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*Basic Assessment Report for the Closure of the Koster Waste License Application NWP/WM/BP5/2013/23  
Kgetlengriver Local Municipality*

(For official use only)

File Reference Number:

Application Number:

Date Received:


Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

**Kindly note that:**

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

## SECTION A: ACTIVITY INFORMATION

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

YES

NO  
X

If YES, please complete the form entitled "Details of specialist and declaration of interest"

for appointment of a specialist for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

### 1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail<sup>1</sup>:

#### Project Description

The application is for a waste management licence for the closure of the unlicensed Koster landfill site located at Koster in the Kgetlengriver Local Municipality.

**NW-DEDECT Reference:** NWP/WM/BP5/2013/23

#### The listed activity applied for

The listed NEM:WA activity is: Category A, Activity 14, The decommissioning of a facility for waste management activity listed in Category A or B of this schedule published in GN. 921 of 29 November 2013.

#### Scope of the application

Phase	Included in the scope of this application	Responsibility	Where/how to address
Interim operation of the landfill site	No	NW DEDECT	Interim operation of the landfill site to be regulated by the NW DEDECT through conditions for operation as part of the waste management license
Pre-closure conditions	Yes	CEM	Addressed as part of the EMPr (Appendix F)
Closure plan/EMPr to inform closure design	Yes	CEM	Addressed as part of the EMPr (Appendix F)
Closure design and approval	No	Municipality to appoint registered Consulting Engineer	Detailed closure plan, project plan, design plan and drawings
Detailed design requirements (closure/remedial design, design of storm	No	Municipality to appoint registered Consulting Engineer	It is not possible to do a detailed closure design and planning proposals for this site at this stage. The proponent

<sup>1</sup> Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

water management, leachate management, settlement/surface pondage), plan drawings, and long and short term stability.			needs to make provision for this in its IDP as well as the short to medium expenditure framework. The closure of this site is the responsibility of the Kgetlengriver Local Municipality. It is unknown how long it will take before the municipality is in a position to commence with work and how the conditions at the site will change in the interim. Hence, the approach to do the final closure designs and planning when the project can be implemented. It is imperative that the NW DEDECT and the DWA sign off on these final designs. Refer to the EMPr in Appendix F
Alternative waste disposal options – new landfill site	Not applicable	Bojanala Platinum District Municipality	Waste to be disposed of at new Waterval regional landfill site in Rustenburg.
Alternative waste disposal options – transfer station	Not applicable	Kgetlengriver Local Municipality	A transfer station is to be established in Derby from where waste will be transported to the Waterval regional landfill site. Koster and Derby will be using this transfer station.
Post-closure care and maintenance	Yes	CEM	Addressed as part of the EMPr (Appendix F)
Post-closure hand-over documents	No	Municipality to appoint registered Consulting Engineer	Documents to be generated and handed over to the municipality for implementation
Additional authorisations	Not applicable	Municipality to appoint independent EAP	No additional authorisation identified during EIA.
Rezoning application	Not applicable	Municipality	A rezoning application may be required.

### Site Location

The Koster landfill site is located on land owned by the Kgetlengriver Local Municipality. The site is located directly adjacent to the R509 which lies to the south of the facility. The site is bordered by open land to the east and west of the site, with railway and electricity lines running parallel to the road (these are very close to the boundary of the site). Housing developments are located approximately 300 metres from the north-eastern corner of the site, with Reagile suburb lying towards the north of the landfill site. A dairy farm is located towards the south-west of the landfill site on the opposite side of the R509 (on the Farm Kleinfontein

463-JP) and a quarry with brickworks is situated approximately 250 metres to the west.

Note: The Bojanala Platinum District Municipality manages and is responsible for closing the site. This landfill site will be closed once the Waterval regional waste site at Rustenburg is authorised and operational. A large waste transfer station is planned for Derby and Koster will also be using this transfer station.

### **Zonation of the land**

The north western portion of the land is zoned for public open space, while the south eastern portion is zoned for agriculture.

### **Land ownership**

The Koster landfill site is located on land owned by Kgetlengriver Local Municipality.

### **Operating entity**

Waste Management is a function of the municipal health services in the Kgetlengriver Local Municipality. However, the institutional structure of the local municipality renders waste management ineffective and there is no separate waste management sub-department. Waste management is the responsibility of the technical services unit manager who is also responsible for roads, water and sewer services. The lack of full time waste management shows in the low priority that the municipality affords this service (*Bojanala Platinum District IWMP, 2010*).

### **Waste site characteristics and current operations**

The site is approximately 1.26 ha in extent and while it is not formally classified, it is estimated to be GCB-. Moreover, the landfill site is not licenced nor operated in accordance with accepted waste management norms. Koster landfill site is unfenced and has poor access control. Waste is also illegally dumped next to the access road. Apart from the gravel access road, there is no other infrastructure present.

It is estimated that 11 000 tons of waste per annum is disposed of in the Kgetlengriver Local Municipality<sup>2</sup>, while the quantities of waste disposed of at the Koster landfill site is unknown. Waste is disposed of on the surface of the soil and is not compacted or covered on a daily basis. Furthermore, no monitoring of ground water or potential landfill gas takes place. Waste is pushed in a U-shaped stockpile and some coverage has taken place in the past. The areas where waste was covered with topsoil, are now overgrown with pioneer alien species.

