Limited to Local Area (1)</td> </tr> <tr> <td>Magnitude</td> <td>Moderate (6)</td> <td>Minor (2)</td> </tr> <tr> <td>Significance</td> <td style="background-color: #ffff00;">32 (Medium)</td> <td style="background-color: #90ee90;">8 (Low)</td> </tr> <tr> <td>Status (positive or negative)</td> <td>Negative</td> <td>Negative</td> </tr> </tbody> </table>	Description	Without Mitigation	With Mitigation	Probability	Highly Probable (4)	Improbable (2)	Duration	Short-term (1)	Very short-term (1)	Extent	Limited to Local Area (1)	Limited to Local Area (1)	Magnitude	Moderate (6)	Minor (2)	Significance	32 (Medium)	8 (Low)	Status (positive or negative)	Negative	Negative	<ul style="list-style-type: none"> <li>A detailed storm water management plan must be compiled for the site (including storm water measures to be implemented temporarily during construction phase and permanent measures to be installed for the operation phase) must be developed prior to commencing with activities on site by a suitably qualified engineer and approved by the Local Municipality.</li> </ul>	<p>The risk is medium</p>
Description	Without Mitigation	With Mitigation																					
Probability	Highly Probable (4)	Improbable (2)																					
Duration	Short-term (1)	Very short-term (1)																					
Extent	Limited to Local Area (1)	Limited to Local Area (1)																					
Magnitude	Moderate (6)	Minor (2)																					
Significance	32 (Medium)	8 (Low)																					
Status (positive or negative)	Negative	Negative																					
<p><b>Indirect impacts:</b> Degradation of the nearest watercourses</p>	<p>Same as above</p>	<p>The risk is negligible</p>																					
<p><b>Cumulative impact:</b> Contamination of watercourse that may occur in the area</p>	<p>Same as above</p>	<p>The risk is negligible</p>																					

Potential impacts:	Proposed mitigation:	Risk of the impact and mitigation not being implemented																					
<p><b><u>POTENTIAL POLLUTION FROM WASTE SORTING AND RECYCLING MANAGEMENT</u></b></p> <p>The temporary storage and handling of a variety of wastes may result in pollution due to inappropriate handling. In addition, the facility will generate both general and minimal hazardous waste during its operation phase which may result in unsightliness and pollution if not properly managed. Impacts are expected to be of low significance which, in most instances could be reduced to a lower impact through appropriate mitigation.</p>																							
<p><b>Direct impacts:</b> Potential pollution from waste management .</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Mitigation</th> <th>With Mitigation</th> </tr> </thead> <tbody> <tr> <td>Extent</td> <td>Local (1)</td> <td>Local (1)</td> </tr> <tr> <td>Duration</td> <td>Long-term (4)</td> <td>Long-term (4)</td> </tr> <tr> <td>Magnitude</td> <td>Low (1)</td> <td>Low (1)</td> </tr> <tr> <td>Probability</td> <td>Highly probable (4)</td> <td>Probable (3)</td> </tr> <tr> <td>Significance</td> <td><b>Low (24)</b></td> <td><b>Low (18)</b></td> </tr> <tr> <td>Status (positive or negative)</td> <td>Negative</td> <td>Negative</td> </tr> </tbody> </table>	Description	Without Mitigation	With Mitigation	Extent	Local (1)	Local (1)	Duration	Long-term (4)	Long-term (4)	Magnitude	Low (1)	Low (1)	Probability	Highly probable (4)	Probable (3)	Significance	<b>Low (24)</b>	<b>Low (18)</b>	Status (positive or negative)	Negative	Negative	<ul style="list-style-type: none"> <li>▪ Regular litter picking and general waste bins must be readily available for litter disposal and general housekeeping.</li> <li>▪ All solid waste generated during the operation phase must be placed in a designated waste collection area within the depot and must not be allowed to blow around the site.</li> <li>▪ All solid waste must then be disposed of at the nearest licensed landfill and safe disposal certificates obtained.</li> <li>▪ Separate waste skips/ bins for the different waste streams must be available on site.</li> <li>▪ The waste containers must be appropriate to the waste type contained therein and where necessary should be lined and covered. This will be managed through the site specific EMP and monitored by the Facility Manager.</li> <li>▪ All hazardous material must be carefully stored and then disposed of offsite at the licensed hazardous landfill site</li> <li>▪ Adequate toilet facilities must be provided for all staff members as standard health and safety practice.</li> <li>▪ Ensure that no litter, refuse, waste, generated on the premises be placed, dumped or deposited on adjacent or surrounding</li> </ul>	<p>The risk is low with or without mitigation</p>
Description	Without Mitigation	With Mitigation																					
Extent	Local (1)	Local (1)																					
Duration	Long-term (4)	Long-term (4)																					
Magnitude	Low (1)	Low (1)																					
Probability	Highly probable (4)	Probable (3)																					
Significance	<b>Low (24)</b>	<b>Low (18)</b>																					
Status (positive or negative)	Negative	Negative																					

