



GA Environment

IMPACT ASSESSMENT METHODOLOGY

FOR

THE PROPOSED LICENSING OF THE TOPLINE LANDFILL

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IMPACT ASSESSMENT METHODOLOGY

As part of

THE PROPOSED LICENSING OF THE TOPLINE LANDFILL, !KHEIS LOCAL MUNICIPALITY, NORTHERN CAPE PROVINCE

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1. IMPACT METHODOLOGY AND IMPACT EVALUATION

Activities that will be undertaken to give effect to the proposed development gives rise to certain impacts. For the purpose of assessing these impacts, the project has been divided into the following phases discussed in **Table 1**. For the purpose of this impact assessment, the phrase '*upgrading*' and '*construction*' will be used interchangeably as it is understood that as the site will be licenced for operation, construction activities such as construction of the waste disposal cells, access gates and boundary fencing etc. related to the '*upgrading*' of the site will be undertaken.

Table 1: Project phases in a development

PHASES OF A PROJECT IN WHICH IMPACTS WILL OCCUR	
<ul style="list-style-type: none"> Status Quo 	The study area as it currently exists.
<ul style="list-style-type: none"> Pre-construction phase (pre-closure and rehabilitation phase) 	All activities on site up to the start of construction, not including the transport of materials, but including the initial site preparations. This also includes the impacts that would be associated with planning.
<ul style="list-style-type: none"> Construction phase (closure and rehabilitation phase) 	All the construction and construction-related activities on site, until the contractor leaves the site.
<ul style="list-style-type: none"> Operational phase (post-closure and rehabilitation phase) 	All activities after construction, including the operation and maintenance of the proposed development.
<p>The activities arising from each of the relevant phases have been included in the impacts assessment tables. The assessment endeavours to identify activities that would require environmental management actions to mitigate the impacts arising from them. The criteria against which the activities were assessed are given in the next section.</p>	

1.1. ASSESSMENT CRITERIA

The assessment of the impacts has been conducted according to a synthesis of criteria required by the guideline documents to the EIA regulations (2006) and integrated environmental management series published by the Department of Environmental Affairs and Tourism (DEAT) currently Department of Environmental Affairs (DEA). In addition to this, it is a requirement of the National Environmental Management Act (NEMA) 2014 Regulations, Appendices 1 and 2 that an Impact and Risk Assessment process be undertaken for Basic Assessments and Environmental Impact Reporting.

The Assessment Criteria is based on the following:

- Nature of Impact ,
- Extent;
- Duration;
- Intensity;
- Probability;
- Determination of significance; and
- Reversibility of impact.

Each of these are explained in

Table 2 below:

Table 2: Assessment Criteria used in rating impacts of a project

ASSESSMENT CRITERIA	
a) Nature of Impact	
This is an appraisal of the type of effect the proposed activity would have on the affected environmental component. The description should include what is being affected, and how.	
b) Extent	
The physical and spatial size of the impact. This is classified as:	

i) Site

The impact could affect the whole, or a measurable portion of the site.

ii) Local

The impacted area extends only as far as the activity, e.g. a footprint of the specific activity

iii) Regional

The impact could affect areas such as neighbouring farms, transport corridors and the adjoining towns.

c) Duration

The lifetime of the impact; this is measured in the context of the lifetime of the proposed project.

i) Short term

The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than any of the phases.

ii) Medium term

The impact will last up to the end of the phases, where after it will be entirely negated.

iii) Long term

The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter.

iv) Permanent

The only class of impact which will be non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

d) Intensity

Is the impact destructive or benign? Does it destroy the impacted environment, alter its functioning, or slightly alter it? These are rated as:

i) Low

The impact alters the affected environment in such a way that the natural processes or functions are not affected.

ii) Medium (Moderate)

The affected environment is altered, but function and process continue, albeit in a

modified way.

iii) High

Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases. This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

e) Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

i) Improbable

The possibility of the impact occurring is very low, due either to the circumstances, design or experience.

ii) Probable

There is a possibility that the impact will occur to the extent that provisions must be made.

iii) Highly probable

It is most likely that the impacts will occur at some or other stage of the development. Plans must be drawn up before the undertaking of the activity.

iv) Definite

The impact will take place regardless of any prevention plans, and mitigation actions or contingency plans are relied on to contain the effect.

f) Determination of significance

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The classes are rated as follows:

i) No significance

The impact is not substantial and does not require any mitigation.

ii) Low

The impact is of little importance, but may require limited mitigation.

<p>iii) Medium (Moderate)</p> <p>The impact is of importance and therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.</p> <p>iv) High</p> <p>The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation</p>
<p>g) Reversibility of impact</p>
<p>Natural or human aided intervention</p> <p>(i) Irreversible</p> <p>The impact will be permanent</p> <p>(ii) Short term</p> <p>The impact is reversible within two years after construction</p> <p>(iii) Long term</p> <p>The impact is reversible within 2 to 10 years after construction</p>
<p>f) The degree to which the impact can cause irreplaceable loss of resources</p>
<p>(i) Low</p> <p>The impact result in the loss of resources but the natural, cultural and social processes/functions are not affected</p> <p>(ii) Medium</p> <p>The loss of resources occur but natural cultural and social processes continue, albeit in a modified manner</p> <p>(iii) High</p> <p>The impact result in irreplaceable loss of resource</p>