Uncovered waste and associated wind-blown litter has a negative aesthetic impact on the site and surroundings. Wind-blown plastics also pose a hazard to farm animals in the area. Furthermore, evidence also suggests that burning of waste takes place at the site. This practise could pose a safety risk to road users passing on the R509.

### **Closure activities**

The waste site needs to be lawfully closed and rehabilitated. Three scenarios or alternatives are available:

- In-situ closure and capping, once an alternative waste disposal site becomes available (with conditions for interim operations prior to final closure; or
- Immediate capping and closure of the existing waste body; or

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<sup>2</sup> Bojanala Platinum District Municipality, Integrated Waste Management Plan, 2011.

- The no-go alternative.

The preferred alternative involves the intermediate operations of the facility, subject to certain conditions, while the planned transfer facility and regional landfill site is under construction.

- Conditions must be prescribed for operating the waste disposal site prior to the final closure thereof. Minimum requirements must be adhered to for the intermediate operations of the site.
- A registered civil engineer must design the optimal position, shape, size and height of the final closed waste dump, as well as the initial capped cell.
- Design the facility in terms of the Minimum Requirements and the additional requirements of the Department of Water Affairs, Civil Design (K Legge, 2014) with arrangements to prevent water ingress into the dump, the formation of leachate and general pollution prevention arrangements.
- Implement and maintain a maintenance and care programme and a sustained groundwater quality monitoring programme.

### **Waste recyclers**

Three groups of waste recyclers are routinely plying their trade at the facility. None of these groups appear to be authorised for recycling by the municipality. They have, however, been waiting for their registration certificates from SEDA since 2011.

## **2. FEASIBLE AND REASONABLE ALTERNATIVES**

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

- the property on which or location where it is proposed to undertake the activity;**
- the type of activity to be undertaken;**
- the design or layout of the activity;**
- the technology to be used in the activity;**
- the operational aspects of the activity; and**
- the option of not implementing the activity.**

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

### **Description of alternatives considered in this application:**

The waste site needs to be lawfully decommissioned closed and rehabilitated. Three scenarios or alternatives are available:

- In-situ closure and capping, once an alternative waste disposal site becomes available

(with conditions for interim operations prior to final closure; or

- Immediate capping and closure of the existing waste body; or
- The no-go alternative.

The preferred alternative involves the intermediate operations of the facility, subject to certain conditions, while the planned transfer facility and regional landfill site is under construction.

- Conditions must be prescribed for operating the waste disposal site prior to the final closure thereof. Minimum requirements must be adhered to for the intermediate operations of the site.
- A registered civil engineer must design the optimal position, shape, size and height of the final closed waste dump, as well as the initial capped cell.
- Design the facility in terms of the Minimum Requirements and the additional requirements of the Department of Water Affairs, Civil Design (K Legge, 2014) with arrangements to prevent water ingress into the dump, the formation of leachate and general pollution prevention arrangements.
- Implement and maintain a maintenance and care programme and a sustained groundwater quality monitoring programme.

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

### 3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites, if applicable.

#### Alternative

**Latitude (S):**

**Longitude (E):**

Alternative S1<sup>3</sup> (preferred or only site alternative)

25°	51'37.2"	26°	52'47.3"
0	'	0	'
0	'	0	'

Alternative S2 (if any) Not Applicable

Alternative S3 (if any) Not Applicable

#### In the case of linear activities:

**Alternative:** Not Applicable

**Latitude (S):**

**Longitude (E):**

Alternative S1 (preferred or only route alternative)

- Starting point of the activity

0	'	0	'
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<sup>3</sup> "Alternative S.." refer to site alternatives.

- Middle/Additional point of the activity
- End point of the activity

o	'	o	'
o	'	o	'

Alternative S2 (if any)

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

o	'	o	'
o	'	o	'
o	'	o	'

Alternative S3 (if any)

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

o	'	o	'
o	'	o	'
o	'	o	'

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

#### 4. PHYSICAL SIZE OF THE ACTIVITY

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

The size of the landfill site that requires decommissioning and closure is: 1.26 ha.

**Alternative:** : Not Applicable

**Size of the activity:**

Alternative A1<sup>4</sup> (preferred activity alternative)

12 603 m<sup>2</sup>

Alternative A2 (if any)

m<sup>2</sup>

Alternative A3 (if any)

m<sup>2</sup>

**or, for linear activities:**

**Alternative:** : Not Applicable

**Length of the activity:**

Alternative A1 (preferred activity alternative)

M

Alternative A2 (if any)

M

Alternative A3 (if any)

M

<sup>4</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur): :  
**Not Applicable**

	Size of the site/servitude:
<b>Alternative:</b>	
Alternative A1 (preferred activity alternative)	m <sup>2</sup>
Alternative A2 (if any)	m <sup>2</sup>
Alternative A3 (if any)	m <sup>2</sup>

## 5. SITE ACCESS

Does ready access to the site exist?

YES <b>X</b>	NO
m	

If NO, what is the distance over which a new access road will be built : **Not Applicable**

Describe the type of access road planned: : **Not Applicable**

**Not Applicable**

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

: **Not Applicable**

## 6. SITE OR ROUTE PLAN:

See Maps K1, K2, K3 and K4 in Appendix A.

