Eskom Holdings SOC Limited

Environmental Impact Assessment for the Proposed Continuous Ashing at the Tutuka Power Station, Mpumalanga Province

DEA EIA Reference Number:
14/12/16/3/3/3/52
And
NEAS Ref Number: DEA/EIA/0001416/2012

Date:
December 2014

Report Version:
Final

Submitted by:
Lidwala Consulting Engineers (SA) (Pty) Ltd
1121 Hertzog Street, Villieria,
Pretoria, South Africa
P.O. Box 32497,
Waverley, Pretoria, 0135

Represented by: **Frank van der kooy**
Tel: +27 11 793 5486
Cell: +27 82 890 1918
Email: environmental@lidwala.com
Website: www.lidwala.com

DOCUMENT DESCRIPTION

Client:	Eskom Holdings SOC Limited
Project name:	Environmental Impact Assessment for the Proposed Expansion of Ash Disposal Facilities at Tutuka Power Station, Mpumalanga Province
Report type:	Final Environmental Impact Assessment Report
Lidwala Project number:	12013KNK
Document number:	Document 1
Authority Reference:	DEA - 14/12/16/3/3/3/52 NEAS - DEA/EIA/0001416/2012
Version:	Final
Compiled by:	Danie Brummer (Pr.Sci.Nat) Moseketsi Mochesane (Bsc Botany/Bsc.hons Env. Man) Bongi Mhlanga (PPP) Nicolene Venter (PPP) <u>Specialists:</u> Frank van der Kooy (Pr.Sci.Nat) (Social) Riaan Robbeson (Pr.Sci.Nat) (Flora) Dewald Kamffer (Pr.Sci.Nat) (Fauna) Jenny Ellerton (Pr.Sci.Nat) (Ground Water) Johnny van Schalkwyk (Heritage) Andrew Pearson (Avifauna) Michiel Jonker (Surface Water) D. Jansen van Vuuren (Visual) Marius van Zyl (Ash) Garry Paterson (Soil) Francois Malherbe (Noise) Terry Bird(Air) Reneé von Gruenewaldt (Air) <u>GIS:</u> Glenn Mullett Katie Sassenberg

EXECUTIVE SUMMARY

1 INTRODUCTION

1.1 Project Background

Eskom's core business is the generation, transmission and distribution of electricity throughout South Africa. Electricity by its nature cannot be stored and must be used as it is generated. Therefore electricity is generated according to supply-demand requirements. The reliable provision of electricity by Eskom is critical to industrial development and poverty alleviation in the country.

If Eskom is to meet its mandate and commitment to supply the ever-increasing needs of end-users in South Africa, it has to continually expand its infrastructure of generation capacity and, transmission and distribution powerlines.

The coal-fired power generation process results in large quantities of ash, which are disposed of in a dry ash disposal facility (**Figure 1).** This process involves ash being transported from the power station by conveyors and disposed of on an ash disposal facility by means of a stacker.

The proposed development has the following specifications:

- Capacity of airspace of ~158 million m^3; and
- Ground footprint of ~800 ha (Ash disposal facility & pollution control canals)

This ash disposal facility will be able to accommodate the ashing requirements of the power station for the next 41 years, to 2055 (these timelines are based on an annual ash production rate of 4.20 million tonnes). All land within an 8km radius of the power station was assessed to identify suitable alternatives for the proposed continuous ash disposal facility.

