Draft Basic Assessment Report in support of a Waste Management Licence for the Closure of the existing Hlabisa Landfill, Hlabisa Local Municipality, KwaZulu-Natal

Prepared By:

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TITLE	*Draft Basic Assessment Report in support of a Waste Management Licence for the Closure of the Hlabisa Landfill.*
Applicant	*Hlabisa Local Municipality*
AECOM Project No	*60437185*
Status of Report	*Draft Basic Assessment Report*
Date of this Issue	*November 2015*

For AECOM SA (Pty) Ltd / SE Solutions (Pty) Ltd

		Initials & Surname	Signature	Date
Compiled by	:	S Jones		20 November 2015
Reviewed by	:	Johan Hayes		22 November 2015
Approved by	:	Victoria Napier		23 November 2015

Executive Summary

BACKGROUND TO THE PROJECT

The Department of Environmental Affairs (DEA) commissioned a study in 2007, completed in 2009, that aimed at identifying and determining the number of waste disposal facilities in South Africa that are not licensed. Of a total of 581 sites that were identified, 431 needed to be licensed. It was evident from the study that Local Municipalities (LMs) did not have adequate training or funding for lodging applications to licence their unlicensed waste disposal facilities or the management thereof. The Minister undertook to begin the process of licensing these sites, with a target that all would be licensed by 2013/2014. Subsequently, the DEA has identified an additional 57 municipal waste disposal facilities which must be licensed during the 2014/15 financial year. The licensing of the Hlabisa landfill falls within the scope of this process.

Sustainable Environmental Solutions (Pty) Ltd (SE Solutions), in association with AECOM SA (Pty) Ltd (AECOM), was appointed by the DEA to conduct the required environmental legislative process to apply for a Waste Management Licence (WML) for the closure of the existing Hlabisa Landfill (the Project), on behalf of the Hlabisa LM.

PROJECT AREA

The existing Hlabisa landfill is located in a rural and hilly area, at the edge of the small town of Hlabisa. The landfill is located on Portion 812 of the Farm Hlabisa and is accessed from an unnamed road that branches off the D1907 Road, which intersects with the A2143 Road 685 metres south-eastwards. The landfill covers an area of approximately 11 100m².

PROJECT DESCRIPTION

The existing unlicensed Hlabisa landfill is operated by the Hlabisa LM, the Applicant for the proposed WML. Although no record keeping of the influx of waste is being done, the Hlabisa LM estimates that the site receives 12 tons of domestic waste per day and 2 tons of hazardous waste per month. The Hlabisa LM intends to operate the site for a period of 5 years, after which the site is to be decommissioned.

The operation, closure and rehabilitation activities will comply with the Minimum Requirements for Waste Disposal by Landfill (Second Edition, 1998). The site will operate for a maximum of 5 years after licencing. Detailed closure design activities will commence 12 months prior to the WML expiring in order that approved decommissioning activities commence prior to the WML expiring.

APPLICATION PROCESS

The Project is considered a waste management activity that may have a detrimental effect on the environment and for which authorisation in the form of a WML is required from the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA) in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA). At this stage, it is believed that the Project does not trigger activities listed in the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) 2014 Environmental Impact Assessment (EIA) Regulations.

Due to this being an application for closure, a Basic Assessment (BA) application process is required in order to obtain the WML.

Basic Assessment:

This report documents the outcomes of the Basic Assessment Process. The draft version of the Basic Assessment Report is presented to the public and registered Interested and Affected Parties (I&APs) for a 30-

day review and comment period. The Draft Basic Assessment Report is distributed to the following public venues in the project area from 04 December 2015 – 25 January 2016:

Venue	Address
Hlabisa Local Municipality Offices	108 Masson Street, Hlabisa
Hlabisa Public Library	108 Masson Street, Hlabisa

Ms Bongi Shinga from AECOM can be contacted on bongi@deawaste2015.co.za or Tel. 012 421 3500 during office hours for any queries and/or to submit comments on the Basic Assessment Report.

Once all comments on the DBAR have been incorporated and addressed, the Final Basic Assessment Report (FBAR) will be submitted to the KZN EDTEA for decision-making. Once a WML (positive or negative) has been issued, all registered I&APs will be notified of the decision and appeal provisions.

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List of Abbreviations

°C	Degrees Celsius
CA	Competent Authority
BID	Background Information Document
CBD	Central Business District
CRR	Comment and Response Report
DEA	Department of Environmental Affairs
DBAR	Draft Basic Assessment Report
DWS	Department of Water & Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GIS	Geographical Information System
GN R	Government Notice Regulation
Ha	Hectares
HIA	Heritage Impact Assessment
I&AP(s)	Interested and Affected Party (-ies)
IDP	Integrated Development Plan
km	kilometre
KZN EDTEA	KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs
m	metre
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PPP	Public Participation Process
RDL	Red Data Listed
SABAP	South African Bird Atlas Project
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SANS	South African National Standards
SAWS	South African Weather Services
SIA	Social Impact Assessment
WCMR	Waste Classification Management Regulations

WML	Waste Management Licence
WUL	Water Use Licence

1. INTRODUCTION

1.1 Background

The Department of Environmental Affairs (DEA) commissioned a study in 2007, completed in 2009, that aimed at identifying and determining the number of waste disposal facilities in South Africa that are not licenced. Of a total of 581 sites that were identified, 431 needed to be licensed. It was evident from the study that Local Municipalities (LMs) did not have adequate training or funding for lodging applications to licence their unlicensed waste disposal facilities or the management thereof. The Minister undertook to begin the process of licencing these sites, with a target that all would be licenced by 2013/2014. Subsequently, the DEA has identified an additional 57 municipal waste disposal facilities which must be licensed during the 2014/15 financial year. The licensing of the Hlabisa landfill falls within the scope of this process.

1.2 The Proposed Project

Sustainable Environmental Solutions (Pty) Ltd (SE Solutions), in association with AECOM SA (Pty) Ltd (AECOM), was appointed by the DEA to conduct the required environmental legislative process to apply for a Waste Management License (WML) for the closure of the existing unlicensed Hlabisa Landfill (the Project), on behalf of the Hlabisa Local Municipality (LM), the Applicant for the proposed WML.

Although no record keeping of the influx of waste is being done, the Hlabisa LM estimates that the site receives 12 tons of domestic waste per day (it is however probably less than this) and 2 tons of hazardous waste (asbestos and pharmaceutical) per month.

The operation, closure and rehabilitation activities will comply with the Minimum Requirements for Waste Disposal by Landfill (Second Edition, 1998). The site will operate for a maximum of 5 years after licencing. Detailed closure design activities will commence 12 months prior to the WML expiring, in order for approved decommissioning activities to commence prior to the WML expiring. In compliance with the requirements for a communal landfill, during closure of the existing landfill the following activities will be conducted:

- Operation
    - Immediate rehabilitation actions and environmental management measures as outlined in the Environmental Management Programme (EMPr) including:
        - Leachate collection;
        - Storm water management;
        - Erosion control works;
        - Monitoring boreholes;
        - Waste Classification at Gate;
        - Waste Compaction;
        - Covering of waste; and,
    - Management of the site according to the Minimum Requirements for Waste Disposal by Landfill (1998), including:
        - Maintenance of access roads to the Landfill;
        - Access control;
        - Maintenance of site roads and controlling of traffic within the site;
        - Control of nuisances, such as dust, odour and noise;
        - Construction and maintenance of site drainage, including storm water, contaminated runoff and leachate control;
        - Continuous surface and groundwater monitoring; and,
        - Record keeping.
- Closure:

    - Placement of a “no dumping” notice at the site after five (5) years of operation since the issuing of the WML; and,
    - Closing and locking the gate to the site so that no illegal dumping can take place.
- Stormwater:
    - Design of stormwater management infrastructure to comply with Government Notice 704 of the National Water Act, 1998 (Act No. 36 of 1998).
- Final Cover:
    - The final capping system includes 300mm compacted clay, a geomembrane, a ballast layer, a drainage layer and 200mm topsoil;
    - The final capping system must be designed by a Professional Engineer and must to include a gas collection system;
    - The site will then, immediately following capping with topsoil, be seeded with a mixture of indigenous grasses;
    - Vegetation establishment must be monitored post decommissioning to ensure successful rehabilitation; and,
    - Surface and groundwater monitoring to ensure no water pollution as a result of the landfill is occurring.

Closure activities should commence before the WML expires and should be completed within 12 months.

1.3 The Environmental Impact Assessment Process

The proposed Project is considered a waste management activity that may have a detrimental effect on the environment and for which authorisation in the form of a WML is required from the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA) in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA). At this stage, it is believed that the Project does not trigger activities listed in the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) 2014 Environmental Impact Assessment (EIA) Regulations. Due to the nature of the Project, and the requirement to apply for a Waste Management Licence (WML), a Basic Assessment (BA) application process is required.

This BAR process assists the KZN EDTEA, to make an informed decision on whether the proposed license to close the existing landfill should be issued or not, and under what conditions an authorisation could be granted. In the BAR process, all potentially significant negative and positive impacts (social, economic and biophysical environments) of the activity are identified and assessed. A BA application process entails the following main phases:

- Draft Basic Assessment Report (DBAR) Phase;
- Final Basic Assessment Report (FBAR) Phase; and,
- Decision-Making Phase.

1.3.1 Draft Basic Assessment Report Phase

The BA application process is currently in the DBAR Phase, and its main purpose is to identify and investigate issues related to the proposed Project and assess all potentially significant impacts. Issues and impacts are identified by the project team using theoretical knowledge, experience on similar projects, and consultation with I&APs and other key stakeholders (such as national, regional and local government departments).

To date, public participation was conducted to identify potential I&APs, inviting I&APs to register as well as to notify I&APs of the BA application process to obtain a WML for the existing landfill site (refer to Section 7 for more information on the public participation process).

This DBAR is available for public comment over a period of 30 days (excluding public holidays), from 04 December 2015 to 25 January 2016. The objective of the review and comment period is for I&APs to raise concerns about the Project and to comment on the information contained within the DBAR.