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site; See Map K2 in Appendix A
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites; See Map K3 and K4 in Appendix A
- 6.4 the exact position of each element of the application as well as any other structures on the site See Map K1 in Appendix A
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure; See Map K1 in Appendix A



- 6.6 all trees and shrubs taller than 1.8 metres; See Map K1 in Appendix A
- 6.7 walls and fencing including details of the height and construction material; See Map K1 in Appendix A
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
- rivers; See Map K1 in Appendix A
  - the 1:100 year flood line (where available or where it is required by DWA); See Map K1 in Appendix A
  - ridges; See Map K1 in Appendix A
  - cultural and historical features; See Map K1 in Appendix A
  - areas with indigenous vegetation (even if it is degraded or invested with alien species); See Map K1 in Appendix A
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and See Map K1 in Appendix A
- 6.11 the positions from where photographs of the site were taken. See Map K1 in Appendix A

## 7. SITE PHOTOGRAPHS

See Appendix B.

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

## 8. FACILITY ILLUSTRATION

Two illustrations are provided:

- K5 indicates the current status of waste disposal (See Appendix C).
- K6 indicates the activity post closure (See Appendix C).

**A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.**

## 9. ACTIVITY MOTIVATION

### 9(a) Socio-economic value of the activity

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

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

Will the activity contribute to service infrastructure?

Is the activity a public amenity?

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

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

What percentage of this will accrue to previously disadvantaged individuals?

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

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

To be determined	
To be determined	
YES	NO <input checked="" type="checkbox"/>
YES	NO <input checked="" type="checkbox"/>
To be determined	
Not determined	
Not determined	
None	
Not determined	

What percentage of this will accrue to previously disadvantaged individuals?

Not  
determined

9(b) Need and desirability of the activity

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

The need for the project is vested in the following arguments:

- The landfill site has been operated unlawfully in terms of a NEM:WA and the NWA. Closure of the site is therefore desirable
- The Bojanala Platinum District Municipality's IWMP (2011) recommends the prompt closure of the Koster landfill site and the regionalisation of waste disposal at the licensed Waterval landfill site which is currently under construction in Rustenburg (completion: 2014). According to a feasibility study conducted for the Bojanala Platinum District Municipality a waste transfer station that conforms to the relevant norms and standards for the storage of waste is envisaged for the towns of Derby and Koster. The Transfer station will be constructed in Derby seeing as this town is closer to Rustenburg than Koster. Derby's waste will also be taken to the transfer station before being transported to the Waterval site for final disposal.
- The current landfill site at Koster is poorly managed which results in waste being disposed-off in an uncoordinated manner. This leads to wind-blown littering and unsolicited burning of waste which in turn creates a safety hazard to vehicles passing on the R509. The lack of proper access control and fencing also poses a health and safety hazard to the surrounding community (in particular children). Closing the site will reduce and ultimately eliminate these associated risks.

The desirability of the project is vested in the need to:

- Manage waste more responsibly and lawfully within the Bojanala Platinum District Municipality and the Kgetlengriver Local Municipality.

<b>NEED:</b>			
1.	Was the relevant provincial planning department involved in the application?	YES <b>X</b>	NO
2.	Does the proposed land use fall within the relevant provincial planning framework?	YES <b>X<sup>5</sup></b>	NO
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:		
	Not Applicable		

<b>DESIRABILITY:</b>			
1.	Does the proposed land use / development fit the surrounding area?	YES <b>X</b>	NO
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES <b>X</b>	NO
3.	Will the benefits of the proposed land use / development outweigh the	YES	NO

<sup>5</sup> The SDF dated 2004 of the North West Province was consulted.

	negative impacts of it?	<b>X</b>	
4.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
	Not Applicable		
5.	Will the proposed land use / development impact on the sense of place?	YES <b>X</b>	NO
6.	Will the proposed land use / development set a precedent?	YES	NO <b>X</b>
7.	Will any person's rights be affected by the proposed land use / development?	YES <b>X</b>	NO
8.	Will the proposed land use / development compromise the "urban edge"?	YES	NO <b>X</b>
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.  The impact of the proposed activity on the sense of place of the area will be positive. Closure of the Koster landfill operations will bring the land use in alignment with the zoning of the surrounding area which is agricultural and public open space. Closure of the landfill site is therefore accordant with the agri-rural character of the area.  The vested rights that will be affected is the authorised access of three groups of waste recyclers to the waste resources for recovering and recycling and hence the loss of their only source of income. This impact can be mitigated by providing these recyclers safe and controlled access to the waste resource at the planned Derby waste transfer station.		

<b>BENEFITS:</b>			
1.	Will the land use / development have any benefits for society in general?	YES <b>X</b>	NO
2.	Explain: The benefits accrue to the adjacent land owners as the risk of fire and exposure of cattle to wind-blown plastic will be eliminated. Furthermore the burning of waste which creates a safety hazard to vehicles passing on the R509 will also be eliminated.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES <b>X</b>	NO
4.	The key beneficial impact is the elimination of wind-blown litter and other health and safety hazards posed to the community by the unfenced Koster landfill site.		