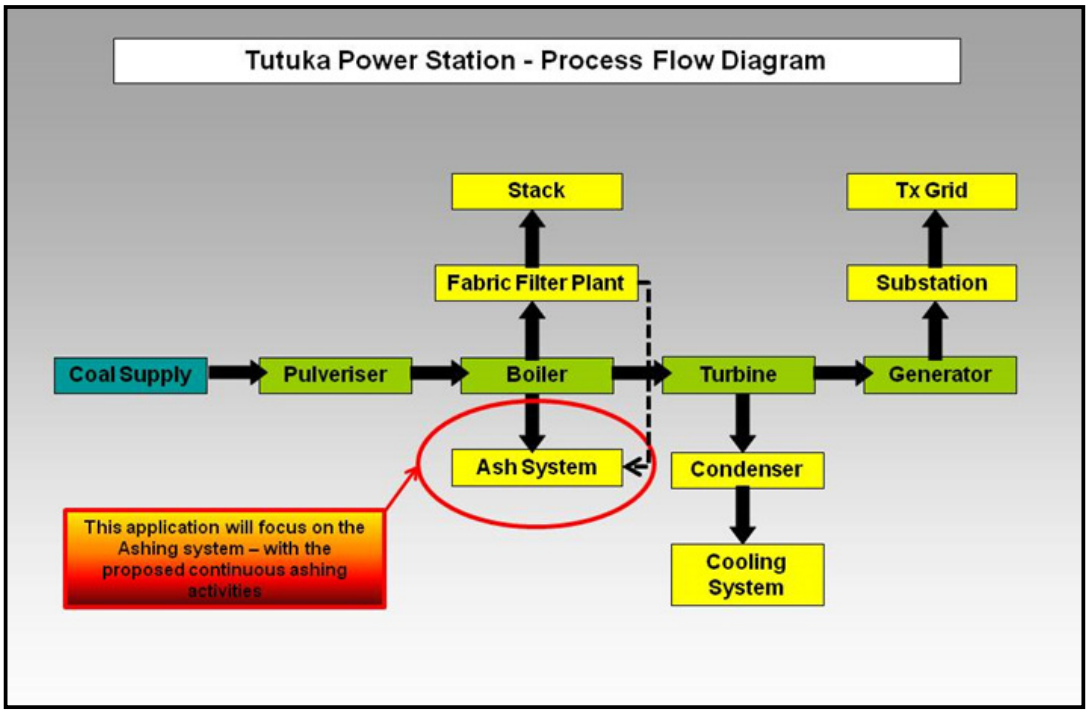

Figure 1: An overview of the activities on site and where this project fits within the process

1.2 Description of the Study Area

Tutuka Power Station is located approximately 25 km north northeast (NNE) of Standerton in the Mpumalanga Province. The power station falls within the Lekwa Local Municipality which falls within the Gert Sibande District Municipality.

The proposed study area, utilised in the screening study, is within an 8 km radius of the centre point of the Tutuka Power Station Site (**Figure 2. and 3**). A greater part of the study area is made up of agricultural, mining and power generation activities.

Figure 2: Tutuka Power Station forms the centre point of the study area, as the source of ash