Potential impacts:	Proposed mitigation:	Risk of the impact and mitigation not being implemented
	<p>properties including road verges, roads or public places and open spaces</p> <ul style="list-style-type: none"> <li>▪ All waste/litter/rubbish etc must be disposed of at an approved dumping site.</li> <li>▪ Keep the property neat and litter free at all times and maintain the landscaped areas.</li> <li>▪ Where possible generated waste on site should be recycled or reused.</li> <li>▪ General and hazardous waste must be stored in separate waste receptacles.</li> <li>▪ Burning or burying of waste material will not be permitted on site.</li> <li>▪ All hazardous waste must be disposed of at a registered hazardous waste disposal facility.</li> <li>▪ Documentation (waste manifest) must be maintained detailing the quantity, type of waste brought to site for pre-processing and that taken offsite to recycling facilities. Waste management records must be available for review at any time.</li> </ul>	
<b>Indirect impact:</b> None	-	-
<b>Cumulative impact:</b> None	-	-
<b><u>MANAGEMENT OF HAZARDOUS MATERIALS</u></b>		
<b>Direct Impacts:</b> Potential pollution from inappropriate management and storage of hazardous chemicals and materials on site	<ul style="list-style-type: none"> <li>▪ Any hazardous or dangerous goods utilized during the operation phase must be stored on an impermeable surface that is bunded, fenced, locked and covered.</li> </ul>	The risk is medium

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Description</b>	<b>Without Mitigation</b>	<b>With Mitigation</b>	<ul style="list-style-type: none"> <li>▪ A spill kit must be available on site for the clean-up of spillages on site</li> <li>▪ A spill kits must be clearly marked and visible when utilizing hazardous or dangerous materials to ensure all spills can be immediately cleaned.</li> <li>▪ Remediation of spillages must be conducted on a continual basis and within 24h of spillage;</li> <li>▪ Contaminated soil will be considered to be hazardous waste and disposed of accordingly.</li> </ul>	
<b>Probability</b>	Highly Probable (4)	Probable (3)		
<b>Duration</b>	Short-term (2)	Very short-term (1)		
<b>Extent</b>	Limited to Local Area (2)	Limited to Local Area (1)		
<b>Magnitude</b>	Moderate (6)	Moderate (6)		
<b>Significance</b>	40 (Medium)	24 (Low)		
<b>Status (positive or negative)</b>	Negative	Negative		
<b>Indirect impact:</b> None				
<b>Cumulative impact:</b> None anticipated			-	-
<p><b><u>SOCIAL POSITIVE IMPACTS</u></b></p> <p>It is expected that the project will create employment opportunities. Job opportunities will be available to skilled personnel (e.g. management and supervisory), semi-skilled personnel (e.g. equipment operators), and low-skilled staff (e.g. security personnel, waste handlers and cleaners). Positive social impacts are expected to be of low significance due mechanized operations.</p>				



Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented																					
<p><b>Direct impacts:</b> Direct employment and skills development through the facility for those that will be employed during the operation phase.</p> <table border="1"> <thead> <tr> <th>Description</th> <th>Without Enhancement</th> <th>With Enhancement</th> </tr> </thead> <tbody> <tr> <td><b>Extent</b></td> <td>Local-Regional (1)</td> <td>Local (3)</td> </tr> <tr> <td><b>Duration</b></td> <td>Medium-term (3)</td> <td>Medium-term (3)</td> </tr> <tr> <td><b>Magnitude</b></td> <td>Small (0)</td> <td>Small (0)</td> </tr> <tr> <td><b>Probability</b></td> <td>Definite (5)</td> <td>Definite (5)</td> </tr> <tr> <td><b>Significance</b></td> <td><b>Low(20)</b></td> <td><b>Low (30)</b></td> </tr> <tr> <td><b>Status (positive or negative)</b></td> <td>Positive</td> <td>Positive</td> </tr> </tbody> </table>			Description	Without Enhancement	With Enhancement	<b>Extent</b>	Local-Regional (1)	Local (3)	<b>Duration</b>	Medium-term (3)	Medium-term (3)	<b>Magnitude</b>	Small (0)	Small (0)	<b>Probability</b>	Definite (5)	Definite (5)	<b>Significance</b>	<b>Low(20)</b>	<b>Low (30)</b>	<b>Status (positive or negative)</b>	Positive	Positive	<p><b>Enhancement:</b></p> <ul style="list-style-type: none"> <li>It is recommended that local employment policy is adopted to maximise the opportunities made available to the local labour force.</li> <li>Where reasonable and practical the developer should appoint local contractors and implement a (local first) policy especially for semi-skilled and low skilled job categories.</li> <li>Training and skills development programmes should be initiated prior to the commencement of the operation phase.</li> </ul>	<p>None, it is a positive impact</p>
Description	Without Enhancement	With Enhancement																							
<b>Extent</b>	Local-Regional (1)	Local (3)																							
<b>Duration</b>	Medium-term (3)	Medium-term (3)																							
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<b>Probability</b>	Definite (5)	Definite (5)																							
<b>Significance</b>	<b>Low(20)</b>	<b>Low (30)</b>																							
<b>Status (positive or negative)</b>	Positive	Positive																							
<p><b>Indirect impact:</b> The key social issues associated with the operation phase of the Waste Management Facility include positive indirect social impacts as follows: Economic multiplier effects from the use of local contractors and development of related businesses such as waste collectors, pyrolysis facilities and waste transporters This will also result in the creation of indirect job opportunities in the region</p>			<p><b>Enhancement:</b></p> <ul style="list-style-type: none"> <li>It is recommended that local contractors are used to maximize the opportunities made available to the local labor force.</li> <li>Develop a database of local BEE service providers and ensure that they are informed of economic opportunities in the waste industry.</li> </ul>	<p>No risk, the impact is positive</p>																					

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
<b>Description</b>	<b>Without Enhancement</b>	<b>With Enhancement</b>		
<b>Extent</b>	Local-Regional (2)	Local-Regional (2)		
<b>Duration</b>	Medium-term (1)	Medium-term (1)		
<b>Magnitude</b>	Moderate (6)	High (8)		
<b>Probability</b>	Definite (5)	Definite (5)		
<b>Significance</b>	<b>Medium (40)</b>	<b>Medium (55)</b>		
<b>Status (positive or negative)</b>	Positive	Positive		
<b>Cumulative impact:</b> economic boost			Same as above	
<b><u>AIR QUALITY IMPACTS</u></b>				
<p>Limited gaseous or particulate emissions are anticipated from exhaust emissions from operation equipment on-site and heavy duty haulage vehicles that will access site. The overall impact on the environment as a result of the operation is likely to be of low significance as the waste sorting, storage and recycling process will not release emissions into the atmosphere and impacts associated with dust and vehicle emissions will be localised.</p>				
<b>Direct impacts:</b> Air pollution, Exposure to garbage odours.			<ul style="list-style-type: none"> <li>▪ The site must be flat and hard-packed as a long-term mitigation measure (for waste handling facilities).</li> <li>▪ No burning of refuse or vegetation is permitted.</li> <li>▪ An appropriate dust suppressant must be applied on all exposed areas as required to minimize/control airborne dust.</li> </ul>	Low with or without mitigation.
<b>Description</b>	<b>Without</b>	<b>With Mitigation</b>		

Potential impacts:			Proposed mitigation:	Risk of the impact and mitigation not being implemented
	<b>Mitigation</b>		<ul style="list-style-type: none"> <li>Maintenance of vehicles.</li> </ul>	
Extent	Highly Probable (4)	Probable (3)		
Duration	Long-term (4)	Short-term (2)		
Magnitude	Local (2)	Local (2)		
Probability	High (8)	Moderate (6)		
<b>Significance</b>	<b>48 (Medium)</b>	<b>Low (24)</b>		
Status (positive or negative)	Negative	Negative		
<b>Indirect impact:</b> Reduced air quality			<ul style="list-style-type: none"> <li>Same as above-</li> </ul>	-
<b>Cumulative impact:</b> None			-	-

### No Go Option

This is the option of not undertaking the proposed activities.