## 10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

<b>Title of legislation, policy or guideline:</b>	<b>Administering authority:</b>	<b>Date:</b>
South Africa's Constitution, 1996 (Act 108 of 1996), including the Bill of Rights (Chapter 2, Section 24)	National Government	1996
National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA), including the NEMA Amendment Act, 2008 (No. 62 of 2008)	National Government, and National Department of Environmental Affairs	1998
NEMA EIA Regulations, 2010 (Government Notice Nos. 543, 544, 545 and 546)	North West Department of Economic Development, Environment Conservation and Tourism	2010
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA) 2008	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2008

<b>Title of legislation, policy or guideline:</b>	<b>Administering authority:</b>	<b>Date:</b>
List of waste management activities that have, or are likely to have a detrimental effect on the environment (GN. 921), 2013	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2013
Waste Classification and Waste Management Regulations (GN 634), 2013	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2013
National Norms and Standards for Disposal of Waste to Landfill (GN 636), 2013	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2013
National Norms and Standards for the Assessment of Waste for Landfill Disposal (GN 635), 2013	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2013
National Norms and Standards for the Storage of Waste (GN 926), 2013	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2013
Waste Information Regulations (GN 625), 2012	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2012
National Waste Management Strategy, 2010	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2010
Minimum requirements for waste disposal by landfill, 1998	Department of Water Affairs	1998
Minimum requirements for water monitoring at waste management facilities	Department of Water Affairs	1998
National Environment Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEM: AQA)	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2004
National Ambient Air Quality Standards in Terms of Section 9(1)(a) and (b) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (Government Notice No. 1210, 24 December 2009)	National Department of Environmental Affairs and Provincial Department of Economic Development, Environment, Conservation and Tourism	2009
The National Heritage Resources Act, 1999 (Act No 25 of 1999) as amended, particularly Chapter II, Section 38	South African Heritage Resource Agency	1999
The National Water Act, 1998 (Act No. 36 of 1998)	Department of Water Affairs	1998
National Water Resource Strategy, 2013	Department of Water Affairs	2013
Water Services Act, 1997 (Act No. 108 of 1997)	At local authority level	1997
Occupational Health & Safety Act, 1993 (Act No. 85 of 1993)	Department of Labour	1993
Health Act, 1977 (Act 63 of 1977)	Department of Health	1977

Title of legislation, policy or guideline:	Administering authority:	Date:
Municipal Structures Act, 1998 (Act 117 of 1998)	Local Municipality	1998
Municipal Systems Act, 2000 (Act 32 of 2000)	Local Municipality	2000
North West Provincial Spatial Development Framework	NW Province	2008
The Bojanala Platinum District Municipality IWMP	Bojanala Platinum District Municipality	2011
Bojanala Platinum District Municipality: IDP	Bojanala Platinum District Municipality	2012
Kgetlengriver Local Municipality SDF	Kgetlengriver Local Municipality	2010
Kgetlengriver Local Municipality IDP	Kgetlengriver Local Municipality	2011

## 11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

### 11(a) Solid waste management

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

YES	NO <sup>6</sup> <b>X</b>
m <sup>3</sup>	

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

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

Where will the construction solid waste be disposed of (describe)? **Not applicable**

**Not applicable**

Will the activity produce solid waste during its operational phase?

YES	NO <b>X</b>
m <sup>3</sup>	

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

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

**Not applicable**

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

**Not applicable**

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

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

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

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

YES	NO <b>X</b>
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If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

### 11(b) Liquid effluent

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

YES	NO <b>X</b>
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If yes, what estimated quantity will be produced per month?

m<sup>3</sup>

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

Yes	NO <b>X</b>
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<sup>6</sup> The activity itself (landfill site) will not produce solid waste, however, the application is for the closure of a landfill site which received solid waste during its operational phase.

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

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

YES	NO
	X

If yes, provide the particulars of the facility:

Facility name:

Contact person:

Postal address:

Postal code:

Telephone:

E-mail:


Cell:	
Fax:	

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

**Not applicable**

### 11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
X	

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

YES	NO
	X

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:

The following emissions are expected at the landfill site:

- Undetermined potential for landfill gas (mainly methane and carbon dioxide) to be generated, the site is small with small volumes of domestic waste been disposed of, the likelihood for the formation of methane is low.
- Dust emissions from the movement, deposition and covering of waste on-site, as well as dust generated from the surface of the landfill due to wind and erosion;
- Vehicle exhausts emissions.

### 11(d) Generation of noise

Will the activity generate noise?

YES	NO
X	

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

YES	NO
	X

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

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

- Noise may be generated by vehicles and earth-moving activities during the decommissioning and closure phase of the proposed activity.
- Noise levels are not expected to be significant in relation to the existing activities on site and in its surroundings.
- Noise will be limited to normal working hours.

## 12. WATER USE

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

municipal	water board	groundwater	river, stream, dam	other	the activity will not use
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			or lake		water <b>X</b>
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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:

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

litres	
YES	NO <b>X</b>

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

### 13. ENERGY EFFICIENCY

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

No energy usage on-site except for the hydrocarbon use during site works.

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

No energy usage on-site except for the hydrocarbon use during site works.