1.3.2 Final Basic Assessment Report Phase

Once the comment and review period on the DBAR has concluded, the report will be updated to a FBAR and submitted to the KZN EDTEA for decision-making. All comments received on the DBAR will be captured in a Comment and Response Report (CRR) attached to the FBAR.

1.3.3 Decision-Making Phase

The FBAR will be reviewed by the KZN EDTEA and a WML will be drafted with conditions that the Hlabisa LM must adhere to. Once the WML is issued, all I&APs will be notified of the decision and appeal provision should they disagree with the decision or any conditions contained therein.

1.4 Structure of the Report

This Basic Assessment report contains the following, in accordance with Appendix 1 of the EIA Regulations (2014):

Chapter	Description
Chapter 1	Introduction
Chapter 2	Project team details
Chapter 3	Overview of the project
Chapter 4	Description of the project alternatives
Chapter 0	Description of the affected environment
Chapter 6	Legislation and guidelines that pertain to the project
Chapter 7	Public Participation Process
Chapter 8	Environmental Impact Assessment
Chapter 9	Conclusion and Recommendations
Chapter 10	References

1.5 Assumptions and Limitations

The following assumptions, limitations and constraints, associated with this project as described above, have been identified for this BA process:

- The BA process is multi-disciplinary, which is informed by the project team. It is thus necessary to assume that the information provided by the project team is accurate and true, at the time.
- Data shown in the maps were supplied by various sources and was used as received. The data was not verified.
- A preliminary site investigation was undertaken by the EAP's project team in consultation with representatives of the Applicant and Competent Authority on 03 September 2015 to identify activities triggered and studies required to be conducted.
- Public Participation Process: every effort was made to inform all possible stakeholders within the Project area. Information presented by the stakeholders is presumed to be accurate and has been presented timeously in the study.

2. PROJECT TEAM

2.1 The Applicant

The Hlabisa LM is applying for a WML for the closure of the existing unlicensed Hlabisa Landfill. The Applicant is also the landowner. Details of the Applicant are provided in Table 2-1.

Table 2-1: Details of the Applicant

Applicant	**Hlabisa Local Municipality**
Contact Person	Dr VJ Mthembu
Postal Address	Private Bag X387, Hlabisa, 3937
Telephone	035 838 8500
Fax	035 838 1015
E-mail Address	MM@Hlabisa.org.za
Applicant's Representatives	
Mr Dr VJ Mthembu	Municipal Manager (Hlabisa LM) MM@Hlabisa.org.za
Mr L. M. V. Cele	Director Infrastructure, Planning & Development (Hlabisa LM) mzobanzicele@gmail.com

A copy of the WML Application Form can be found in Appendix B.

2.2 Environmental Assessment Practitioner

Details of the Environmental Assessment Practitioner (EAP) are contained in Table 2-2.

Table 2-2: Details of the EAP

Environmental Consultant	Sustainable Environmental Solutions (Pty) Ltd
Environmental Assessment Practitioner	Ms Victoria Napier
Postal Address	Suite 51, Private Bag X108, Centurion, 0046
Telephone	078 278 2898
Fax	086 664 6885
E-mail Address	vici@sesolutions.co.za

Vici Napier has more than 7 years' experience as an EAP Project Manager, with over 9 years as an EAP. She is highly experienced in managing large multi-disciplinary project teams for various types of environmental assessments and authorisations, and has often been described by colleagues and clients as having specialist Project Management skills. In addition, she has experience in training and skills transfer within the Environmental Management field. Vici is a Registered Professional Natural Scientist with SACNASP (400215/09) and a member of the South African Chapter of the International Association of Impact Assessment (IAIA). The full CV of Ms Napier is presented in Appendix G.

2.3 The EIA Project Team

Details of the Project Team assisting the EAP in conducting the BA application process in support of a WML for the closure of the Hlabisa Landfill are provided in Table 2-3 below.

Table 2-3: EIA Project Team

Name	Role on Team	Company
Mike Howard	Environmental Executive	AECOM
Johan Hayes	Project Manager	AECOM
Soleil Jones	Environmental Specialist	AECOM
Bongi Shinga	Public Participation Practitioner	AECOM
Mamokete Maimane	Public Participation Practitioner	AECOM

CVs of the EIA project team are presented in Appendix G.

3. OVERVIEW OF THE PROJECT

3.1 Project Area

The existing Hlabisa landfill is located in a rural and hilly area, at the edge of the small town of Hlabisa. The landfill is located on Portion 812 of the Farm Hlabisa (SG21 Digit code: N0GU01420000081200000) and is accessed from an unnamed road that branches off the D1907 Road, which intersects with the A2143 Road, 685 metres south-eastwards. The landfill covers an area of approximately 11 100.16 m² and is located on top of a hill with a non-perennial tributary of the Bazaneni River located approximately 100 m southwest south of the study area and flows in a south-eastern direction (Figure 3-1).

3.2 Description of Existing Hlabisa Landfill

The existing unlicensed Hlabisa Landfill is operated by the Hlabisa LM, the applicant for the proposed WML. Although no record keeping of the influx of waste is being done, the Hlabisa LM estimates that the site receives 12 tons of domestic waste per day (it is however probably less than this) and 2 tons of hazardous waste (asbestos and pharmaceutical) per month. The landfill is fenced and surrounded by natural shrubland and grassland. Powerlines are located along the northern boundary of the site, while telephone lines are located along the southern boundary. A watercourse is located less than 100m south-west of the site. With the site located on a hill, there is a lot of windblown litter due to frequent windy conditions on site. Cattle are allowed to graze on the site. Due to a shortage of equipment within the Hlabisa LM, no covering of waste and thus no compaction is undertaken at the facility. There are no storm water management controls in place except for a rudimentary berm constructed downslope of the disposal trench. Refer to Appendix C for the photographs of the site that were taken during the site visit.

3.3 Waste Classification of the Landfill Site

The landfill is assessed in terms of the current impact on the environment and the nature of the status of the landfill (Application for Closure). The impacts assessed will cover closure and decommissioning, as the site already exists.

During its operational life to data and for the next 5 years, the site has received and will continue to receive general waste, business waste, garden waste, and likely some hazardous waste, which requires no classification or assessment as per the Waste Classification and Management Regulations (WCMR) promulgated on 23 August 2013 (Government Gazette No. 36784). The WCMR states that all general domestic waste landfills need to, as a minimum, adhere to the lining requirements for a Class B landfill as described in Regulation 636 of the WCMR. If the landfill accepts wastes that are deemed hazardous as per the information in the Annexure to the WCMR, the landfill cell that accepts this waste needs to be lined in accordance with that of a Class A landfill. For closure and capping design purposes the disposal site will be assessed using the principles contained in the 1998 Department of Water & Sanitation's (then Department of Water Affairs and Forestry) Minimum Requirements for Waste Disposal by Landfill document.

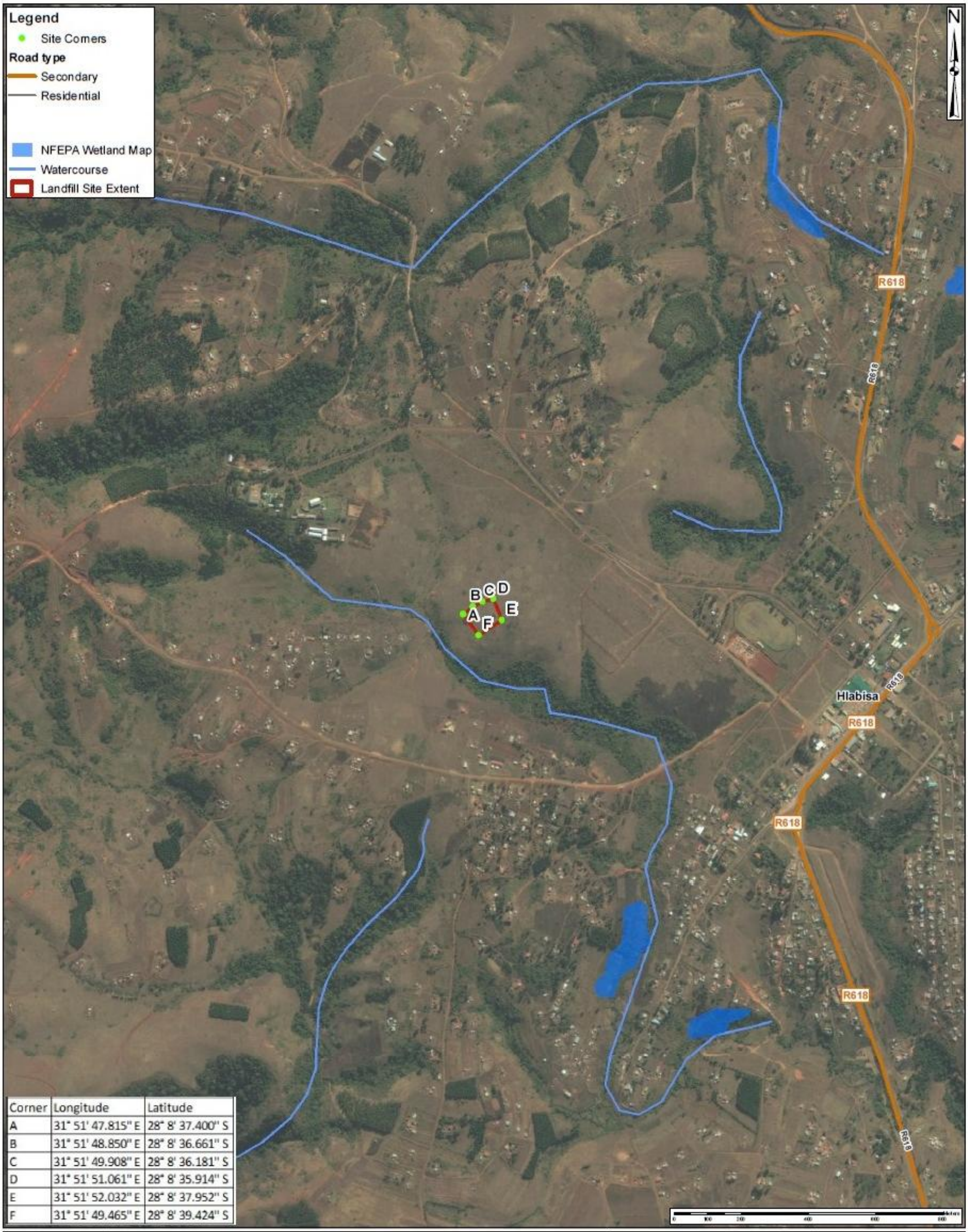


Figure 3-1: Detailed Locality of the Hlabisa Landfill

3.4 Waste Management (Closure) of the Landfill

Design Solution

The operation, closure and rehabilitation activities will comply with the Minimum Requirements for Waste Disposal by Landfill (Second Edition, 1998). The site will operate for a maximum of 5 years after licencing. Detailed closure design activities will commence 12 months prior to the WML expiring in order to ensure that approved decommissioning activities commence prior to the license expiring. In compliance with the requirements for a communal landfill, during closure of the existing landfill the following activities will be conducted:

- Operation
  - Immediate rehabilitations actions and environmental management measures as outlined in this document including stormwater berms and a leachate collection system.
  - Management of site waste management activities according to the Minimum Requirements for Waste Disposal by Landfill (1998).
- Closure:
  - Placement of a “no dumping” notice at the site.
  - Closing and locking the gate to the site so that no illegal dumping can take place.
- Stormwater:
  - Design of stormwater management infrastructure to comply with Government Notice 704 of the National Water Act of 1998.
- Final Cover:
  - The waste body must be covered within five years, when waste disposal stops.
  - The final capping system includes 300mm compacted clay, a geomembrane, a ballast layer, a drainage layer and 200mm topsoil.
  - The final capping system must be designed by a Professional Engineer and has to include a gas collection system.
  - The site will then, immediately following capping with topsoil, be seeded with a mixture of indigenous grasses.
  - Vegetation establishment must be monitored post decommissioning to ensure successful rehabilitation.

Closure activities should be completed within 12 months of expiry of the licence.

3.4.1 Costing of the Proposed Solution

The costs for the construction work that needs to be undertaken upon the issuing of a closure licence and the actual closure of the site within 5 years (after issuing of the licence), have been estimated as follows. Note that these costs are approximate and have been calculated according to certain assumptions and the footprint of the site.

Closure - operation 5 years	
Capping	R 1 683 000.00
Tractor Loader Backhoe (TLB) (new)	R 700 000.00
Tipper (rent)	R 18 000.00
Fence	R 546 000.00
Contractor's Preliminary & General costs P&G's	R 84 150.00
Picking up litter	R 15 000.00
Labour	R 11 500.00
Conservancy tank	R 5 000.00
Stormwater and leachate collection	R 40 000.00
Total	**R 3 102 650.00**

3.5 Need and Desirability

Service delivery is an issue of national concern / importance. Thus, the licensing of the illegal Hlabisa landfill is considered part of this programme. This licensing process undertaken in terms of the NEMWA is in accordance with an initiative driven by the DEA to ensure the legal compliance of all municipal landfills, which in turn ensures appropriate and effective environmental management of these sites.

The licensing of the Hlabisa landfill is thus crucial to ensure that the landfill is legally closed with good practice environmental management in place. In addition, the licensing process is aligned with the uMkhanyakude District Municipality Environmental Management Framework (July 2013), as well as the operation of landfills according to legal requirements and to control illegal dumping and eradicate dumping hotspots (UKDM SEMP, 2013).

The Hlabisa LM Integrated Development Plan (IDP) of 2014/2015) lists ensuring compliance with relevant legislation and the closure of their current dump site & securing land for establishment of a proper landfill site as waste management priorities (HLM IDP, 2014/2015).

4. DESCRIPTION OF ALTERNATIVES

“Alternatives are different means of meeting the general purpose and need of a proposed activity. The identification, description, evaluation and comparison of alternatives are important for ensuring the objectivity of the assessment process. In cases where there is no objective and thorough assessment of alternatives, the EIA process usually only confirms a chosen activity and the value of the assessment as an input to decision-making may be compromised” (DEAT Guideline 4, 2006).

4.1 Alternatives Considered

The identification of alternatives is an important component of the BA process. However, as the Project entails the licensing of an existing landfill, project location / site alternatives are not currently considered as part of the BA process.

Given that the application entails the closure of an existing landfill site, only the option of not implementing closure is considered

4.1.1 Do Nothing Alternative

The DEA stresses that the “Do-Nothing” approach should be considered in cases where the proposed activity will have a significant negative impact that cannot be effectively or satisfactorily mitigated.

The “Do-Nothing” approach entails that the existing Hlabisa Landfill remains unlicensed. Should such licensing not take place, the unlawful landfill will appear as a finding of non-compliance with national legislation within the Hlabisa LM’s annual audit reports. Furthermore, negative environmental and social impacts associated with the current lack of waste management practices will not be rectified and/or mitigated and environmental pollution and degradation will continue.

5. DESCRIPTION OF AFFECTED ENVIRONMENT

5.1 Study Area Context

5.1.1 Regional Context

Hlabisa LM is one of the 5 LMs that constitute the Umkhanyakude District Municipality. Hlabisa LM is located within the N2 Corridor linking South Africa with Swaziland and Mozambique in the north, and KwaZulu-Natal with Eastern Cape and Mpumalanga provinces locally. The LM falls within a Cultural Heritage Corridor (Gateway to the Kingdom of the Zulu) as well as North-South Corridor (N2) as identified in vision 2030 of UMkhanyakude District Municipality (HLM IDP, 2014/215).

Hlabisa LM includes the former Hlabisa Transitional Local Council and areas of the previous uThungulu Council. The municipality is generally characterised by isolated rural communities with high levels of poverty.

5.1.2 Local Context

The existing Hlabisa landfill is located in a rural and hilly area, at the edge of the small town of Hlabisa. The study area is surrounded by the Good Shepherd Mission and Bazaneni, Hlambanyathi, Amatshamnyama and Sitezi residential areas. The landfill is located on Portion 812 of the Farm Hlabisa and is accessed from an unnamed road that branches off the D1907 Road. The landfill is located on top of a hill, (Figure 5-1) with a non-perennial tributary of the Bazaneni River located approximately 100 m southwest of the study area and flows in a south-easterly direction.

5.2 Physical Environment

5.2.1 Climate and Atmospheric Conditions

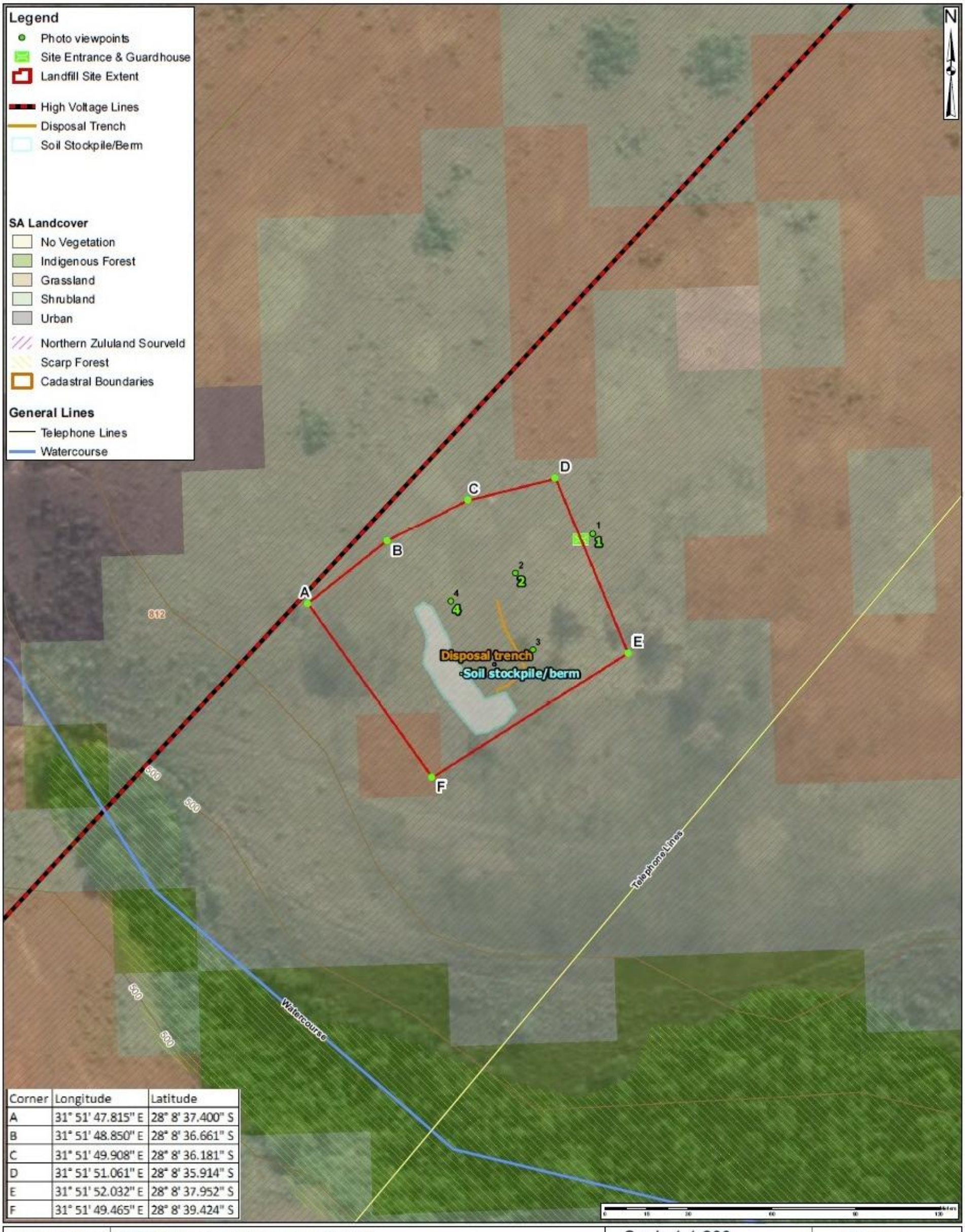
The climate of the project area is classified as warm and temperate, with an annual average rainfall of 966mm. The wettest months occur from October to March (www.Climate-data.org, 2015). The project area is classified as Cfa (subtropical, characterised by hot, humid summers and mild to cool winters) under the Köppen Climate Classification System. The average annual temperature in the area is 19.3 °C. The annual maximum and minimum temperatures are 27.2 °C (February) and 10.3 °C (July), respectively.