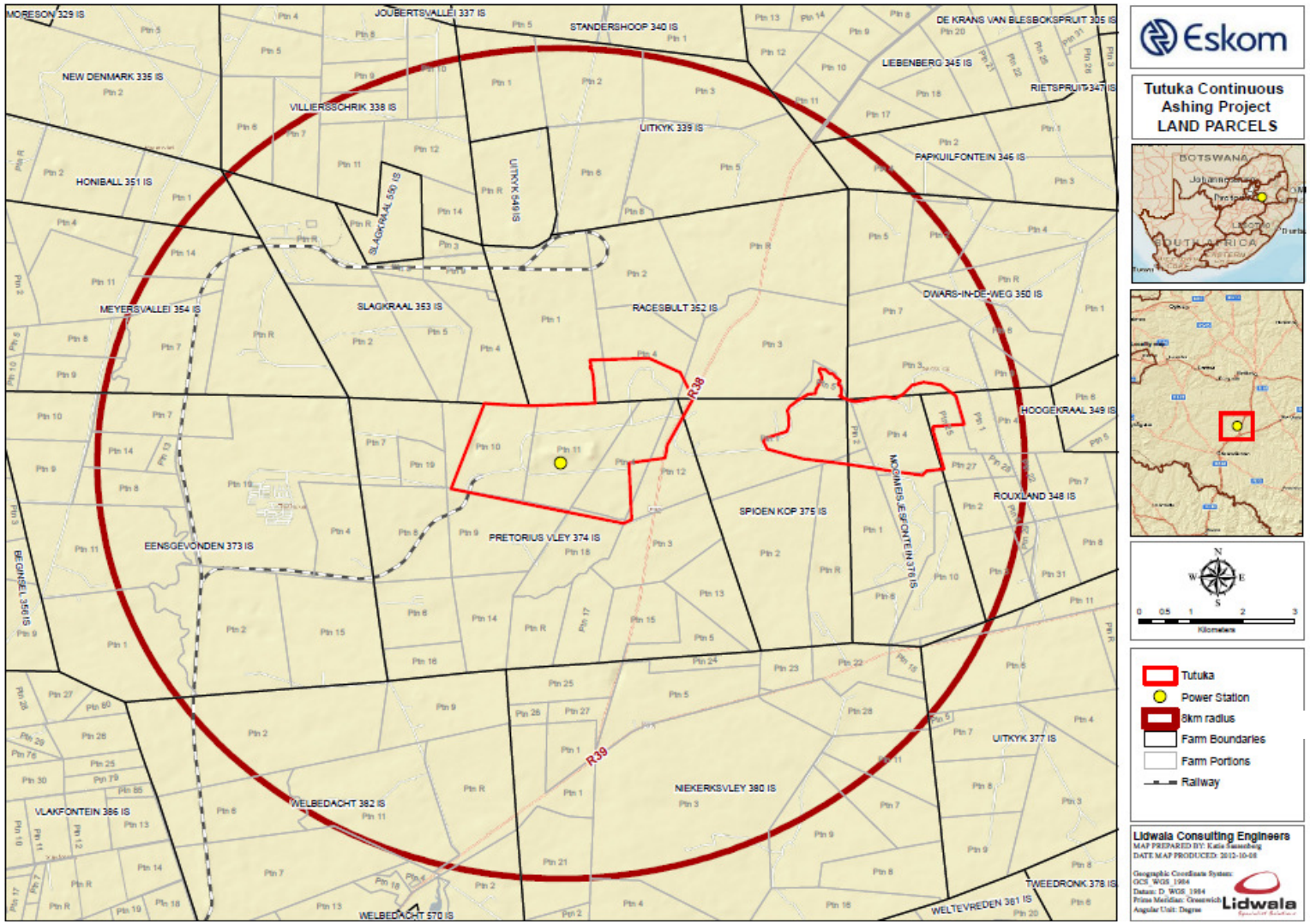

Figure 3: The greater study area

2 PROCESS TO DATE

The Environmental Impact Assessment (EIA) process for the proposed continuous ash disposal facility is comprised of two main phases, namely the Scoping phase and Impact Assessment phase. This report documents the tasks which have been undertaken as part of the Impact Assessment phase of the EIA. These tasks include the public participation process and the documentation of the issues which have been identified as a result of these activities.

To date, tasks that have commenced include the:

- Identification of stakeholders or I&APs;
- Notification and advertisements;
- Background Information Documents; and
- Ongoing consultation and engagement

More detail on the above is available in **Chapter 3**.

The Draft EIA Report was released for public review and comment from **21 July 2014** to **19 September 2014**. During the review period a public participation process (PPP) was undertaken, allowing Interested and Affected Parties (I&APs) to engage with the project proponents and independent environmental consultants. The PPP consisted of a public meeting as well as one-on-one interactions. Issues raised by I&APs during the public participation process were documented and are included in this Final EIA Report.

The relevant authorities required to review the proposed project and provide an Environmental Authorisation were consulted from the outset of this study, and have been engaged throughout the project process. The National Department of Environmental Affairs (DEA) is the competent authority for this Project. The Department of Water Affairs (DWA), and the Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET) are noted as key commenting authorities. For a comprehensive list see **Chapter 2 and 3**.

The Impact Assessment Phase of an EIA serves to assess the impacts identified during the scoping phase. The EIA Phase has been undertaken in accordance with the requirements of sections 24 and 24D of the National Environmental Management Act (NEMA) (Act 108 of 1998), as read with Government Notices R 543 of the 2010 EIA Regulations. The purpose of the Impact Assessment Phase of an EIA is as follows:

- Ensure that the process is open and transparent and involves the Authorities, proponent and stakeholders;
- Address issues that have been raised during the preceding Scoping Phase;
- Assess alternatives to the proposed activity in a comparative manner;
- Assess all identified impacts and determine the significance of each impact; and
- Formulate mitigation measures.