### SECTION B: SITE/AREA/PROPERTY DESCRIPTION

The Koster landfill site is located on the remaining extent of portion 5 of the farm Kleinfontein 463 JP. The site is bordered by open land to the east and west, with the R509 passing the the southern border of the facility. Railway and electricity lines run parallel to the road and are very close to the site. Housing developments are located approximately 300 metres from the north-eastern corner of the site, with Reagile suburb lying towards the north of the landfill site. A dairy farm is located towards the south-west of the landfill site on the opposite side of the R509 (on the Farm Kleinfontein 463 JP) and a quarry with brickworks is situated approximately 250 metres to the west.

The land is zoned for agricultural use as well as public open space and belongs to the Kgetlengrивer local municipality.

#### Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

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

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

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

YES	NO <b>X</b>
-----	----------------

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed:

All specialist reports must be contained in Appendix D.



Property description/physical address:

The Koster landfill site is located on the remaining extent of portion 5 of the farm Kleinfontein 463- JP. The site is bordered by open land to the east and west, with the R509 passing the southern border of the facility. Railway and electricity lines run parallel to the road and are very close to the site. Housing developments are located approximately 300 metres from the north-eastern corner of the site, with Reagile suburb lying towards the north of the landfill site. A dairy farm is located towards the south-west of the landfill site on the opposite side of the R509 (on the Farm Kleinfontein 463-JP) and a quarry with brickworks is situated approximately 250 metres to the west.

The land is zoned for agricultural use as well as public open space and belongs to the Kgetlengriver local municipality.

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

The Koster landfill site is located on the remaining extent of portion 5 of the farm Kleinfontein 463-JP.

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

The land is zoned for agricultural use as well as public open space.

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to this application (refer to annexure A map K3).

Is a change of land-use or a consent use application required?

YES <sup>7</sup> <b>X</b>	NO
YES	NO <b>X</b>

Must a building plan be submitted to the local authority?

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<sup>7</sup> A rezoning application may be required for the landfill site. The landfill site is currently zoned as both agricultural and public open space.



Locality map:

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (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 map must indicate the following:

- an indication of the project site position as well as the positions of the alternative sites, if any; (See Map K7 and K8 in Appendix A)
- road access from all major roads in the area; (See Map K7 and K8 in Appendix A)
- road names or numbers of all major roads as well as the roads that provide access to the site(s); (See Map K7 and K8 in Appendix A)
- all roads within a 1km radius of the site or alternative sites; and (See Map K7 and K8 in Appendix A)
- a north arrow; (See Map K7 and K8 in Appendix A)
- a legend; and (See Map K7 and K8 in Appendix A)
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection) (See Map K7 and K8 in Appendix A).

## 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

### Alternative S1:

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

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

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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## 2. Location in landscape

The site is located on an area with a slight gradient. The surrounding land is zoned for agricultural use and public open space and the predominant vegetation that occurs within the area is perennial grazing grass with invaders on the disturbed areas.

The vegetation type is classified as Vegetation Unit and Topographical Features Gm 11, Rand Highveld Grassland. The vegetation is mainly wiry, sour grass land with Themeda, Eragrostis, Heteropogon and Elionurus dominating. The area is not classified by the North West SDF nor by SANBI as a critical biodiversity area, however, the vegetation type is rated as endangered in terms of its conservation status.

No significant sensitive environmental features were observed on and around the site.

**Indicate the landform(s) that best describes the site:**

NB: Indicate by highlighting/ticking

### 2.1 Ridgeline

### 2.2 Plateau Flat

### 2.3 Side slope of hill/mountain

### 2.4 Closed valley

### 2.5 Open valley

### 2.6 Plain X

### 2.7 Undulating plain / low hills

### 2.8 Dune

### 2.9 Seafront

## 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

The area is underlain by mafic and ultramafic volcanic rocks of the Witwatersrand Super group, while the soil is classified as a Plinthic Catena containing widespread red soils of a dystrophic and/or mesotrophic nature. Clovelly appears to be the dominating soil type.

According to the DWA borehole database the depth of the groundwater table in the area of the landfill site varies from 0.61m to 53.8 m. The apparently shallow groundwater occurring at certain areas beneath the site could pose a potential pollution threat to the underlying water table.

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

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	YES X	NO X	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO X	YES	NO	YES	NO

Seasonally wet soils (often close to water bodies)	YES	NO <b>X</b>	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO <b>X</b>	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO <b>X</b>	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO <b>X</b>	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO <b>X</b>	YES	NO	YES	NO
An area sensitive to erosion	YES	NO <b>X</b>	YES	NO	YES	NO

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

#### 4. GROUNDCOVER

Indicate the types of groundcover present on the site:

The vegetation type is classified as Vegetation Unit and Topographical Features Gm 11, Rand Highveld Grassland. The vegetation is mainly wiry, sour grass land with Themeda, Eragrostis, Heteropogon and Elionurus dominating. The area is not classified by the North West SDF nor by SANBI as a critical biodiversity area, however, the vegetation type is rated as endangered in terms of its conservation status.

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s). See Fig K1 in Appendix A.

The area is not classified by the North West SDF nor by SANBI as a critical biodiversity area, however, the vegetation unit is rated as endangered in terms of its conservation status by Mucina and Rutherford (2006). Therefore, the footprint of the landfill should not be extended.