5.2.2 Topography

The study area and its surroundings are located on a low mountain topography. The site is sloped at approximately 1:10 in a westerly direction. The site is located approximately 530 metres above sea level (masl).

5.2.3 Soils and Geology

Hlabisa falls within an area that is considered to have some degree of agricultural potential (UKDM SEMP, 2013). The study area falls within Land Type Ab81 and features Red-yellow apedal, freely drained soils, while the geology of the area contains Dolerite and Sandstone of the Vryheid Formation (Ecca Group), (Mucina & Rutherford, 2006)(refer to the Geology Map in Appendix D). The area is rated as having low sensitivity in terms of geological and geotechnical conditions with regard to its development potential, meaning that the geotechnical conditions do not pose any risk in terms of stability for development construction (UKDM SEMP, 2013).



Corner	Longitude	Latitude
A	31° 51' 47.815" E	28° 8' 37.400" S
B	31° 51' 48.850" E	28° 8' 36.661" S
C	31° 51' 49.908" E	28° 8' 36.181" S
D	31° 51' 51.061" E	28° 8' 35.914" S
E	31° 51' 52.032" E	28° 8' 37.952" S
F	31° 51' 49.465" E	28° 8' 39.424" S

Project Title:	DEA Waste Licenses 2015	Scale 1:1 200 (When page size is A3 portrait)	Figure
Map Title:	Site Plan of Hlabisa Landfill		

Whilst every care has been taken in compiling the information on this map, AECOM cannot accept responsibility for any inaccuracies. © Copyright

AECOM

Projection:	Transverse Mercator
Datum:	Hartebeesthoek 1994
	Central Meridian: 31.0
Compiled By:	GA Maree
GIS QC By:	TBD
Approved By:	J Hayes
Date Saved:	2015/11/26
Project Number:	60437185
Map Ref:	EnviroConsolidated.mxd
Revision:	00 DDP Ref.: 9 of 13

CD:NGI
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
© OpenStreetMap & contributors
NFEPA, SANBI, 2011. Vegetation, SANBI 2012. CBA, SANBI BGIS.
Land Cover, GeoTerraImage (GTI) 2013.

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Figure 5-1: Site Plan of Hlabisa Landfill

5.2.4 Existing Land Use and Land Cover

The existing land use of the study area and the immediate surrounding area include cultivated land (subsistence farming), plantations (agricultural facility) and homesteads. Homesteads are primarily located on crests and other high-lying areas rather than on steep slopes and narrow valley floors. Livestock grazing is also common within the area. Refer to the Site Plan (Figure 5-1) above. The Land cover GIS data did not pick up on the watercourse that runs past the south-west corner below the site; instead it reflects it as indigenous forest. A lot of the area that is indicated as urban in this map is actually grazed open space and rural homesteads.

5.2.5 Hydrology

The study area is located within the Usuthu to Mhlathuze Water Management Area (WMA) and falls within Mfolozi and Pongolo Quaternary Catchment W32E. The Mfolozi and Pongolo Quaternary catchment W32E has a Very High conservation status and has a Natural, Unmodified Condition (Class A), Present Ecological State (PES) as provided by (Middleton and Bailey, 2008).

No wetlands or other watercourses are present within the study area, while only a single channelled valley bottom wetland was identified within the 500 m study area buffer, along with three riparian areas that are connected to one another (a non-perennial tributary of the Bazaneni River, approximately 100m from the landfill site), and headwater drainage lines (Figure 5-2). A total wetland area of 1.92 ha and a combined riparian area of 5.40 ha have been delineated within the 500 m buffer (Figure 5-2). No watercourse is located within 32 m of the landfill site. Refer to the Wetland Delineation and Functional Assessment in Appendix E for further information.

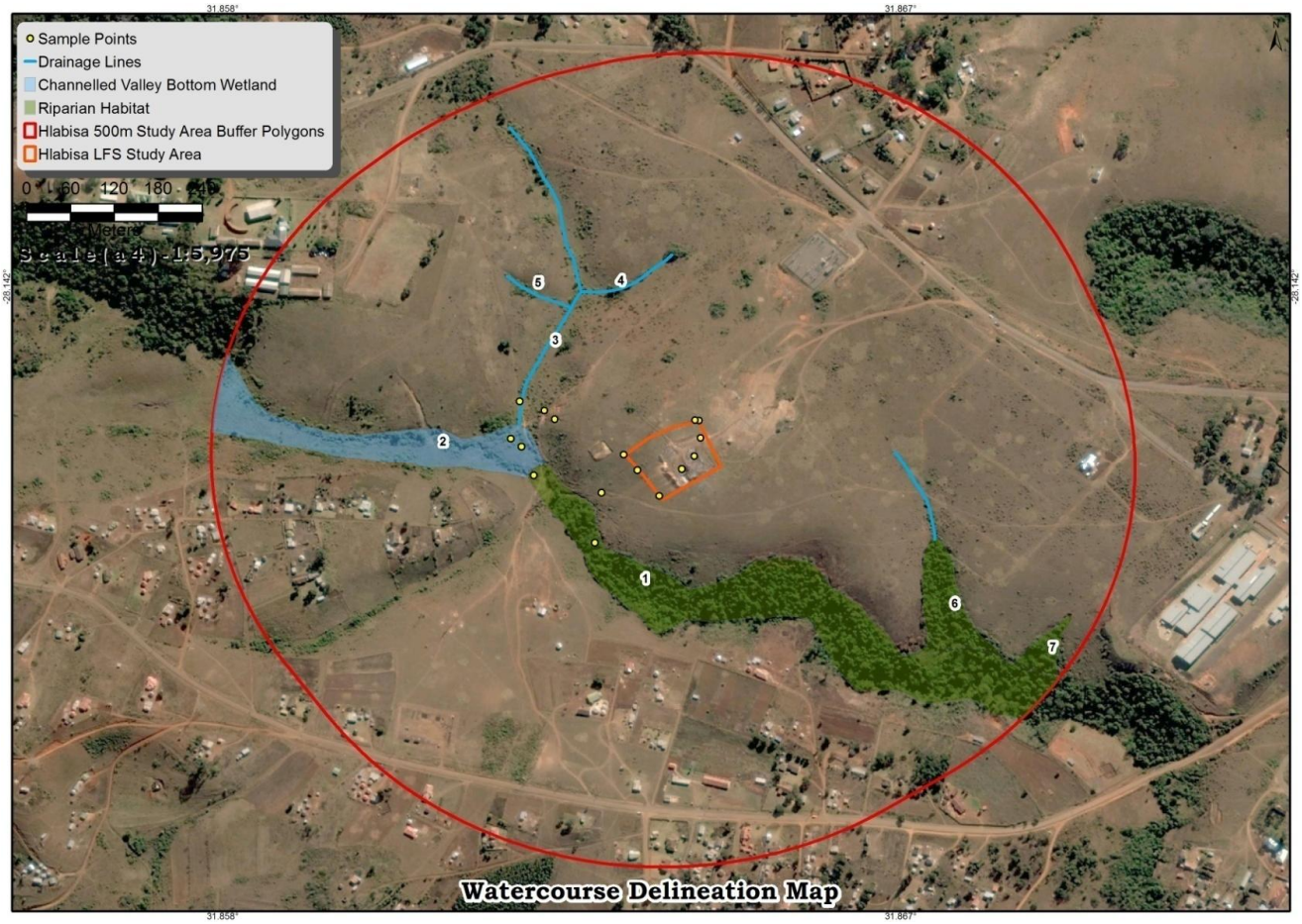

Figure 5-2: Delineated watercourses and drainage lines within the study area and its 500 m buffer (refer to the specialist Wetland Delineation and Functional Assessment in Appendix E).

5.2.6 Groundwater

There is no water level data available from the DWS groundwater monitoring network database; however, there is chemistry data, which indicates that the prevalent water type is sodium potassium carbonate water (AECOM, Groundwater Desktop Study, 2015).

5.3 Biophysical Environment

5.3.1 Flora

The site is located in the Northern Zululand Sourveld vegetation type. The vegetation is a wooded grassland at an altitude between 450m and 900m. The vegetation type varies from pure Sourveld to dense thickets. The terrain is mostly low, undulating mountains, to moderately undulating plains. The soil is moistly shallow, well-drained soil forms, such as Glenrosa and Mispah. The vegetation type is classified as Vulnerable, but can be viewed as a northern extension of the Ngongoni Veld vegetation type (Mucina & Rutherford, 2006). The vegetation type is protected under the following endangered ecosystems as listed under the National Environmental Management Act, 2004 (Act No. 10 of 2004) (NEMBA):

- Ngome Mistbelt Grassland and Forest (KZN 31);
- Black Rhino Range (KZN 41);
- Hluhluwe Scarp Forest (KZN 58); and,
- Imfolosi Savanna and Sourveld (KZN 59).