3 SUMMARY OF THE LEGISLATION CONTEXT

The legislative framework applicable to this project is diverse and consists of a number of Acts, Regulations and Treaties which must be complied with. A summary of the key legislation is provided hereunder.

- National Environmental Management: Waste Act No 59 of 2008
- The National Environmental Management: Air Quality Act No 39 of 2004;
- National Water Act No 36 of 1998;
- GN R1179 (GG 16536 of 25 August 1995) – Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act No 85 of 1993;
- Hazardous Substances Act No 15 of 1973
- Constitution of South Africa, Act 108 of 1996 (with reference to noise)
- Explosives Act No 26 of 1956 and Regulation 1604 of 8 September 1972;
- National Environmental Management Act No 107 of 1998 (with reference to noise and prevention of pollution)
- National Environmental Management: Biodiversity Act No 10 of 2004 (in respect of Fauna, Flora and National Heritage Resources)
- Conservation of Agricultural Resources Act No 43 of 1989 (in respect of Fauna, Flora and National Heritage Resources)
- National Forest Act No 84 of 1998 (in respect of protected trees)
- National Veld and Forest Fire Act No 101 of 1998
- National Heritage Resources Act No 25 of 1999
- Promotion of Access to Information Act No 2 of 2000 (in respect of record-keeping and interested and affected parties and monitoring of environmental impacts)

The process also investigates the consistency of the Tutuka Ash Disposal Facility Extension project with the NEMA Principles as well as with the Equator Principles and those of the International Finance Corporation (IFC) Performance Standards on Social and Environmental Sustainability.

4 DESCRIPTION OF THE BASELINE ENVIRONMENT

The particular area required for the continuous ashing facility is approximately 759 ha, which is located on the eastern and southern portion of the existing Tutuka Power Station ash disposal facility. However, in order to allow for a robust environmental process, all land within a radius of 8 km was assessed in order to identify potential alternatives sites should sensitive environmental aspects limit the suitability of this particular portion of land. The Tutuka Continuous Ashing EIA study area is therefore located within an eight (8) kilometre radius around a centre point which is the Tutuka Power Station. The study area is approximately 200 square kilometres in size and includes a total of 24 different farms divided into 128 farm portions.

The study area is characterised by the strong undulating character typical of the Mpumalanga province with low ridges east of the study area. The natural topography of the area has been disturbed as a result of various agricultural and power generation activities.

The climate in the study area can be described as typical highveld conditions with summers that are moderate and dry, while winters are cold and dry. Severe frost and snow are sometimes experienced. The area also falls within the mist belt. The mean annual precipitation is approximately 580 mm/year, with rain experienced predominantly in the summer months (October to April). Annual average maximum, minimum and mean temperatures for the site are given as 31.5°C, 0.9°C and 15.3°C, respectively. The prevailing wind direction is recorded as being east south-easterly winds.

Tutuka Power Station and surrounding area (8km radius) is underlain by rocks of Permian to Jurassic age. More specifically:

- Permian Ecca Group - Vryheid Formation;
- Karoo Supergroup – Karoo Dolerite.

The study site corresponds to the Grassland Biome as defined by Mucina & Rutherford (Vegmap, 2006). This ecological type is found in the eastern, precipitation-rich regions of the Highveld. Grasslands of these parts are regarded 'sour grasslands'. The three site alternatives are spatially represented in the Soweto Highveld Grassland ecological type. This vegetation type comprises a gently to moderately undulating landscape on the Highveld plateau supporting short to medium-high, dense, tufted grassland dominated almost entirely by *Themeda triandra* and accompanied by a variety of other grasses such as *Elionurus muticus*, *Eragrostis racemosa*, *Heteropogon contortus* and *Tristachya leucothrix*. In places to disturbed, only scattered small wetlands, narrow stream alluvia, pans and occasional ridges or rocky outcrops interrupt the continuous grassland cover.