The “No-go” alternative also known as the “no-go” option would result in the proposed waste facility not being implemented.

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<p><b>Waste Recovery</b></p> <p>No-go would mean no waste recovering from the environment resulting in the following impacts</p> <ul style="list-style-type: none"> <li>▪ Waste will not be recovered and would eventually end up at licensed waste disposal landfill.</li> <li>▪ The proposed activity will assist in reducing wastes going straight to landfills and thus increase their life spans.</li> <li>▪ Will assist in curbing illegal dumping and encourage responsible waste disposal.</li> <li>▪ Recycling minimizes pollution where recycling of</li> </ul>	Negative –High	The proposed development should be implemented	Positive –High	Lost Opportunity of the Gauteng Province to have a waste facility that ensures waste management for problematic waste.

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<p>wastes such as plastics, cans, and chemicals go a long way towards considerably cutting back on levels of pollution because these waste products are reused rather than just being thrown away recklessly.</p> <ul style="list-style-type: none"> <li>▪ A waste recovery and recycling effect which is achieved through manual or mechanical separation to provide recovery and recycling of waste will not be realised.</li> <li>▪ Waste information recording will not be incorporated in to the National Waste Information System.</li> <li>▪ Recycling and waste minimisation will not be realized in the area. .</li> <li>▪ Job creation by way of a leading to a long chain of collection and delivery employment opportunities will not be taking place.</li> <li>▪ Waste can create a breeding site for mosquitoes and vermin, leading to the spread of disease. The No go Option will not prevent such safety hazards from occurring.</li> </ul>				

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<ul style="list-style-type: none"> <li>▪ The Municipality Integrated Waste Management Plan (IWMP) will not be achieved and in turn targets and objectives of the provincial and municipal planning documents will be hindered.</li>   <li>▪ A lost opportunity of Gauteng Province to have a waste management facility in the province that will ensure on going waste management from recovery and diverting wastes from landfill through recycling.</li>   <li>▪ According to the National Development plan 2030, South Africa aims to achieve among others environmental sustainability and resilience and also the need to progress towards achieving an absolute reduction in the total volume of waste disposed to landfill. The implementation of the no go alternative will result in a lost opportunity for the Municipality to contribute towards this national objective.</li> </ul>				
<p>This option will result in limited or no impacts occurring on the project site. However, this will result in the waste facility not being developed. It would be undesirable option</p>				

<b>Potential impacts:</b>	<b>Significance rating of impacts (positive or negative):</b>	<b>Proposed mitigation:</b>	<b>Significance rating of impacts after mitigation:</b>	<b>Risk of the impact and mitigation not being implemented</b>
<p>from the social economic point of view and also the waste recovery of waste from the environment. This would result in negative impacts of forgone opportunities at a local and regional scale from a social and economic perspective in terms of limiting employment opportunities and ensuring that wastes are not recovered and eventually end up at licensed waste disposal landfill. The proposed development area occurs in an industrial area and is fragmented from previous anthropogenic activities. The negative impacts of this option are therefore expected to outweigh the benefits. This option is therefore not preferred</p>				

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

- Heritage Impact Assessment Report

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

No gaps in knowledge have been identified at this stage

The following assumptions are made:

- The information on which the report is based (i.e. project information) is correct.
- The construction, operation and management of this proposed development will be in line with the recommendations in this report, which will be enforced by the implementation of detailed Environmental Management Programme. Much of the long-term success lies in the effective implementation of the measures prescribed in the Environmental Management Programme.



**IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE**

**Table 6:** Summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the Decommissioning and Closure phases of the proposed waste management facility.

POTENTIAL IMPACTS	SIGNIFICANCE RATING OF IMPACTS (POSITIVE OR NEGATIVE):	PROPOSED MITIGATION:	SIGNIFICANCE RATING OF IMPACTS AFTER MITIGATION:
<b>DECOMMISSIONING AND CLOSURE PHASES</b>			
<p><b>Decommissioning and closure phases</b> - Decommissioning and closure phase has not been considered as part of this application. If decommissioning phase is considered in future, the developer will undertake the required actions to apply for decommissioning.</p>			

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

N/A

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

Alternative 1

N/A

#### 4. CUMULATIVE IMPACTS

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

A cumulative impact, in relation to an activity, refers to the impact of an activity that by itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse undertaking in the area<sup>1</sup>. The potential cumulative impacts as a result of the proposed project are expected to be associated predominantly with:

##### **Construction Phase Cumulative Impacts:**

##### **1. Biophysical Environment (negative)**

- The cumulative impacts with respect to vegetation, soil degradation and erosion, soil and groundwater contamination, environmental pollution due to waste generation and potential impacts on storm water will be negligible considering the nature and scale of the development.
- No negative cumulative fatal flaw impacts on the natural and social environment are anticipated to be associated with the proposed development.