A Conservation Plan (C-Plan) was developed for KwaZulu-Natal and includes all sensitive features expected on site. The site is listed as a Biodiversity Area (0CO). These areas are located close to priority areas (R0, R1 and R2) and still contain features of conservation importance. These areas are therefore not priority areas, but still contain species of conservation importance, that should be taken into account. The landfill site is, however, an existing landfill and thus already largely transformed. The vegetation on site is grazed very short and high grazing pressure is present. Species were recorded on site and adjacent to the site, but identification of a few of the species was problematic due to the heavy grazing pressure. The vegetation on site is very disturbed and large portions of the vegetation on site have been destroyed. Several alien and invasive plant species are also present. It is, however, clear that the vegetation consisted of grassland vegetation in the past. The remaining species on site are common to the area, with no species of particular significance present. The vegetation unit is largely disturbed on site and not considered to be sensitive. Refer to Appendix E for the Ecological Assessment conducted.

Five invasive plant species were recorded on site. These species need to be controlled on site, and preferably eradicated. Several alien species not listed as invaders and not requiring control are also present on site. These species are all indicators of disturbance.

5.3.2 Fauna

The only mammal species observed during the site visit were domestic animals, including dogs and cattle. Two mammal species (the Blue Duiker and the Spotted Hyena) of conservation importance were recorded in the greater area in the past, however, they are unlikely to be present on site due to the close location of the site to development and human presence on and around the site. The Blue Duiker (*Philantomba monticola*) may however utilise the site occasionally.

Only three bird species (Pied Crow, Grey-headed Bush-shrike and House Sparrow) were observed on site during the site visit. A few bird species of conservation importance may occasionally utilise the site and surroundings for foraging habitat. None of the species are, however, likely to breed on site. Refer to Appendix E for the Ecological Assessment conducted.

5.4 Socio-economic Environment

5.4.1 Population

The municipality population totalled 71 925 people in 2011 and is made up by Black Africans who made up 100% of the total population. 94% of the population speaks IsiZulu as their home language. The under-20 age group constitutes a significant proportion of the population, i.e. just over half (54%) are of working age with only 4% of the population 65 years and older. The proportion of women stands at 54%. This profile is indicative of a significant, mostly male, migrant labour pattern (Stats SA, Census 2011).

5.4.2 Economy and Employment

Agriculture is the main economic activity in the Municipality. The main agricultural sectors are poultry farming (34.5%), vegetable (23.3%) and livestock (32.5%). The vast majority of agricultural activity is subsistence. Most employed people work either in the government sector, the informal sector, or the tourism sector (Stats SA, Census 2011). The tourism sector in the area has been boosted due to the adjacent Hlulhuwe-Umfolozi game reserve. Hlabisa has limited economic development opportunities and in 2011, over half the population of working age (52.6%) was unemployed. The youth unemployment rate is high, at 61.9% (Stats SA, Census 2011).

5.4.3 Education

The level of education in the community of Hlabisa is relatively low, where 22% of the population has had no schooling. 26% have completed matric and only 1,7% have completed higher education. Although there are high levels of school attendance, very few people progress to tertiary education. School attendance is good; of those aged between 5 and 24 years, 82% are attending school. Primary school enrolment stands at 92% (Stats SA, Census 2011).

5.4.4 Service Delivery

5.4.4.1 Health Services

Hlabisa Municipality is served by the Hlabisa Hospital. R3.5 million has been set aside for the refurbishment of the hospital, while another R15 million has been earmarked for the development of a new clinic (HLM IDP, 2014/2015).

5.4.4.2 Electricity

Eskom is the electricity service provider in the Hlabisa LM. The Hlabisa LM's IDP makes numerous mentions of the electricity backlog in the municipality (HLM IDP, 2014/15). 55,4% of households have access to electricity. This represents a significant increase in access to electricity given that in 2001 less than a third of households had access to electricity (Stats SA, Census 2011).

5.4.4.1 Waste Services

The Hlabisa LM removes refuse for 5.4% of the households on a weekly basis (Stats SA, Census 2011). The Hlabisa LM has expressed in their IDP a willingness to initiate recycling initiatives as part of transitioning to a low-carbon economy (HLM IDP, 2014/2015).

5.4.4.2 Water and Sanitation

The municipality faces many challenges in the provision of infrastructure. The proportion of households with flush toilet connected to sewage was 7% and just 12,5% households has piped water inside their dwelling (Stats SA, Census 2011).

5.4.4.3 Housing

Hlabisa Municipality has a total of 12 586 households with an average household size of 5,4 – the second highest in KZN. The proportion of households living in formal dwellings is 68% (Stats SA, Census 2011). The IDP makes numerous references to the housing backlog in the municipal area (HLM IDP, 2014/2015).

6. LEGISLATIVE FRAMEWORK

6.1 Introduction

The overarching legal framework pertinent to the licensing of the Hlabisa landfill site is NEMA and the associated Specific Environmental Management Acts (SEMAs). This section provides an overview of the policy and legislative context including the identification of all legislation, policies, plans, guidelines, spatial tools, municipal development frameworks and instruments applicable to the activity and which are to be considered in the EIA process.

6.2 Relevant National Legislation

6.2.1 The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)

6.2.1.1 Overview

NEMWA regulates waste management in order to protect human health and the environment, by providing reasonable measures for the prevention of pollution and ecological degradation, and for securing ecologically sustainable development. It also provides for national norms and standards for regulating the management of waste by all spheres of government, providing for specific waste management measures for licensing and the control of waste management and remediation activities associated with contaminated land. This legislation provides for compliance and enforcement of the above requirements.

6.2.1.2 National Standards for Disposal of Waste to Landfill

The DEA promulgated Regulations and Standards under NEMWA to regulate various aspects of waste management, including the design and classification of landfills. In addition to the existing Minimum Requirements, the following Regulations will also be applicable:

- Government Notice R.634 – Waste Classification and Management Regulations;
- Government Notice R.635 – National norms and standards for the assessment of waste for landfill disposal; and
- Government Notice R.636 – National norms and standards for disposal of waste to landfill.

As a result of the above, the design and classification of the Hlabisa Landfill will take these new Regulations on Norms and Standards into account.

6.2.1.3 Activities applicable to NEMWA

The closure of the Hlabisa Landfill includes activities listed in Categories A of Government Notice (GN) 37083 of November 2013, published in terms of Section 19(1) of NEMWA, as waste management activities that may have a detrimental effect on the environment and for which authorisation is required in the form of a Waste Management Licence. The relevant listed activities are provided in Table 6-1 for which authorisation by means of a BA application process must be obtained.

Table 6-1: Listed Activities in Terms of Category A and B of GN 37083 of November 2013

No. and Date of the Relevant Notice	Category A or B	Activity Number	Description of the Listed Activity
GNR 37083 of 29 November 2013 in terms of Section 19(1) of NEMWA	A	14	The decommissioning of a facility for a waste management activity listed in Category A or B of this Schedule.

6.2.2 National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended

NEMA provides a framework for cooperative environmental governance between the various spheres of government, by establishing principles for decision-making on matters relating to the environment. Furthermore, NEMA promotes Integrated Environmental Management (IEM) to ensure sustainable resource utilisation and development and requires that the DEA be the lead agent in ensuring effective custodianship of the environment. It also provides that sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where subjected to significant human resource usage and development pressure. The NEMA principles, contained in Section 2, clearly emphasize the need to protect threatened ecosystems and are binding on all organs of state including the local authorities. Furthermore, the principles essentially guide the interpretation, administration and implementation of the Act and any other law concerned with the protection of the environment. An overarching emphasis is the principle that development must be environmentally, socially and economically sustainable.

Section 23 of NEMA further determines that IEM should be employed when any policies, programmes, plans or projects are drawn up to minimise the impact on the environment. The duty of officials to prevent pollution and ecological degradation, to promote conservation and secure ecologically sustainable development and use of natural resources, originates from the Constitution and NEMA.

For a range of listed activities and depending on the scope of the activity, the responsibility to ensure compliance with NEMA and its suite of SEMAs has been devolved to the nine provincial departments.

Sections 24 and 44 of NEMA make provision for the promulgation of regulations that identify activities which may not commence without an Environmental Authorisation (EA). Thus, the EA application process and activities were detailed within the 2014 Environmental Impact Assessment (EIA) Regulations listed in Government Gazette No. 10328 of 4 December 2014 (GN 982, 983, 984 and 985). All activities listed in the abovementioned regulations shall be subject to an EIA process (i.e. Basic Assessment (BA) or Scoping and Environmental Impact Reporting (S&EIR) application processes) and will require EA from the relevant Competent Authority (CA). Section 24F of the NEMA prohibits the undertaking of identified listed activities except by virtue of being undertaken under the control of an EA from the relevant CA.

At this stage, no applicable NEMA activities have been identified as having been triggered by the application. The scope of this project is to license the closure of the existing landfill.

6.2.3 National Water Act, 2008 (Act No. 36 of 2008)

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) provides a framework to protect, develop, conserve and manage the nation's water resources. Water use is defined broadly in terms of NWA, and includes taking and storing water, activities which reduce stream flow, waste discharges and disposals, controlled activities (activities which impact detrimentally on a water resource), altering a watercourse, removing water found underground for certain purposes, and recreation. In general a water use must be licensed (in terms of Section 21) unless it is listed in Schedule 1, is an existing lawful use, is permissible under a general authorisation, or if a responsible authority waives the need for a licence. Section 21 of the NWA lists the water uses for which authorisation under the Act is required.

In terms of Section 19 of the NWA "An owner of land, a person in control of land or a person who occupies or uses the land on which … any activity or process is or was performed or undertaken; or … any other situation exists, which causes, has caused or is likely to cause pollution of a water resource must take all reasonable measures to prevent any such pollution from occurring, continuing or recurring". These measures may include, but are not limited to:

- Measures to cease, modify, or control any act or process causing the pollution.
- Compliance with any prescribed waste standard or management practice.
- Containment or prevention of the movement of pollutants.
- Remediation of the effects of the pollution.
- Remediation of the effects of any disturbance to the bed and banks of a watercourse.

The NWA also provides for pollution prevention measures, with particular emphasis on water resource pollution. In accordance, the licensee shall ensure that activities impacting upon water resources and effluent releases are monitored for compliance with the applicable regulations. Emergency incidents involving water resources are included in the Act, requiring the polluter to remediate and mitigate the impacts of such an emergency incident.

