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TYPE OF DOCUMENT: VEGETATION ASSESSMENT FOR THE PROPOSED EXTENSION OF THE PAULPUTS SUBSTATION ON PORTION 4 THE FARM SCHUITKLIP 92

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VEGETATION ASSESSMENT FOR THE PROPOSED EXTENSION OF THE PAULPUTS SUBSTATION ON PORTION 4 THE FARM SCHUITKLIP 92

September 2008
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SECTION 1: INTRODUCTION

The loss, transformation and degradation of natural habitat are one of the most important casual mechanisms of biodiversity loss (UNEP, 2002). Conversion of natural habitat types by cultivation, grazing, urban development, afforestation, mining, dams, industry and alien plant invasions results in ecosystem degradation and species loss. The impact on biodiversity has been substantial, and significant proportions of South Africa’s flora and fauna are threatened.

Historically, the planning and implementation of developments did not consider the natural environment and consequently lead to the wasteful exploitation, destruction and contamination of many natural environments within South Africa. In order to prevent further degradation, operations that may harm the environment should be planned in such a way, that they make the best possible use of natural resources and avoid degradation of the environment. It is therefore necessary that environmental factors be considered. These should include studies relating to floral communities, in order to identify and allocate the areas potential for conservation and development. This report highlights the finding of a vegetation assessment that was conducted in area that has been earmarked for development.

1.1 PROJECT DESCRIPTION

THE DEVELOPER PROPOSES TO EXPAND THE CURRENT PAULPUTS SUBSTATION. THIS WILL INCLUDE:

- INSTALLATION OF A SECOND 250 MVA TRANSFORMER;
- INSTALLATION OF DOUBLE BUSBARS FOR 220 AND 132 KV YARDS;
- INSTALLATION OF A NEW BUS COUPLE BAY;
- EXTENSION OF THE 220KV YARD BY 73 M FROM THE EXISTING ESKOM BOUNDARY TO THE SOUTH OF THE SUBSTATION; AND

1.2 TERMS OF REFERENCE

THE TERMS OF REFERENCE FOR THIS ASSESSMENT WERE AS FOLLOWS:

- To provide a vegetation survey, including plants species list of each community and alien invasive species;
- To provide a Red Data plants species survey; and
- To provide an indication of the relative conservation importance and ecological function of the study site in terms of vegetation (to be incorporated into a sensitivity map).
1.3 LIMITATIONS

IN ORDER TO OBTAIN A COMPREHENSIVE UNDERSTANDING OF THE DYNAMICS OF COMMUNITIES AND THE STATUS OF ENDEMIC, RARE OR THREATENED SPECIES IN AN AREA, ECOLOGICAL STUDIES SHOULD IDEALLY BE REPLICATED OVER SEVERAL SEASONS AND OVER A NUMBER OF YEARS. HOWEVER, DUE TO TIME CONSTRAINTS SUCH LONG-TERM STUDIES ARE NOT FEASIBLE. CONSEQUENTLY, THE RESULTS OF THIS REPORT ARE BASED ON DATA AND OBSERVATION COLLECTED DURING A ONE-DAY FIELD SURVEY, A LITERATURE REVIEW AND EXPERIENCE GAINED BY THE AUTHOR THROUGH INVESTIGATIONS OF OTHER AREAS SIMILAR TO THE STUDY AREA IN QUESTION.
SECTION 2: BACKGROUND INFORMATION

2.1 LOCATION

The site is situated approximately 50 km north-east of Pofadder, on Portion 4 of the farm SchuitKlip No. 92, Northern Cape (Figure 1).

2.2 LAND USE

THE SITE IS CURRENTLY USED AS A SUBSTATION, BUT THE AREA SURROUNDING IT IS CURRENTLY OPEN SPACE USED FOR SHEEP FARMING.

2.3 CLIMATE

THE NORTHERN CAPE SEMI-ARID REGION CLIMATE HAS LITTLE RAINFALL (VARYING FROM 150 TO 350 MM PER YEAR WHICH OCCURS IN LATE AUTUMN). THE WEATHER CONDITIONS ARE EXTREME COLD AND FROSTY IN WINTER, AND EXTREMELY HIGH TEMPERATURES IN SUMMER. IN SUMMER THE AVERAGE MINIMUM IS 17.8°C AND AVERAGE MAXIMUM IS 34.6°C. IN WINTER THE AVERAGE MINIMUM IS 3.5°C AND AN AVERAGE MAXIMUM IS 20.6°C.

2.4 REGIONAL VEGETATION


THE COMPLEX GEOLOGY AND BROKEN, ROCKY TERRAIN RESULT IN A LARGE NUMBER OF DISTINCT VEGETATION COMMUNITIES WITHIN THIS REGIONAL VEGETATION TYPE. THIS TYPE TENDS TO OCCUR ON THE GRANITE-DERIVED SOILS RATHER THAN THE SHALE-DERIVED, CLAYEY SOILS OF THE OTHER NAMA KAROO TYPES. NOTHING IS KNOWN OF THE ROLE WILD ANIMALS, ESPECIALLY
NOMADIC SPECIES, PLAYED IN THE ECOLOGICAL FUNCTIONING OF THIS VEGETATION TYPE.

Figure 1: Locality map
SECTION 3: METHODOLOGY

The site visit took place on 25 September 2008. This is not an ideal time of year to conduct a vegetation survey as much of the flora is no longer in flower. Consequently, if the presence of sensitive habitats or sensitive species is suspected, a follow-up survey will be necessary in the summer months (November to March) to confirm or dismiss these suspicions.