The study area considered during the EIA phase encompasses three alternative areas around the current infrastructure, and falls over three quaternary catchments in the Upper Vaal Water Management Area (WMA), with the Tutuka Power Station located in the C11K quaternary catchment, draining southwards towards the Grootdraai Dam via the Leeuspruit. The study area is located in an Upstream Management Catchment (NFEPA – Nel et al., 2011). The wetland NFEPA spatial data do not indicate the presence of NFEPA wetlands. Neither the vegetation unit (Mesic Highveld grassland group 3) nor the wetland types (seeps, depressions, valley bottoms and floodplains) are listed as threatened ecosystems. According to the MBCP (Ferrar & Lötter, 2007) the study area is located in an 'Ecosystem Maintenance' sub-catchment.

The DWA 1:500 000 scale hydrogeology map of the area (Sheet 2526 Johannesburg) shows that the area within an 8 km radius of the Tutuka site is entirely classified as "D2", suggesting the underlying aquifer is inter-granular and fractured and the average borehole yield is reasonably low ranging between 0.1 and 0.5 litres per second (L/s). There are no major groundwater abstractions shown on the hydrogeological map within 8km of the site.

5 IMPACT ASSESSMENT SUMMARY

5.1 Construction phase impacts

During the construction phase, the majority of impacts identified were considered to be of low significance in the event that the appropriate mitigation measures are implemented.

The following impacts were assessed to be of High significance in the event that mitigation measures are not implemented as required:

- Agricultural land
  - Loss of agricultural land
- Surface water
  - Loss of wetland function
  - Altered Hydrology
  - Water quality deterioration down stream
  - Impacts related to erosion and sedimentation
- Biodiversity
  - Impacts species of conservation importance (Fauna and Flora)
  - Destruction or degradation of important/ protected ecological types
  - Displacement of fauna species, human-animal conflicts & interactions
  - Impacts on ecological connectivity and ecosystem functioning

A total of nine (9) impacts related to the construction of the ash disposal facility were assessed as having a high significance before the implementation of mitigation measures. After the implementation of mitigation measures the intensity levels of all impacts reduced significantly.

With regards to the construction of the pipeline there were no impacts that were considered to be of a high significance, the majority where considered either medium or low before the implementation of mitigation measures.

5.2 Operational phase impacts

The majority of the impacts identified, associated with the operational phase were considered to be of low significance in the event that the appropriate mitigation measures are implemented.

The following impacts were assessed to be of high significance in the event that mitigation measures are not implemented as required:

- Surface Water
  - Altered hydrology
  - Deteriorating water quality downstream

- Agriculture
  - Loss of agricultural soil
- Biodiversity
  - Indirect impacts on surrounding habitat
  - Impacts species of conservation importance (Fauna and Flora)
  - Destruction or degradation of important/ protected ecological types
  - Displacement of fauna species, human-animal conflicts & interactions
  - Impacts on ecological connectivity and ecosystem functioning

With regards to the dry ash disposal facility a total of ten (10) impacts were assessed as having a high significance before the implementation of mitigation measures. After the implementation of mitigation measures the intensity levels of all impacts dropped, except for the social impact in terms of continued electricity generation, which is considered to be a positive impact.

With regards to the operational phase for the pipeline there were no impacts that were considered to be of a high significance, the majority where considered either medium or low before the implementation of mitigation measures

5.3 Decommissioning phase impacts

As with the construction and operational phases, the majority of impacts identified associated with the de-commissioning phase were considered to be of low significance in the event that the appropriate mitigation measures are implemented.

- Agriculture
  - Loss of agricultural Soil
- Surface Water
  - Deteriorating water quality downstream
- Biodiversity
  - Displacement of fauna species, human-animal conflicts & interactions
  - Impacts on ecological connectivity and ecosystem functioning
- Visual
  - Permanent transformation of the landscape

With regards to the dry ash disposal facility a total of five (5) impacts were assessed as having a high significance before the implementation of mitigation measures. After the implementation of mitigation measures the intensity levels of all impacts dropped significantly.
Socio-Economic impacts were not assessed for the de-commissioning phase. It is also anticipated that all environmental impacts will be revisited at power station closure in order to update the impact analysis to take all new information and plans into account.

5.4 Cumulative Impacts

The majority of cumulative impacts identified associated with the project were considered to be of low significance in the event that the appropriate mitigation measures are implemented.