The DWS will provide a Record of Recommendation in terms of the NWA and any other associated policies, plans, programmes, guidelines and regulations to the Competent Authority as part of the WML application process.

6.3 Additional Applicable Legislation

Additional legislation applicable to the Project is listed in Table 6-2.

Table 6-2: Summary of Applicable Legislation

Relevant Legislation	Sections	Applicability to the Project
Constitution of South Africa, 1996 (Act No. 108 of 1996)	Chapter 2	Bill of Rights
	Section 24	Environmental rights
	Section 25	Rights in property
	Section 32	Administrative justice
	Section 33	Access to information
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	Sections 56 and 57	Protection of threatened or protected species
	Sections 65 -73	The control of alien species, invasive species and genetically modified organisms.
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) and regulations	Section 5, 6	Implementation of control measures for alien and invasive plant species, especially in urban areas
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	Section 32	Control of dust
	Section 34	Control of noise
	Section 35	Control of offensive odours
Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and regulations	General Administration Regulations GN R929 of June 2003	Material Safety Data Sheets must be made available at the request of any Interested and Affected Party (I&AP)
	Section 8	General duties of employers to their employees
	Section 9	General duties of employers and self-employed persons to persons other than their employees
Hazardous Substances Act, 1973 (Act No. 15 of 1973) and regulations	As Type 2, 3 and 4 waste may be disposed of at the existing Landfill, the controls of the Hazardous Substances Act must thus be complied with	
Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947) and regulations	Sections 3 to 10	Control of the use of registered pesticides, herbicides (weed killers) and fertilisers. Special precautions must be taken to prevent workers from being exposed to chemical substances during alien vegetation control programmes
National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998)	Chapter 4, 5	Fire prevention, management and control measures to be implemented
National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977)	Section 4	Local Authority approval of plans to erect buildings like weighbridges, admin buildings, etc.

6.4 Local Legislation and Policy Framework

The EIA process must consider the planning policies that govern the study area to ensure that the scale, density and nature of activities/developments are harmonious and in keeping with the sense of place and character of the area. The proposed environmental and infrastructure modifications must be viewed in the context of the planning policies from the following documents:

6.4.1 KwaZulu-Natal Provincial Spatial Development Framework (SDF), 2011/2012

The KZN Provincial SDF has identified the Hlabisa LM as a local municipality with a notably high dependency ratio, thus requiring special assistance and attention in terms of service delivery and planning.

6.4.2 Hlabisa Local Municipality Integrated Development Plan, 2014/2015

The IDP notes that a key challenge in the Hlabisa LM is a shortage of skills in environmental management; however the municipality plans to review its Strategic Environmental Assessment (SEA) and will thereafter develop an Environmental Management Programme (EMPR) to guide environmental management practices and undertaking of site specific environmental investigations. The DEA has established an office in UMkhanyakude, with the intention to assist municipalities and stakeholders to promote good environmental management practices. The Municipality is also working closely with the provincial office of DEA in Mtubatuba. The licensing of the Hlabisa landfill site contributes to improved environmental management within the LM.

6.4.3 uMkhanyakude District Strategic Environmental Management Plan (SEMP), (2015-16)

In order to address the triggers for sustainable development in the UKDM and the priority environmental opportunities and constraints, some of the key objectives of the SEMP include facilitating environmental decision-making and providing strategic guidance on environmental, economic and social issues in the district, including all legislative requirements. The catalysts for initiating the UKDM SEMP fall within the following categories:

- Significant environmental factors (e.g. protection of natural resources to ensure that the associated environmental goods and services are not jeopardised);
- Development pressures (e.g. unlocking agricultural and tourism potential);
- Environmental threats (e.g. land use conflicts and incompatible land use practices).

6.4.4 uMkhanyakude District Integrated Development Plan (IDP), (2014/2015)

The IDP seeks to integrate and balance the economic, ecological and social pillars of sustainability to ensure effective participatory and responsible service delivery. The 3rd generation IDP considered the following issues:

- Responding to issues identified as part of the Municipal Turnaround Strategy; and service delivery programmes, including waste,
- Aligning Sector Departments' strategic plans to the District-wide priorities and service delivery programmes.

7. PUBLIC PARTICIPATION PROCESS (PPP)

The Public Participation Process (PPP) is an integral part of the Environmental Impact Assessment (EIA) process. The objectives of Public Participation in an environmental process are to provide sufficient and accessible information to stakeholders in an objective manner to assist them to:

- Raise issues of concern and suggestions for enhanced benefits;
- Verify that their issues have been recorded and considered in the environmental investigations;
- Assist in commenting on feasible alternatives;
- Contribute relevant local information and knowledge to the environmental assessment; and,
- Comment on the findings of the environmental assessment.

The approach towards any PPP is dependent on the details of the project. Each project has a particular geographic and technical nature, and hence the PPP should be structured accordingly. Where possible, and within the required statutory frameworks, it is also desirable to structure such a process to address the process needs of I&APs.

7.1 Identification and Registration of I&APs

At the time of compiling this report, the database contained 50 stakeholders across a range of sectors and spheres of government, including:

- National Government;
- Provincial Government;
- Local Government;
- Landowners;
- Agriculture;
- Business and Industry (mining and commercial); and,
- Environmental groups.

AECOM made an effort to ensure that individuals and/or organisations were identified from an institutional as well as a geographical point of view. Note that the I&AP database reflects all stakeholders for all allocated landfills to be licensed within the KwaZulu-Natal province. Refer to **Appendix A** for the I&AP Database.

7.2 Announcement of the Proposed Project

Various mechanisms were used to create public awareness of the proposed WML closure application for the existing Hlabisa landfill. An opportunity to participate in the EIA process and to register as an I&AP was announced as indicated below:

7.2.1 Media

Newspaper advertisements notifying the public about the environmental application and opportunities to participate in the EIA process were placed in the following newspapers:

Table 7-1: Project Announcement Newspaper advertisements

Newspaper	Distribution	Language	Date
Zululand Observer	Local	English	11 September 2015
The Mercury	Regional	English	11 September 2015

Copies of the Newspaper Advertisements are included in **Appendix A**.

7.2.2 On-site Notices

Two (2) A2-sized site notices, in English, were erected at various public places in the project area on the 3rd of September 2015.

Table 7-2: Site Notice Locations

Site Notice No	Location
1	Hlabisa Landfill Entrance Fence
2	Hlabisa Public Library, Hlabisa

Copies and photographs of the site notices are provided in **Appendix A**.

7.3 Dissemination of Information

Information was disseminated to registered I&APs primarily by means of a Background Information Document (BID) and Notification letters.

7.3.1 Background Information Document

The BID has been useful in providing background information to the public on the proposed WML application for the existing Hlabisa landfill. Furthermore, it provided information on the processes that have been followed and the contact details of the PPP Consultant. The BID was distributed to all registered I&APs. A copy of the BID is provided in **Appendix A**.

7.3.2 Draft Basic Assessment Report Review Period

The DBAR will be available for a thirty (30) calendar day review period to registered I&APs from 04 December 2015 – 25 January 2016 (excluding public holidays and the period of 15 December to 05 January). The DBAR will be available at the following venues:

Table 7-3: Venues for draft Basic Assessment Report

Venue	Address
Hlabisa Local Municipality Offices	108 Masson Street, Hlabisa
Hlabisa Public Library	108 Masson Street, Hlabisa

Electronic copies of the DBAR are available on the project website www.deawaste2015.co.za. Refer to **Appendix A** for a copy of the notification letter.

7.4 Comment and Response Report

All issues and concerns raised by I&APs during the BA process, will be recorded and responded to in the Comments and Responses Report (CRR) which will form part of the FBAR. No comments have been received to date.

8. ENVIRONMENTAL IMPACT ASSESSMENT

8.1 General

The purpose of this section is to provide an assessment of each of the identified potentially significant impacts and risks associated with the Project, i.e. the 5 year operational period and subsequent closure of the Hlabisa landfill site. The following environmental impacts have been identified.

8.2 Impact Assessment Methodology

The impact assessment methods used are in accordance with the requirements of the 2014 EIA Regulations published in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

The methodology for assessing impacts was practised by using techniques for Risk Assessment as found in the South African National Standard (SANS) 31010 of 2010. The National standards are identical to IEC/ISO 31010:2009 and are adopted with the permission of the International Electrotechnical Commission and the International Organisation for Standardization.

Risk assessment does not make use of one method alone; there are various tools available for assessing impacts. The Leopold Matrix is utilised, whereby criteria are mainly used to determine factors such as – probability, duration, extent etc. This method was practised by making use of P.J. Aucamp (2009) (A practical guide for the discerning practitioner, page 74, based on the previous EIA regulations for risk assessment).

The Leopold Matrix is a qualitative Environmental Impact Assessment (EIA) method developed in 1971. The system consists of a matrix with columns representing the various activities of the project, and rows representing the various environmental factors to be considered. The intersections are filled in to indicate the magnitude (from -10 to +10) and the importance (from 1 to 10) of the impact of each activity on each environmental factor.

“Measurements of magnitude and importance tend to be related, but do not necessarily directly correlate. Magnitude can be measured, in terms of how much area is affected by the development and how badly, but importance is a more subjective measurement. While a proposed development may have a large impact in terms of magnitude, the effects it causes may not actually significantly affect the environment as a whole. The example given by Leopold is of a stream that significantly alters the erosion patterns in a specific area, which will have a significant magnitude, but may not be important, provided the stream in question is swift moving and transports large amounts of soil anyway. In this case, an impact of significant magnitude may not actually be important to the environment in question” (Leopold *et al*, 1971).

It should be noted that there is currently in South Africa no mention of a right or wrong way of assessing impacts. The method used is decided upon by the Environmental Assessment Practitioner (EAP). Hence the following definitions are applied to the assessment criteria used to assess the significance of potential impacts pre- and post- mitigation.