<sup>1</sup> Definition as provided by DEA in the EIA Regulations.

**Operational Phase Positive Cumulative Impacts:****1. Social and Economic**

- The proposed Waste Management facility has the potential to result in significant positive cumulative socio-economic impacts for the City of Johannesburg Metropolitan Municipality due to the creation of jobs and promote and support other business like waste transporters and other businesses.
- The facility will promote and support the establishment of recycling facilities in Gauteng Province. Recycling facilities can become the main source of employment for the informal sector and previously disadvantaged individuals in both urban and rural areas. The collection of waste from the environment (waste pickers) will also be another source of employment and job creation. The facility therefore will be a source of income for the community adding cumulatively to the economic growth of the community and the region at larger.

**2. Biophysical Environment (positive)**

- Improved natural environment from the removal of waste from the environment will result in:
  - The reduction of waste that goes to landfill sites.
  - The reduction of illegal activities such as illegal dumping and pollution of the environment
  - A clean and healthy natural environment.

## 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.

### Proposed Preferred Layout (Sorting and Storage Area on the **South West corner**) vs. Alternative Layout - (Sorting and Storage Area on the **Eastern corner**)

<b>Comparative Assessment of the alternatives</b>				
From the Basic Assessment undertaken, the following is concluded regarding the alternatives considered:				
<b>Impacts</b>	<b>Before mitigation</b>	<b>After mitigation</b>	<b>Before mitigation</b>	<b>After mitigation</b>
	<b>Preferred Layout (Sorting and Storage Area on the <b>South West corner</b>)</b>	<b>Proposed Preferred Layout (Sorting and Storage Area on the <b>South West corner</b>)</b>	<b>Alternative Layout - (Sorting and Storage Area on the <b>Eastern corner</b>)</b>	<b>Alternative Layout - (Sorting and Storage Area on the <b>Eastern corner</b>)</b>
<b>Construction Phase</b>				
Ecology (Flora)	Low (24)	Low (10)	Low (24)	Low (10)
Ecology (Fauna)	N/A	N/A	N/A	N/A
Visual	Medium (27)	Low (18)	Medium (27)	Low (18)
Noise	Medium (30)	Low (18)	Medium (30)	Low (18)
Traffic	Low (18)	Low (8)	Low (18)	Low (8)
Heritage	Low (18)	Low (2)	Low (18)	Low (2)
Safety and Security	Medium (40)	Low (8)	Medium (40)	Low (8)
Waste Management	Medium (40)	Low (24)	Medium (40)	Low (24)
Soil and groundwater contamination	Medium (40)	Low (24)	Medium (40)	Low (24)
Soil Erosion and Top soil	Medium (32)	Low (6)	Medium (32)	Low (6)
Social (negative)	Medium (30)	Low (6)	Medium (30)	Medium (30)
Social (positive)	Low (12)	Low (21)	Low (12)	Low (21)
Air Quality	Low (28)	Low (12)	Low (28)	Low (12)
<b>Operational Phase</b>				
Ecology (Flora)	Medium (40)	Low (10)	Medium (40)	Low (10)
Ecology (Flora)	---	---	---	---
Visual	24 (Low)	12 (Low)	24 (Low)	12 (Low)
Noise	<b>24 (Low)</b>	<b>12 (Low)</b>	<b>48 (Medium)</b>	<b>Low (24)</b>
Traffic	48 (Medium)	Low (24)	48 (Medium)	Low (24)
Potential Fire Incident	Medium (42)	Low (20)	Medium (42)	Low (20)

Potential Soil and Groundwater Contamination	Medium (40)	Low (12)	Medium (40)	Low (12)
Stormwater	32 (Medium)	8 (Low)	32 (Medium)	8 (Low)
Potential Pollution From Waste Sorting and Recycling Management	Low (24)	Low (18)	Low (24)	Low (18)
Management of Hazardous Materials	40 (Medium)	24 (Low)	40 (Medium)	24 (Low)
Social Positive Impacts	32 (Medium)	8 (Low)	Low(20)	Low (30)
Air Quality Impacts	<b>24 (Low)</b>	<b>12 (Low)</b>	<b>48 (Medium)</b>	<b>Low (24)</b>