The following impacts were assessed to be of High significance in the even that mitigation measures are not implemented as required:

- Agriculture
  - Loss of agricultural soil
- Biodiversity
  - Impacts on SA's conservation obligations and targets
  - Increase in local and regional fragmentation / isolation of habitat
  - environmental degradation, pollution

With regards to the ash disposal facility a total of four (4) cumulative impacts were assessed as having a high significance before the implementation of mitigation measures. After the implementation of mitigation measures the intensity levels of all impacts dropped.

5.5 Final Conclusions

5.5.1 Air Quality

The following was concluded from the air quality impact assessment:

- Particulate matter, as dust fall-out, PM10 and PM2.5, were identified as the pollutants of concern.
- Annual average ground-level concentrations of PM10 simulated by dispersion modelling did exceed NAAQS over an area ranging between 611 ha (**Alternative C**) and 949 ha (**Alternative A**). The number of sensitive receptors where exceedances are predicted ranges between 1 **(Alternative C**) and 4 (**Alternative B**)**.**
- Exceedances of daily standards for PM10 are expected lowest as a result of Alternative C.
- Irrespective of the alternative, effective and continuous application of the mitigation measures will be essential to maintaining compliance with the NAAQS.
- Alternatives C is the preferred sites, with Alternative A being acceptable.

5.5.2 Ground Water

The main impacts on groundwater of the proposed ash disposal facility are likely to be Deterioration in water quality; and Rise in groundwater levels in the immediate vicinity of the ash disposal facility due to additional recharge and groundwater mounding, which mat alter the local groundwater flow direction.

The numerical model results suggest that the movement of leachate away from the ash disposal facility as a groundwater plume should take place relatively slowly, with plume extents being generally less than 1 km from the ash disposal facility after 100 years.

The main way to mitigate these impacts is to maintain the ash disposal facility in good condition (especially the drainage system). Once the ash disposal facility is decommissioned, it should be re-vegetated to minimise infiltration and to improve runoff quality, and the drainage system maintained to reduce downward movement of leachate from the base of the ash disposal facility. Groundwater monitoring from suitable boreholes should be undertaken during all phases of ash disposal and after closure. If required the numerical model could be updated with new monitoring data.

In terms of the risk to groundwater, all three proposed alternative sites (**A, B and C**) present a similar risk, although slight preference would be given to Sites B and C due to the higher proportion of non-perennial water courses within the footprint of Alternative Site A.

5.5.3 Surface Water

The wetland assessment ascertained that most wetlands within the primary and secondary study area are in a Modified state. The wetland study contributions to the screening and scoping assessment assisted in the selection of the current Alternatives assessed, in which large drainage lines and areas reflected a greater probability of wetness and were avoided as far as possible. General and more specific mitigation measures are provided for most anticipated impacts. The most significant impacts from a wetland perspective are considered to be the loss of wetland habitat that falls within the footprints of the proposed ash disposal facility and the risk of water quality deterioration due to seepage and leakage of pollutants from the facility.

All reasonable Alternatives have been assessed and it is unlikely that these impacts will be expressed with less significance anywhere else in the direct landscape than at Alternative A. However, some residual impact will persist if **Alternative A** is selected which may be

further mitigated by avoiding as much wetland habitat as is reasonably possible. A possible consideration might be to combine parts of **Alternative A and C**. It is however, recommended that ashing footprint be kept within the catchment of wetlands 6 and 10.

5.5.4 Biodiversity

It is evident that direct impacts associated with the various phases of the project are mostly restricted to the physical activities associated with construction activities and, to some extent, activities associates with the decommissioning phase (rehabilitation). Indirect as well as direct impacts are mostly restricted to the site and immediate surrounds.

The implementation of generic and site specific mitigation measures are expected to ameliorate impacts to an acceptable significance. In selected areas, mostly associated with wetland related habitat, the success of mitigation measures be of a moderate nature.