ASSESSMENT CRITERIA	CHARACTERISTICS
Extent	**The physical and spatial scale of the impact.** **Site:** the impacted area is only at the site – the actual extent of the activity; **Local:** the impacted area extends to the surrounding, the immediate and the neighbouring properties; **Regional**: the impacted area could be as wide as the municipal area or at a provincial level; and **National:** the impact can be considered to be of national importance.
Duration	**The lifetime of the impact is measured in relation to the lifetime of the proposed development.** **Short term:** the impact will be for 0 – 3 years, or only last for the period of construction; **Medium term:** three to ten years; **Long term:** longer than 10 years or the impact will continue for the entire operational lifetime of the

ASSESSMENT CRITERIA	CHARACTERISTICS
	project; and **Permanent:** this applies to the impact that will remain after the operational lifetime of the project.
Intensity	**This is the degree to which the project affects or changes the environment.** **Low:** the change is slight and often not noticeable, and the natural, cultural or social functions and processes are minimally affected; **Medium:** the environment is remarkably altered, but still functions in a modified way; and **High:** functioning of the affected environment is disturbed and can cease.
Probability	**This is the likelihood or the chances that the impact will occur.** **Low:** during the normal operation of the project, no impacts are expected; **Medium:** the impact is likely to occur if extra care is not taken to mitigate them; and **High:** the environment will be affected irrespectively; in some cases such impact can be reduced.
Nature	**Description of the impact as positive, negative or neutral.**
Confidence	**The level of information/knowledge available to the EAP for impact assessment purposes.** **Low:** the judgement is based on intuition and not on knowledge or information; **Medium:** common sense and general knowledge informs the decision; and **High:** scientific and or proven information has been used to give such a judgement.
Consequence	**A combination of extent, duration and intensity.** **Low:** low and medium intensity, short and medium term duration and site or local level extent; **Medium:** low and medium intensity, long term or permanent duration at a region or national level extent; OR low and medium intensity, long term or permanent duration and site or local level extent; OR high intensity, short to medium term duration at site or local level; OR high intensity, long term or permanent duration at site or local level; and **High:** high intensity, long term or permanent at a regional or national level.
Significance (before and after mitigation)	**A synthesis of the characteristics described above and assessed as low, medium or high. A distinction will be made for the significance rating without the implementation of mitigation measures and with the implementation of mitigation measures.** **Low:** low consequence and unlikely, probable or definite probability; medium consequence and unlikely probability; **Medium:** medium consequence and probable or definite probability or high consequence and unlikely probability. The impacts require attention and mitigation is required to reduce the negative impacts; and **High:** high consequence and probable or definite probability. Mitigation is crucial.
Cumulative Impacts	**The possible cumulative impacts will also be considered. Cumulative impacts have incremental impacts of the activity and other that past, present and future activities will have on a common resource.** **Low:** there is sufficient capacity of the environmental resources within the geographic area to respond to change and withstand further stress; **Medium:** the capacity of the environmental resources within the geographic area to respond to change and withstand further stress is reduced; and **High:** the capacity of the environmental resources within the geographic area to respond to change and withstand further stress has been or is close to being exceeded.

8.3 Impact Assessment

8.3.1 Planning, Design and Construction Phase

As this application is for the closure/ decommissioning of an existing illegal landfill site no impacts are associated with the planning, design and construction phase of the Project.

8.3.2 Operational Phase

The landfill site is to be closed but will operate for 5 years in the interim. Consequently, there are impacts expected and these include:

- Impacts on geographical and physical aspects: soil and water contamination;
- Impacts on biological aspects: alien vegetation establishment;

- Impacts on socio-economic aspects: employment, livelihoods (potential health and safety impacts to livestock grazing on site), health (dust, odours, contaminants); and,
- Visual impacts.

As the landfill is already operating, the impacts are already occurring and so are addressed in the EMPr as best practice management. As the Project entails the licensing of the landfill for closure, operational impacts are not assessed. The interim waste management measures to be implemented are indicated in the EMPr (Appendix F).

8.3.3 Decommissioning and Closure Phase

Potential impacts on geographical and physical aspects:	It is not foreseen that the closure of the landfill will have any negative impacts on geographical or physical aspects as the project area has already been altered / disturbed. However, it is foreseen that the closure of the landfill will have positive impacts on the physical environment, as the landfill area will be capped and re-vegetated.

Potential impact on biological aspects:	It is not foreseen that the closure of the landfill will have any negative impacts on biological aspects as the project area has already been altered / disturbed. Positive impacts are anticipated from the closure of the existing landfill, as the area will be rehabilitated to a blend in with the surrounding land uses (e.g. grazing land).

Potential impacts on socio-economic aspects:	Closure and rehabilitation activities will lead to the positive impact of additional (albeit temporary) employment opportunities within the Hlabisa LM. Some noise and dust might occur during closure activities.

Potential impacts on cultural-historical aspects:	It is not foreseen that the closure of the landfill will have any impact on cultural-historical aspects as the project area has already been altered / disturbed.

Potential visual impacts:	It is anticipated that the decommissioning of the existing landfill will have a neutral to positive impact on the visual environment, as the site will be rehabilitated to blend in with the surrounding rural environment.

Potential noise impacts:	
Nature of impact:	Noise generated as a result of machinery used and personnel required to implement the closure/ decommissioning activities on site.
Extent and duration of impact:	Site and Short Term
Probability of occurrence:	Definite
Degree to which the impact can be reversed:	Low
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	• Servicing of all vehicles and machinery to ensure good working order; and, • Use of silencers and mufflers on potentially noisy equipment.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Potential impacts due to air and dust emissions:	
Nature of impact:	Emissions from vehicles and equipment on site may cause a temporary decrease in air quality within the immediate surroundings. Similarly, dust generated during closure and rehabilitation activities may negatively impact on the surrounding areas ambient air quality.

Extent and duration of impact:	Local and Short-Term
Probability of occurrence:	Low
Degree to which the impact can be reversed:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	• All reasonable measures should be taken to minimise air emissions in the form of smoke, dust and gases from vehicles/ equipment used on site. • No fires are allowed. • The Landfill Supervisor shall implement measures to restrict the generation of dust during rehabilitation activities. • The Landfill Supervisor shall control dust from spoil dumps or stockpiles by ensuring that they are kept covered or must have a suitable dust palliative applied (such as water or commercial dust suppressants) to prevent windborne dust pollution.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Potential impacts due to illegal waste mining	
Nature of impact:	Illegal waste mining may occur increasing environmental, health and safety impacts and risks including: • Burning of waste leading to impacts on the local air quality; • Excavation of waste resulting in the increased exposure to vermin and insects; and, • Health and Safety risks increasing because of changes to ground stability.
Extent and duration of impact:	Local
Probability of occurrence:	Medium-High
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium-High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	• All existing fencing shall be maintained to prevent access for illegal dumping and waste mining. • The local community shall be informed of the site closure and made aware of alternatives through public meetings, the placement of notices in local newspapers, etc. • The Municipal Manager shall ensure placement of signage close to the road informing the public of site closure and providing details on alternative disposal sites or facilities. • Maintain security at the site for a short period after closure to prevent potential illegal dumping and / or vandalism.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact on health and safety:	
Nature of impact:	Health and safety incidents to workers during closure and rehabilitation activities.
Extent and duration of impact:	Local
Probability of occurrence:	Medium
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	High
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High
Degree to which the impact can be mitigated:	High
Proposed mitigation:	• Safety training of staff is required to minimize accidents. • All staff are required to wear the required Personal Protective Equipment (PPE) at all times.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact on health and safety:	
Nature of impact:	Movement of operational vehicles and equipment or danger associated with open areas (trenches, unstable ground etc.) may lead to potential safety impacts to the public if not demarcated as no go zones.
Extent and duration of impact:	Site
Probability of occurrence:	Medium
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	High
Proposed mitigation:	• The site must have access control. The public will not be allowed near the landfill. • On site vehicles will be fitted with reversing horn. • Staff on site will wear PPE and reflective clothing. • Open excavations will be marked with danger tape.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact on surface water and soils:	
Nature of impact:	Contamination of soils and surface water due to hydrocarbon spills from vehicles/ equipment used during rehabilitation.
Extent and duration of impact:	Local
Probability of occurrence:	Medium
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium

Potential impact on surface water and soils:	
Proposed mitigation:	• Precautionary measures must be taken to prevent any form of pollution. • Accidental pollution incidents shall be reported to the Municipal Manager immediately after they occur and shall be cleaned up (to the satisfaction of the ECO) by the Landfill Supervisor or a nominated clean-up organisation. • Vehicle and plant maintenance shall be confined to the areas demarcated for this purpose. Should any amount of fuel, oil, transmission or hydraulic fluids be spilled onto the soils, the Municipal Manager or ECO shall be informed immediately. Tests must be conducted to determine the extent of soil contamination as soon as a spillage occurs. The polluted soil shall be rehabilitated or remediated to the satisfaction of the ECO. • On-site stormwater management shall be to the satisfaction of the ECO. • Any spillage of waste, caused by any party during the closure activities, shall be cleaned up immediately and appropriately disposed of.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact on surface water and soils:	
Nature of impact:	Soil erosion and sedimentation of water resources during landfill rehabilitation and closure activities, such as digging, trenching and stockpile movement can lead to increased erosion and the alteration of sedimentation regime.
Extent and duration of impact:	Local
Probability of occurrence:	Medium
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	• Earthmoving activities outside the footprint area within the study areas and vehicle movement outside of existing access roads should be prohibited. • Monitor all stockpiles for signs of erosion. • Any areas where active erosion and sedimentation is observed must be rehabilitated and berms must be utilised to slow movement of water where necessary. • No new access road crossings to the study area across wetland features should be constructed without environmental authorisation/s, as they have the potential to concentrate surface flow and result in erosion.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact on water resources:	
Nature of impact:	Surface and groundwater water pollution may occur after closure if the engineering design/ instructions are not correctly implemented on site.
Extent and duration of impact:	Local
Probability of occurrence:	Medium
Degree to which the impact can be reversed:	Medium
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	• A professional engineer must provide detailed closure drawings and oversee and sign off on the closure of the landfill. • Maintenance of the site is ongoing until vegetation establishment has been completed. • The installation of stormwater management measures, such as intercept drains and conservancy tanks, must be regularly checked for damage and proper functioning. • Trenches and other stormwater management interventions as part of a stormwater management plan is recommended in order to restrict water accumulation in the waste body, as water ingress into the waste body can result in more leachate. Trenches and related stormwater control infrastructure should be located outside of buffered watercourses and drainage lines (Figure 7). • Water collected in the conservancy tank (if applicable) must be analyzed for potential contamination. • Shaping and capping of the site is to be done to reduce the potential for future water pollution. • A leachate collection system is to be installed and monitored for 18 months. • A monitoring borehole is required downstream of the landfill. Water Levels should be measured monthly and the readings recorded against time and date • Water samples should be taken at least every 6 months, preferably in April and October (end of summer and winter) and the samples sent to a reputable lab for analysis. Refer to Appendix F for further detail) • Field readings should also be taken. • A monitoring report done by a geohydrologist should be compiled at the end of the 18 months, using the monitoring data collected. This report will then be evaluated to determine whether further monitoring may be needed.
Cumulative impact post mitigation:	Unknown
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Potential illegal dumping/ littering impacts:	
Nature of impact:	Night-time and / or weekend fly tipping (illegal dumping) may result in dumping of unacceptable waste steams increasing environmental, health and safety impacts and risks including: • Changes in the expected composition of leachate from the waste disposal facility resulting in the pollution of soil and water resources. • Changes in expected landfill gas emissions resulting in flammability, toxicity, asphyxiation and other hazards as well as objectionable odour negatively impacting on on-site personnel (and other on-site persons) health and safety.