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

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

## 5. LAND USE CHARACTER OF SURROUNDING AREA

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

The site is bordered by open land to the east and west, with the R509 passing the southern border of the facility. Railway and electricity lines run parallel to the road and are very close to the site. Housing developments are located approximately 300 metres from the north-eastern corner of the site, with Reagile suburb lying towards the north of the landfill site. A dairy farm is located towards the south-west of the landfill site on the opposite side of the R509 (on the Farm Kleinfontein 463-JP) and a quarry with brickworks is situated approximately 250 metres to the west.

**NB: Indicate by highlighting/**

5.1 Natural area

5.2 Low density residential

5.3 Medium density residential **X**

5.5 Informal residential<sup>A</sup>

5.6 Retail commercial & warehousing

5.7 Light industrial

5.8 Medium industrial<sup>AN</sup>

5.9 Heavy industrial<sup>AN</sup>

5.10 Power station

5.11 Office/consulting room

5.12 Military or police base/station/compound

5.13 Spoil heap or slimes dam<sup>A</sup>

5.14 Quarry, sand or borrow pit

5.15 Dam or reservoir

5.16 Hospital/medical centre

5.17 School

5.18 Tertiary education facility

5.19 Church

5.20 Old age home

5.21 Sewage treatment plant<sup>A</sup>

5.22 Train station or shunting yard<sup>N</sup>

5.23 Railway line <sup>N</sup> **X**

5.24 Major road (4 lanes or more) <sup>N</sup>

5.25 Airport <sup>N</sup>

5.26 Harbour

5.27 Sport facilities

5.28 Golf course

5.29 Polo fields

5.30 Filling station <sup>H</sup>

5.31 Landfill or waste treatment site **X**

5.32 Plantation

5.33 Agriculture **X**

5.34 River, stream or wetland

5.35 Nature conservation area

5.36 Mountain, koppie or ridge

5.37 Museum

5.38 Historical building

5.39 Protected Area

5.40 Graveyard

5.41 Archaeological site

5.42 Other land uses (specify)

**If any of the features marked with an "N" are highlighted or ticked, how this impact will / be impacted upon by the proposed activity?**

The railway line to the south of the landfill facility will not impact and will not be impacted upon by the closure of the landfill site.

**If any of the features marked with an "An" are highlighted or ticked, how will this impact / be impacted upon by the proposed activity?**

Not Applicable

If YES, specify and explain:

If YES, specify:

Not Applicable

If any of the features marked with an "H" are highlighted or ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain: Not Applicable

If YES, specify: Not Applicable

## 6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including

YES	NO <sup>8</sup> <b>X</b>
No <sup>9</sup> <b>X</b>	

Archaeological or paleontological sites, on or close (within 20m) to the site?

If YES,  
explain:

Not Applicable

If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Briefly  
explain the  
findings of  
the specialist:

Not Applicable

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

YES	NO <b>X</b>
YES	NO <b>X</b>

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

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

<sup>8</sup> According to the South African Heritage Resource Information System (SAHRIS) there are no declared archaeological or paleontological sites with 20 metres from the site. A desktop study may be required to verify that no culturally or historically significant elements will be affected.

<sup>9</sup> In terms of section 38 of the National Heritage Resources Act (25 of 1999), the activities related to the closure of the existing waste disposal site at Koster exceeds 5000m<sup>2</sup> in extent.

According to the South African Heritage Resource Information System (SAHRIS) there are no declared archaeological or paleontological sites with 20 metres from the site. According to the Council of Geoscience's fossil sensitivity map the area is expected to have a moderate sensitivity as far as palaeontological sensitivity is concerned. Therefore a desktop study may be required to verify that no culturally or historically significant elements will be affected.

In terms of section 38 of the National Heritage Resources Act (25 of 1999), the activities related to the closure of the existing waste disposal site at Koster will exceed 5000m<sup>2</sup> in extent. Although the proposed closure of the landfill site may impact or change the end land-use of the sites, it is argued that the proposed activities will not impact or change the character of the sites, since the landfill site is an existing waste disposal site with existing activities and impacts. The closure of the landfill site will in fact have a positive impact on the character of the surrounding area.

## **SECTION C: PUBLIC PARTICIPATION**

The entire public participation process, outcomes and evidence are recorded in Appendix G1.

### **1. ADVERTISEMENT**

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

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  - (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—

- (i) one local newspaper; or
- (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in sub-regulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

## **2. CONTENT OF ADVERTISEMENTS AND NOTICES**

A notice board, advertisement or notices must:

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

## **3. PLACEMENT OF ADVERTISEMENTS AND NOTICES**

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

Advertisements and notices must make provision for all alternatives.



#### 4. DETERMINATION OF APPROPRIATE MEASURES

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

#### 5. COMMENTS AND RESPONSE REPORT

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

#### 6. AUTHORITY PARTICIPATION

**Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.**

*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.*

*List of authorities informed:*

- North-West Department of Economic Development, Environment, Conservation and Tourism (DEDECT);
- NW Department of Local Government and Traditional Affairs
- Department of Water Affairs (National and Regional Offices);
- Department of Agriculture, Forestry and Fisheries (DAFF);
- The South African Heritage Resource Authority (SAHRA);
- Dr. Bojanala Platinum District Municipality
- Kgetlengriver Local Municipality;

See the list of I&AP's attached to **Appendix G1**.