### Alternative 1

Refer to table above

### No-go (compulsory)

The 'do nothing alternative' is the option of not constructing the waste facility on site. This alternative would result in no additional environmental impacts related to the proposed waste facility on the site or its surrounding area. This option would result in landfills rapidly reaching their capacities at a quicker rate than desired as the proposed waste facilities would not play their role as waste deflecting facilities and it would mean wastes would be less recycled.

This option will result in no additional impacts occurring as it maintains the current status quo. However, the No-Go Alternative would represent a lost opportunity for the City of Johannesburg Metropolitan Municipality and the broader region as follows:

- More recyclable wastes being discarded into landfill sites that are already struggling for capacity of which placing recyclable waste into the landfill sites increases the capacity constraints at the landfill sites.
- Burning of waste has a harmful impact on the environment.
- Waste materials being incinerated in kilns, which has a harmful impact on the environment
- A lost opportunity in the loss of the benefits to the local community and economy associated with the creation of employment opportunities and the establishment of new related businesses such as transporting, waste collecting and also recycling companies.
- A lost opportunity of Gauteng Province to have a waste management facility in the city that will ensure on going waste management from recovery and diverting wastes from landfill through recycling and the promotion of recycling in Gauteng Province.
- National goals: According to the National Development plan 2030. South Africa aims to achieve among others environmental sustainability and resilience and also the need to progress towards achieving an absolute reduction in the total volume of waste disposed to landfill. The implementation of the no go alternative will result in a lost opportunity for the Municipality to contribute towards this national objective.
- The National Waste Management Strategy (NWMS) presents Government's strategy for, integrated waste management for South Africa. in order to ensure that the NWMS is implemented, Municipalities across the country have developed Integrated Waste Management Plans (IWMPs). The No Go Option would hence result in City of Johannesburg Metro and other municipalities not to achieve their set objectives and targets

**The "Do nothing alternative is, therefore, not preferred.**

## 6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal and Alternative:

There is no impacts of high significance or environmental fatal flaws that will result from the granting of a waste License in either way of implementing it. Both the proposed and the alternative are feasible options but the Proposed Layout - (Sorting and Storage Area on the **South West corner**] is preferred for the fact that it will eliminate odor and visual exposure to the surrounding residents.

Positive socio-economic impacts such as minimised waste that goes to landfill, job creation and development of related business such as pyrolysis facilities are expected with the authorisation of the facility. The identified **negative impacts** for both phases of the development (**construction and operation phase**) for both layout alternatives are of low-medium significance and can be minimised or negated through the implementation of practical and appropriate mitigation measures as detailed in this report and contained in the Environmental Management Programme in **Appendix H**.

**Table7: Impact Summary table**

Impacts	Before mitigation  Preferred Layout (Sorting and Storage Area on the <b>South West corner</b> )	After mitigation  Proposed Preferred Layout (Sorting and Storage Area on the <b>South West corner</b> )	Before mitigation  Alternative Layout - (Sorting and Storage Area on the <b>Eastern corner</b> )	After mitigation  Alternative Layout - (Sorting and Storage Area on the <b>Eastern corner</b> )
<b>Construction Phase</b>				
Ecology (Flora)	Low (24)	Low (10)	Low (24)	Low (10)
Ecology (Fauna)	N/A	N/A	N/A	N/A
Visual	Medium (27)	Low (18)	Medium (27)	Low (18)
Noise	Medium (30)	Low (18)	Medium (30)	Low (18)
Traffic	Low (18)	Low (8)	Low (18)	Low (8)
Heritage	Low (18)	Low (2)	Low (18)	Low (2)
Safety and Security	Medium (40)	Low (8)	Medium (40)	Low (8)
Waste Management	Medium (40)	Low (24)	Medium (40)	Low (24)
Soil and groundwater contamination	Medium (40)	Low (24)	Medium (40)	Low (24)
Soil Erosion and Top soil	Medium (32)	Low (6)	Medium (32)	Low (6)
Social (negative)	Medium (30)	Low (6)	Medium (30)	Medium (30)
Social (positive)	Low (12)	Low (21)	Low (12)	Low (21)
Air Quality	Low (28)	Low (12)	Low (28)	Low (12)
<b>Operational Phase</b>				
Ecology (Flora)	Medium (40)	Low (10)	Medium (40)	Low (10)
Ecology (Flora)	---	---	---	---
Visual	24 (Low)	12 (Low)	24 (Low)	12 (Low)
Noise	<b>24 (Low)</b>	<b>12 (Low)</b>	<b>48 (Medium)</b>	<b>Low (24)</b>
Traffic	48 (Medium)	Low (24)	48 (Medium)	Low (24)
Potential Fire Incident	Medium (42)	Low (20)	Medium (42)	Low (20)
Potential Soil and Groundwater Contamination	Medium (40)	Low (12)	Medium (40)	Low (12)
Stormwater	32 (Medium)	8 (Low)	32 (Medium)	8 (Low)
Potential Pollution From Waste Sorting and Recycling Management	Low (24)	Low (18)	Low (24)	Low (18)
Management of Hazardous Materials	40 (Medium)	24 (Low)	40 (Medium)	24 (Low)
Social Positive Impacts	32 (Medium)	8 (Low)	Low(20)	Low (30)
Air Quality Impacts	<b>24 (Low)</b>	<b>12 (Low)</b>	<b>48 (Medium)</b>	<b>Low (24)</b>