Potential illegal dumping/ littering impacts:	
	• The increase of the landfill footprint in instances of uncontrolled dumping of wastes.
Extent and duration of impact:	Local
Probability of occurrence:	High
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium
Degree to which the impact can be mitigated:	High
Proposed mitigation:	• All existing fencing shall be maintained to prevent access for illegal dumping. • The local community shall be informed of the site closure and made aware of alternatives through public meetings, the placement of notices in local newspapers, etc. • The Municipal Manager shall ensure placement of signage close to the road informing the public of site closure and providing details on alternative disposal sites or facilities. • Maintain security at the site for a short period after closure to prevent potential illegal dumping and / or vandalism. • Placement of skips near the community residential areas / notices informing community members of the waste transfer station for use to safety dispose of their waste.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Loss of terrestrial habitat and indigenous species	
Nature of impact:	Activities conducted for the closure of the landfill may extend beyond the site's boundaries and lead to the loss of terrestrial habitat and indigenous species
Extent and duration of impact:	Local
Probability of occurrence:	Medium
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	Low (loss of watercourse habitat)
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	High
Proposed mitigation:	• Clean up the surrounding areas and move the litter into an approved landfill area. • Vehicle movement must be restricted to the fenced area and the road to the landfill and should not disturb additional vegetation and habitat. • Rehabilitation activities should focus on clearing the litter from the area outside the landfill and establishing a soil cover over the litter on site. • No landfill activities should occur outside of the existing study area boundaries.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Loss of watercourse habitat and indigenous species	
Nature of impact:	Activities conducted for the closure of the landfill may lead to the loss of wetland areas within the 500 m buffer of the landfill.
Extent and duration of impact:	Local
Probability of occurrence:	Medium
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	Low (loss of watercourse habitat)
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	High
Proposed mitigation:	• Clean up the surrounding areas and move the litter into an approved landfill area. • Vehicle movement must be restricted to the fenced area and the road to the landfill and should not disturb additional vegetation and habitat. • Rehabilitation activities should focus on clearing the litter from the area outside the landfill and establishing a soil cover over the litter on site. • No landfill activities should occur outside of the existing study area boundaries.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Potential impact of alien invasive plants	
Nature of impact:	Alien plant species may establish on site post closure/ decommissioning of the landfill site. This may interfere with the capping layer making it less able to control the ingress of water, resulting in leachate.
Extent and duration of impact:	Local
Probability of occurrence:	Medium
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	Medium (increased potential in spreading of alien invasive plants in the area)
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	High
Proposed mitigation:	• Maintenance of the site is ongoing until indigenous vegetation has successful established on site. • Any alien plants identified must be removed from site and destroyed. • Care must be taken not to control indigenous species.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	No impact

Potential infestation by pest species	
Nature of impact:	Landfill sites can potentially provide habitat and food to several indigenous and alien pests and scavengers, including rats, mice, jackals, feral dogs and feral cats. Several bird species including crows, as well as insect species such as flies may also become a problem. At present,

Potential infestation by pest species	
	the site does not appear to have large numbers of pest species.
Extent and duration of impact:	Local
Probability of occurrence:	Medium
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	Medium (increased potential in spreading of pest species in the area)
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	High
Proposed mitigation:	• Cover newly dumped rubbish containing food scraps at least once a week. • If excessive numbers of flies are present the rubbish must be covered at the end of each day.
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	No impact

8.4 Environmental Management Programme

A Draft EMPr is included as part of the DBAR (refer to Appendix F) which is made available for public review; after which, it will be finalised and submitted as part of the FBAR to the KZN EDTEA. The EMPr outlines the impacts and associated mitigation measures for the closure and decommissioning phase of the project. The EMPr comprises:

- Summary of Impacts: The predicted negative environmental impacts for which mitigation is required, and positive impacts requiring enhancement.
- Description of mitigation measures: The EMPr identifies feasible and cost-effective mitigation measures to reduce significant negative environmental impacts to acceptable and legal levels. Mitigation measures are described in detail and will be accompanied by designs, equipment descriptions, and operating procedures, where appropriate, as well as descriptions of technical aspects of implementing the mitigation measures.
- Description of monitoring programme: The monitoring programme indicates the linkages between impacts, indicators to be measured, measurement methods and definition of thresholds that will signal the need for corrective actions.
- Emergency Action Plan: The identification of possible accidents during the construction and closure phase of the project, with measures on how they will be prevented and/or managed.
- Institutional arrangements depict and define the responsibilities for mitigation and monitoring actions.
- Legal enforceability: The key legal considerations with respect to the EMPr are:
    - Legal framework for environmental protection.
    - Legal basis for mitigation.
- Implementation schedule and reporting procedures that specify the timing, frequency and duration of the mitigation measures.
- Description of requirements for record keeping, reporting, review, auditing and updating the EMPr.

8.5 Final Basic Assessment Report

Following the review period, the draft BAR will be updated with comments received from the public to produce a final BAR. The final BAR will be submitted to the KZN EDTEA for consideration and decision-making.

8.6 Decision-making Phase

Once the WML (positive or negative) has been issued, all registered I&APs will be notified of the decision and have the opportunity to appeal the decision should they not agree with the authorisation issued or any conditions of authorisation.

9. IMPACT STATEMENT AND CONCLUSION

Based on the findings of the Basic Assessment process, no impacts of high significance or environmental fatal flaws will result from the granting of a NEMWA WML (i.e. Closure after 5 years) for the existing landfill facility at Hlabisa. Minimal socio-economic impacts are expected as an alternative licensed landfill site will need to be established within the 5 year operational period of this landfill site prior to closure to ensure continuity with waste management service delivery in Hlabisa LM. Noise and dust pollution during closure and rehabilitation will be limited due to the extent of the illegal landfill and rural nature of the immediate surrounding environment.

The closure and rehabilitation of the illegal landfill will have positive impacts in that the site will be shaped, capped and revegetated to minimise water pollution. A surface and groundwater monitoring programme should be implemented, as indicated in the EMPr (Appendix F). All potential impacts during the closure phase of the Hlabisa landfill facility can be minimised through the implementation of the practical and appropriate mitigation measures contained in the EMPr (Appendix F).

The no-go alternative would imply that the current state of the landfill site would remain as it is. In other words the condition of the landfill and its impacts on groundwater would remain, and the site would not be rehabilitated. Current leachate generation would continue to pollute soil and water resources and negative health and visual impacts on site would remain into the future.

Thus, based on the above, the EAP is of the opinion that the WML for the closure of the Hlabisa landfill site after 5 years of continued operation should be granted to the Applicant, with the following licence conditions/ recommendations:

- In the interim period of 5 years, the site is managed according to the Minimum Requirements for Waste Disposal by Landfill (Second Edition, 1998) and the updated liner requirements from the Norms and Standards for Disposal of Waste to Landfill, which includes *inter alia* lining of cells, daily cover, site access control, waste acceptance control and site supervision.
- Compliance to the mitigation measures and recommendations as indicated in the Watercourse Assessment and Ecological Assessment Reports (Appendix E) and EMPr (Appendix F).
- An Environmental Control Officer (ECO) is to be appointed to audit compliance with the EMPr and WML. Once the closure of the site has been signed off by the Professional Engineer, the ECO is to submit a final audit report with findings and recommendations to the KZN EDTEA. The Department may decide to amend the frequency of future monitoring based on the results of the audit.
- All conditions contained within the DWS Record of Recommendation (RoR) should be captured as conditions of the WML issued.

The licensing of the illegal Hlabisa landfill is in accordance with an initiative driven by the DEA to ensure the legal compliance of all municipal landfills, which in turn ensures appropriate and effective environmental management of these sites. The application process is currently in the Draft Basic Assessment Phase, and its main purpose is to seek the input and comments of I&APs on the EIA conducted and mitigation/ recommendations stated in the EMPr and DBAR.

Comments received during the public review period will be incorporated into a Final Basic Assessment Report, to be submitted to the KZN EDTEA for their approval

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Appendix A
Public Consultation Documentation

Appendix B
WML Application Form

Appendix C
Site Photographs

Appendix D
Site Locality

Appendix E
Specialist Studies

Appendix F
Environmental Management Programme

Appendix G1
CV of the EAP

Appendix G2
CVs of the Project Team