*List of authorities from whom comments have been received:*

- *NW Department of Local Government and Traditional Affairs*
- *Department of Water Affairs (National and Regional Offices);*
- *Department of Agriculture, Forestry and Fisheries (DAFF);*

#### 7. CONSULTATION WITH OTHER STAKEHOLDERS

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

Proof of any such agreement must be provided, where applicable.

*Has any comment been received from stakeholders?*

YES	NO
X	

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

**Refer to Annexure G1.**

## SECTION D: IMPACT ASSESSMENT

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

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

List the main issues raised by interested and affected parties.

*See Appendix E.*

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

*See Appendix E.*

### 2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

**Alternative 1 (preferred alternative) – Capping and closure of the existing waste body, with conditions for interim operations leading to closure**

#### ➤ *Interim operations of the landfill site*

##### ***Direct impacts:***

##### **Direct impacts with a high significance**

- Groundwater contamination;
- Surface water contamination;

- Soil deterioration and contamination;
- No change/gain in land-use potential; and
- Non-compliance to legal requirements.

#### **Direct impacts with a medium significance**

- Groundwater pollution; and
- Air pollution due to dust and the potential for the burning of waste on site.
- Mobility (transportation and pedestrian) impacts.

#### **Direct impacts with a low significance**

- Infrastructural impacts;
- Use of resources (soil as cover material, hydrocarbons, resources).

#### **Indirect impacts:**

- Habitat transformation (due to alien and invasive infestation if it is not controlled);
- Heritage impacts (conservation);
- Sense of place due to malodorous smells and wind-blown dust;
- Social impacts (health, safety, nuisance) and impacts on the sense of place; and
- Non-compliance risks due to the landfill site not being authorised.

#### **Cumulative impacts:**

- Not applicable.

#### **➤ Closure of the landfill site**

#### **Direct impacts:**

- The provision and operation of on-site staff facilities and activities may have negative impacts with a low significance on soil, water and air pollution, habitat transformation, social impacts and sense of place (due to safety aspects and nuisance), infrastructural impacts and use of resources. These impacts are, however, expected to be of a short duration (less than 30 days) and restricted to a small part of the site.
- The management of vehicles, machinery & equipment (especially due to the use of hydrocarbons) may have negative impacts of a medium significance on soil pollution, and community safety impacts (due to the operation of machinery and equipment during the closure phase. This may also result in a medium impact on the quality of surface water runoff and a high impact on shallow groundwater occurring at certain areas beneath the site.

- Negative impacts related to activities during earthworks and levelling of the site are expected to be low;
- Management of existing waste (historical disposal on landfill) - i.e. moving scattered waste to dedicated areas of the landfill site, filling trenches etc. is expected to have positive impacts on the potential for future surface water pollution (since the waste will be concentrated). Short-term negative impacts (of a low significance) are expected as it relates to soil and air pollution.
- The capping and closing of cells, re-vegetation of the landfill site and removal of alien and invasive vegetation are expected to have positive impacts on the land-use potential and it is expected that the potential for surface water, groundwater and air pollution will be significantly reduced.
- A concern regarding the capping of cells is the use of clay/impervious material and topsoil, which may be a limited and expensive resource in the area.
- The establishment of infrastructure for the management of storm water and the installation of monitoring infrastructure is expected to have long-term positive impacts on the surrounding environment.
- Prevention of the disposal of waste on the closed landfill site will have net positive impacts on the surrounding environment.
- The closure of the landfill site will have negative socio-economic impacts to reclaimers. The municipality needs to consider relocation/other alternatives to accommodate the reclaimers.
- Establishment and active management and maintenance of the end-land use will have a positive impact on the land-use potential of the site.

#### ***Indirect impacts:***

- The authorisation of the landfill site will have the indirect positive impact, which will allow the municipality to apply for funding (from MISA or the DEA for example) to rehabilitate and actively manage the waste disposal site.

#### ***Cumulative impacts:***

Not applicable.

### **Alternative 2– Immediate in-situ closure and capping the landfill site with clay and topsoil**

#### ***Direct impacts:***

- The provision and operation of on-site staff facilities and activities may have negative impacts with a low significance on soil, water and air pollution, habitat transformation, social impacts and sense of place (due to safety aspects and nuisance), infrastructural impacts and use of resources. These impacts are, however, expected to be of a short duration (less than 30 days) and restricted to a small part of the site.
- The management of vehicles, machinery & equipment (especially due to the use of hydrocarbons) may have negative impacts of a medium significance on soil pollution, and community safety impacts (due to the operation of machinery and equipment during the closure phase. This may also result in a medium impact on the quality of surface water runoff and a high impact on shallow groundwater occurring at certain areas beneath the site.
- Negative impacts related to activities during earthworks and levelling of the site are expected to be low;
- Management of existing waste (historical disposal on landfill) - i.e. moving scattered waste to dedicated areas of the landfill site, filling trenches etc. is expected to have positive impacts on the potential for future surface water pollution (since the waste will be concentrated). Short-term negative impacts (of a low significance) are expected as it relates to soil and air pollution.
- The capping and closing of cells, re-vegetation of the landfill site and removal of alien and invasive vegetation are expected to have positive impacts on the land-use potential and it is expected that the potential for surface water, groundwater and air pollution will be significantly reduced.
- A concern regarding the capping of cells is the use of clay/impervious material and topsoil, which may be a limited and expensive resource in the area.
- The establishment of infrastructure for the management of storm water and the installation of monitoring infrastructure is expected to have long-term positive impacts on the surrounding environment.
- Prevention of the disposal of waste on the closed landfill site will have net positive impacts on the surrounding environment.
- The closure of the landfill site will have negative socio-economic impacts to reclaimers. The municipality needs to consider relocation/other alternatives to accommodate the reclaimers.
- Establishment and active management and maintenance of the end-land use will have a positive impact on the land-use potential of the site.