For alternative:

Refer to table above

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 environmental cost of this proposed development of both layouts are expected to occur at local and site level and are considered acceptable provided that the mitigation measures as outlined in this Basic Assessment Report and EMPr are implemented. From an environmental point of view no issues of environmental fatal flaw will arise from implementing either of the layouts as both Layouts have impacts of medium to low significance rating which can further be reduced through the implementation of mitigation measures provided in the project EMPr.

**Either of the two** layout designs can be implemented for development provided that recommended mitigation measures are implemented. However the selection of **Preferred Layout (Sorting and Storage Area on the South West corner)** will be slightly favoured based on the fact that the sorting and storage area is located further away from the residential houses will thus be less of a noise and odour nuisance as compared to the Alternative Layout - (Sorting and Storage Area on the Eastern corner).

Additionally, Site assessments were undertaken to determine what would be the best layout alternative to this development on this particular site. The decision on the type of layout alternative to use was based on the following below:

Technical considerations

- Land use
- Technical cost (cost benefit analysis)

Environmental considerations

- The site layout was selected to ensure minimal impact on the environment and residents
- No land expropriation is required as the property in question belongs to Pikitup
- No major structures are required

From a heritage point of view, it is recommended that the proposed development be allowed to continue on acceptance of the proposed conditions. Should archaeological sites or graves be exposed in other areas during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.

No impacts of high significance or environmental fatal flaws will result from the granting of a waste License (under the NEM: WA, 2008) for the proposed Kaalfontein Waste Management Facility in Johannesburg. The identified impacts can be mitigated through the implementation of practical and appropriate mitigation measures as detailed in this report and contained in the Environmental Management Programme in Appendix H.

## 7. SPATIAL DEVELOPMENT TOOLS

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



outcome thereof.

### Provincial Spatial Development Framework (PSDF)

The Gauteng Provincial Spatial Development Framework (PSDF) is a provincial and strategic planning policy that responds to and complies with in particular the National Development Plan vision 2030 and the National Spatial Development perspective (NSDP). This framework promotes a developmental state in accordance to the principals of global sustainability as is stated by among others, the South African constitution and enabling legislation. The Gauteng PSDF is based on six growth and development pillars, each of which has its onset of drivers with long term-programmes. Pillar 1 highlights the job creation. The proposed development will create jobs during the operational phase, these employment opportunities will target local community members that are usually excluded from mainstream economic and formal employment. Therefore, the development is in line with the Gauteng PSDF. Additionally, the project will also indirectly create job opportunities from the establishment of other related small businesses e.g. (waste collectors and transporters) and waste recycling facilities in the Gauteng Province. This could see recycling becoming a contributor to employment for the informal sector and previously disadvantaged communities in both urban and rural areas.

In addition, the proposed waste facility will contribute towards reducing waste from the environment through recovery and through recycling. In addition, it will result in the minimisation of waste being disposed to landfills.