5.5.5 Avifauna

No fatal flaws have been identified in terms of avifauna and the proposed ash disposal facility can be built on any of the three alternatives, provided that the various mitigation measures recommended in this report are implemented. However, from an avifaunal perspective, site **Alternatives C** preferred for development. The greatest impact of the proposed project is likely to be that of habitat destruction, while leachate from fly ash, into water systems used by avifauna is also of concern. Possible impacts of associated infrastructure (e.g. roads, pollution control dams, conveyors, pipelines and pump stations) will be fully assessed upon identification of the chosen alternative site. However, collisions are expected to be the largest impact of associated power lines (should they form part of the scope of the development and assuming that "bird-friendly" pylon structures are used which prevent the impact of electrocution), and some line marking may be a suitable mitigation method for this. Sensitive areas have been mapped, within which the abovementioned collision mitigation may need to be implemented. Furthermore the following conclusions and recommendations are made:

- Habitat destruction and disturbance are impacts that are associated with all activities of the proposed project; however they are not expected to be highly significant, and should be mitigated for as per this report and the use of the Construction EMP.
- Should any of the focal species be found to be nesting, breeding or roosting on the site, during any future phase, the EWT should be contacted for further instruction.
- An "avifaunal walk through" by an avifaunal specialist, of the chosen site prior to construction to identify potential breeding sites or nests of focal species.

5.5.6 Visual

The planned extension of the existing ash disposal, is unlikely to have any significant visual impacts. This statement is qualified in terms of the following:

- The existing ash disposal site has been established as a landform in the landscape, and is strongly associated with the Tutuka Power Station. By extending the ash disposal site, it will be enlarged in terms of its height and footprint, but its association with the power station will remain. All things considered, the landscape provide sufficient visual absorption capacity to accommodate the planned extension of the ash disposal site.
- The number of sensitive receptors is small. Perceptions with regard to the extension of the ash disposal site are anticipated to be neutral, based on the assumption that it will not be in contrast with the current landscape and that the sense of place will not be altered significantly.

5.5.7 Heritage

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which it is proposed to develop the dry ash disposal facility and the rerouting of existing infrastructure.

The cultural landscape qualities of the region essentially consist of one component. The first is a rural area in which the human occupation is made up of a pre-colonial element (Iron Age) as well as a much later colonial (farmer and industrial) component.

Based on an analysis of available information and the field survey, it is our opinion that all three Alternatives would be suitable for the development of the continuous ash disposal facility. However, for the project to continue, the following is to be done:

- The mitigation measures set out for each category of sites in Section 5.4 of the Heritage report **(Appendix O)** is implemented if development takes place in the vicinity of any the identified sites.
- The management measures, as set out in Section 8 of Heritage report **(Appendix O)** should be implemented prior to construction taking place.
- If archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage consultant so that an investigation and evaluation of the finds can be made.

No impact on heritage sites, features or objects can be allowed without a valid permit from SAHRA.

6 WASTE MANAGEMENT LICENSE REPORT

An Ash classification assessment has been performed according to the DEA's Waste Classification and Management Regulations – August 2013. Based upon this the liner type has been identified and this was incorporated into the Conceptual Design.

Although the DEA's Waste Classification and Management Regulations (August 2013), waste classification system is currently the official waste classification system, the ash sample was also classified in terms of the DWA Minimum Requirements as this was the applicable system at the time of the Ash Classification study. The classification in terms of the Minimum Requirements have been summarised and provided as background.

Based on the analytical results obtained from the distilled water leach and total concentration analyses performed on the ash, the ash sample is classified as a Type 3 waste requiring disposal on a waste disposal facility with a Class C barrier system provided there are no site specific risks that require a more conservative barrier system. Please see the Specialist Ash Classification report for further detail **Appendix K**.

The Type 3 waste classification was the result of the leachable concentration (LC) value of boron (B) and chromium VI concentrations exceeding their respective LC0 values, and the total concentration (TC) value of barium (Ba) and copper (Cu) exceeding their respective TC0 concentration values