***Indirect impacts:***

- The authorisation of the landfill site will have the indirect positive impact, which will allow the municipality to apply for funding (from MISA or the DEA for example) to

rehabilitate and actively manage the waste disposal site.

***Cumulative impacts:***

Not applicable.

**Alternative 3 (no-go alternative) – Maintaining the *status quo* at the unauthorised waste disposal facility**

***Direct impacts:***

**Direct impacts with a high significance**

- Groundwater contamination;
- Surface water contamination;
- Soil deterioration and contamination;
- No change/gain in land-use potential; and
- Non-compliance to legal requirements.

**Direct impacts with a medium significance**

- Groundwater pollution; and
- Air pollution due to dust and the potential for the burning of waste on site.
- Mobility (transportation and pedestrian) impacts.

**Direct impacts with a low significance**

- Infrastructural impacts;
- Use of resources (soil as cover material, hydrocarbons, resources).

***Indirect impacts:***

- Habitat transformation (due to alien and invasive infestation if it is not controlled);
- Heritage impacts (conservation);
- Sense of place due to malodourous smells and wind-blown dust;
- Social impacts (health, safety, nuisance) and impacts on the sense of place; and
- Non-compliance risks due to the landfill site not being authorised.

***Cumulative impacts:***

- Not applicable.

### 3. ENVIRONMENTAL IMPACT STATEMENT

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

#### **Alternative A1 (preferred option) – Capping and closure of the existing waste body, with conditions for interim operations leading to closure**

Activities related to the interim operations of the site, prior to the final capping and closure of the landfill site, may have impacts of a high significance on surface and groundwater pollution, soil quality and land use potential. These impacts will be temporary and confined to a small section of the site. However, interim operations of the site will provide intermediate airspace for waste disposal while the planned transfer facility in Derby is under construction. This should also prevent continuous illegal waste disposal and will minimise associated pollution.

The final capping and closure of the site, after intermediate operations, will potentially have adverse impacts of a low to medium significance on surface and groundwater pollution, air quality and the quality of soil (erosion and degradation). These impacts are envisaged to be immediate to the site and of a short term. Closing the site will reduce and ultimately eliminate potential contamination of ground water and impacts on natural habitat surrounding the site.

The positive impacts associated with the licencing and closure of the Koster landfill site, including the land-use potential, establishment of stormwater management- and monitoring measures, and positive social (health and safety, and sense of place) will have long-term, highly positive impacts on a local to regional scale.

Therefore, considering the information gathered with regard to the Koster landfill site and the closure thereof, it is recommended that intermediate operating conditions are prescribed and implemented prior to final closure.

#### **Alternative A2 - Immediate in-situ closure and capping the landfill site with clay and topsoil**

Although activities related to the capping and closure of the landfill site may have potentially adverse impacts of a low to medium significance on surface and groundwater pollution, air quality and the quality of soil (erosion and degradation), these impacts are envisaged to be immediate to the site and of a short term. However, closing the site will eliminate the availability of airspace for waste disposal prior to the construction of the planned transfer facility in Derby.

#### **No-go alternative (compulsory)**

The no-go alternative is not a viable proposition as the site is currently not licensed. The objective of the project is to authorise and close the site.

Maintaining the *status quo* involves the continuation of an unlawful waste management activity without any requirements or commitment to rehabilitate or manage the landfill site in

accordance with an EMP or licence conditions.

In terms of the impact identification and assessment matrices (Appendix G2) the number of activities related to the no-go option seems less when compared to those related to the preferred option (closure of the landfill site), however, in terms of the severity, duration and likelihood of their impacts, the continued negative nature of the impacts related to the no-go option are much more significant and severe than the those related to the preferred option (to close the landfill site).

## SECTION E. RECOMMENDATION OF PRACTITIONER

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

YES <b>X</b>	NO
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If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

Not Applicable

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:

See Appendix F

Is an EMP<sub>r</sub> attached?

YES <b>X</b>	NO
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The EMP<sub>r</sub> must be attached as Appendix F.

## SECTION F: APPENDICES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports Not Applicable

Appendix E: Comments and responses report

Appendix F: Environmental Management Programme (EMP<sub>r</sub>)

Appendix G1: The public participation process

Appendix G2: Impact identification and impact evaluation matrices

Appendix G3: Waste management licence application form (as submitted to NW DEDECT)