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

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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:

Based on the outcomes of the Environmental Impact Assessment, conducted as part of this Basic Assessment process, as well as the alternatives assessment, the following recommendations are made:

- The proposed development (the construction and operation of the waste management facility) should be authorised and allowed to proceed on the proposed site (Erf 6049 Kaalfontein).
- The mitigation measures proposed in this report and the draft Environmental Management Programme must be implemented during all phases of the proposed project
- A suitably qualified license holder employee must be mandated with the task of monitoring compliance, and correct implementation of all mitigation measures and provisions as stipulated

in the Waste license once issued, EMPr and standard operation procedures.

- The license holder must ensure that the emergency preparedness plan is implemented.
- In the event of a major incident (e.g. fire causing damage to property and environment, major spill or leak of contaminants), the relevant authorities should be notified as per the notification of emergencies/ incidents, as per the requirements section 30 of NEMA.

## 9. THE NEEDS AND DESIREBILITY OF THE PROPOSED DEVELOPMENT (as per notice 792 of 2012, or the updated version of this guideline)

To assist the city in reducing the amount of waste taken to landfill sites and the costs incurred by the municipality to accommodate said waste. This proposed facility thus will aim to play a role in improving the economy and therefore the development of people in the region, as well as playing an important role in minimizing the waste affecting the environment.

Additionally the proposed waste management facility aims to ensure waste prevention and minimisation and a community driven approach to waste management as the city's objective is to extend existing landfills lifespans.

### National Level

The National Development Plan is a plan that aims to eliminate poverty and reduce inequality in South Africa by 2030. South Africa can realize these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society. The plan identified 13 issues that the country aims to achieve by 2030 among others; **achieving environmental sustainability and resilience** is one of the goals the plan aims to achieve. Waste management is a national issue of concern and the National Development Plan highlights the need to progress towards achieving an absolute reduction in the total volume of waste disposed to landfill. The proposed development is a waste management development that will promote and support the establishment of waste recycling facilities in Gauteng Province. This will reduce the amount of waste going to landfill throughout the region.

The overall plan will therefore contribute to the reduction of waste that goes to landfills in South Africa and aid the country to achieve its **environmental sustainability and resilience objective of the National Development plan for 2030**.

### Provincial Level

The need for operation personnel would result in much needed job opportunities within a province with

a high rate of unemployment. While on a provincial scale the number of job opportunities may seem insignificant, on a local scale this will potentially provide job security (and the benefits thereof) not only for employed individuals but for a number of households. The implementation of the proposed project will also provide an economic stimulus to the local economy through the establishment of other small related businesses such as (waste collectors and transporters), creating additional indirect jobs in both urban and rural areas.

#### **Local Level**

This development is in line with the Integrated Waste Management Plan (IWMP) for the City of Johannesburg, where the city strives to come up with ways of saving/maximising landfill airspace such as; waste minimisation and recycling options; potential for regional collaboration on new landfill site developments and alternative disposal and/or treatment options.

#### **10. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED (CONSIDER WHEN THE ACTIVITY IS EXPECTED TO BE CONCLUDED)**

**Duration and Validity:** The environmental authorisation is required for a period of 10 years from the date of issue. Should a longer period be required, the applicant/EAP will be required to provide a detailed motivation on what the period of validity should be

#### **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 ✓

## SECTION F: APPENDIXES

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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)*

- A1: Locality Map
- A2: Sensitivity Map

**Appendix B: Photographs**

**Appendix C: Facility illustration(s)**

**Appendix D: Route position information (N/A)**

**Appendix E: Public participation information**

- Appendix E1: Proof of site notice
- Appendix E2: Proof of Stakeholder Consultation
- Appendix E3: Proof of newspaper advertisements
- Appendix E4: Authority Consultation
- Appendix E5 – Minutes of any public and/or stakeholder meetings
- Appendix E6 - Comments and Responses Report Attached
- Appendix E7 –Comments from I&APs on Draft Basic Assessment (BA) Report (N/A)
- Appendix E8 –Comments from I&APs on amendments to the BA Report **(N/A)**
- Appendix E9: I&APs and Registered I&APs Database
- Appendix E10 – Comments from I&APs on the application
- Appendix E11 – Other

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

**Appendix G: Specialist reports**

- G1: Heritage Specialist Report

**Appendix H: EMPr**

- H2: Emergency Preparedness Plan

**Appendix I: Other information**

- I1: EAP's expertise
- I2: EAPs Affirmation.
- I3 Specialist Expertise
- I5 Stormwater Management Plan

## 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.