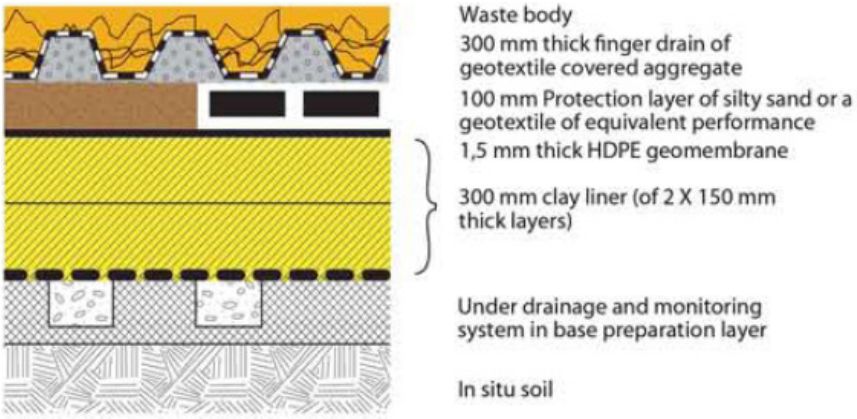

Figure 4: Class C Liner System

More information regarding the Waste Management License is included in **Chapter 10**.

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Environmental Impact Statement

The impact assessment phase of this project identified and assessed the potential impacts that the proposed continuous ash disposal facility and associated infrastructure may have on the proposed site and on the surrounding areas. Through this assessment, mitigation measures have been suggested in order to reduce or eliminate any impacts that were identified.

The EIA has concluded that the legislative requirement (NEMA EIA Regulations 2010), to consider alternatives during the EIA process is focused strongly on feasible and reasonable alternatives that meet the requirements of the proposed project. The specialist studies demonstrated that from an Environmental perspective Alternative C has a slight preference. As a result of similar Environmental impacts that has been identified on all the proposed alternatives and problems with the technical feasibility of Alternative C, Alternative A is recommended (Please refer to Eskom motivation Appendix X).

In terms of the 'no go' option, it was concluded that if the proposed continuous ash disposal facility was not established it would contribute negatively to the provision of reliable base load power to the national grid. It will result in the need to shut down the power station due to the lack of area for ash disposal, causing a long term reduction in electricity supply. It is important to note that the additional power output from Tutuka Power Station is still required to meet the national demand.

A more detailed discussion of the alternatives relative to this project is included in Chapter 7.

Most of the impacts with high significance during the construction phase could be mitigated to medium and low during the operational and de-commissioning phase. It is critical that the proposed mitigation measures be included in any possible authorisation.

All identified impacts have been based on normal operation conditions and all impacts identified were analysed according the following criteria, a summary of which is included in Chapter 9:

- Nature of the impact;
- Extent of the impact;
- Intensity of the impact;
- Duration of the impact;
- Probability of the impact occurring;
- Impact non-reversibility;
- Cumulative impacts;

Impact on irreplaceable resources; and
Confidence level.

In the view of the EAP, once final, the information contained in this report and the documentation attached thereto will be sufficient for the National DEA to make a decision in respect of the activities applied for with respect to the proposed continuous Ash Disposal Facility for the Tutuka Power Station.

This EIA provides an assessment of both the benefits and potential negative impacts anticipated as a result of the proposed continuous ashing facility for the Tutuka Power Station. The findings of the assessment conclude that identified significant impacts can be addressed with relevant mitigation measures, therefore, in the view of the EAP, no environmental fatal flaws should prevent the proposed project from proceeding on any of the studied alternatives.

In order to achieve appropriate environmental management standards and ensure that the mitigation from the environmental studies are implemented through practical measures, the recommendations from this EIA have been included within an Environmental Management Programme (EMPr) which is included in Appendix D. This EMPr must form part of the contract with the contractors appointed to construct and maintain the proposed infrastructure. The EMPr would be used to ensure compliance with environmental specifications and management measures. The implementation of this EMPr for key life cycle phases (i.e. construction and operation) of the proposed project is considered to be fundamental in achieving the appropriate environmental management standards as detailed for this project. In addition to this, it is imperative that an approved stormwater management plan is reviewed prior to the start of construction.

It is also recommended that the process of communication and consultation with the community representatives is maintained after the closure of this EIA process, during the construction and operational phases associated with the proposed project.

Eskom Holdings SOC Limited

Environmental Impact Assessment for the Proposed Continuous of Ash Disposal Facility at Tutuka Power Station, Mpumalanga Province

Final Environmental Impact Assessment Report

TABLE OF CONTENTS

TABLES

FIGURES

LIST OF APPENDICES