The following investigations were conducted:

- With the aid of an orthophoto, preliminary ecological zones were identified. Five 10 x 10 m quadrates were sampled within each of these eco-zones, to determine the plant species composition and to assist in the delineation of different vegetation categories.

- Stratified line transects were walked over the entire study area, to:
  - identify additional plant species;
  - search for alien/exotic plants species; and
  - to search for Red Data species.

Based on all of the above findings, the ecological sensitivity of the study area was determined. This sensitivity was quantified by assessing the ecological function and conservation importance of the different ecological zones. These were defined as follows:

**High ecological function:** Sensitive ecosystems with either low inherent resistance or resilience towards disturbance factors or highly dynamic systems considered to be stable and important for the maintenance of ecosystems integrity and offering ecosystem services (e.g. large pristine grasslands, wetlands and ridge systems).

**Medium ecological function:** Relatively important ecosystems at gradients of intermediate disturbances. An area may also be considered to be of medium ecological function if it is directly adjacent to sensitive/pristine ecosystem.

**Low ecological function:** Degraded and highly disturbed systems with no ecological function.

**High conservation importance:** Ecosystems with high species richness and usually provide suitable habitat for a number of threatened species. Usually termed ‘no-go’ areas and unsuitable for development, and should be protected.

**Medium conservation importance:** Ecosystems with intermediate levels of species diversity without any threatened species. Low-density development may be allowed, provided the current species diversity is conserved.
Low conservation importance: Areas with little or no conservation potential and usually species poor (most species are usually exotic). These areas are considered suitable for development.
SECTION 4: VEGETATION ASSESSMENT RESULTS

4.1 DESCRIPTION OF AFFECTED ENVIRONMENT

THE ENTIRE STUDY AREA WAS COVERED BY ONE VEGETATION ZONE, NAMELY DISTURBED SCHMIDTIA KALAHARIENSIS GRASSLAND (FIGURE 1). AS THE NAME SUGGESTS THE VEGETATION IS DOMINATED BY SCHMIDTIA KALAHARIENSIS. OTHER COMMON GRASSES INCLUDED STIPAGROSTIS CILIATA, CENTROPODIA GLAUCA AND ERAGROSTIS LEHMANNIANA. THE HERBACEOUS LAYER SUPPORTED SPECIES SUCH AS CITRULLUS AMNATUS, CHRYSANTHEMOIDES INCANA, CUCUMIS AFRICANUS, FELICA NAMAQUANA AND SESAMUM TRIPHYLLUM. THE TREE/SHRUB LAYER SUPPORTS SCATTERED INDIVIDUALS OF BOSCIA FOETIDA SUBSP. FOETIDA, LYCIUM BOSCIIIFOLIUM AND RHIGOZUM TRICHOTOMUM.

ALL PLANTS SPECIES OBSERVED DURING THE SURVEY ARE LISTED IN TABLE 1 AND GRAPHIC DESCRIPTION OF THE STUDY AREA IS ILLUSTRATED IN PHOTO PLATE 1.
**Figure 2**: Vegetation Map

**Table 1**: Species observed within the study area

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forbs</strong></td>
<td></td>
</tr>
<tr>
<td><em>Citrullus amnatus</em></td>
<td>Tsamma melon</td>
</tr>
<tr>
<td><em>Chrysanthemoides incana</em></td>
<td></td>
</tr>
<tr>
<td><em>Cucumis africanus</em></td>
<td>Wild cucumber</td>
</tr>
<tr>
<td><em>Felica namaquana</em></td>
<td></td>
</tr>
<tr>
<td><em>Sesamum triphyllum</em></td>
<td>Wild sesame</td>
</tr>
<tr>
<td><strong>Grasses</strong></td>
<td></td>
</tr>
<tr>
<td><em>Aristida junciformis</em></td>
<td>Gongoni three-awn</td>
</tr>
<tr>
<td><em>Aristida congesta subsp congesta</em></td>
<td>Tassel three-awn grass</td>
</tr>
<tr>
<td><em>Chloris virgata</em></td>
<td>Feather-top chloris grass</td>
</tr>
<tr>
<td><em>Centropodia glauca</em></td>
<td>Gha grass</td>
</tr>
<tr>
<td><em>Enneapogon cenchroides</em></td>
<td>Nine-wned grass</td>
</tr>
<tr>
<td><em>Enneapogon desvauxii</em></td>
<td>Eight day grass</td>
</tr>
<tr>
<td><em>Eragrostis lehmanniana</em></td>
<td>Lehmans love grass</td>
</tr>
<tr>
<td><em>Schmitia kalahariensis</em></td>
<td>Kalahari sour grass</td>
</tr>
<tr>
<td><em>Stipagrostis ciliata</em></td>
<td>Tall bushman grass</td>
</tr>
<tr>
<td><em>Stipagrostis obtuse</em></td>
<td>Smal bushman grass</td>
</tr>
<tr>
<td><strong>Shrubs</strong></td>
<td></td>
</tr>
<tr>
<td><em>Lycium bosciifolium</em></td>
<td></td>
</tr>
<tr>
<td><em>Rhigozum trichotomum</em></td>
<td>Three awn</td>
</tr>
<tr>
<td><strong>Trees</strong></td>
<td></td>
</tr>
<tr>
<td><em>Boscia foetida subsp. foetida</em></td>
<td>Stink bush</td>
</tr>
</tbody>
</table>
PHOTO PLATE 1: THE DISTURBED SCHMIDTIA KALAHARIENSIS GRASSLAND OCCURRING WITHIN THE STUDY AREA

4.2 RED DATA PLANTS


THE FOLLOWING SPECIES ARE LISTED IN THE RED DATA LIST OF SOUTHERN AFRICA PLANTS (HILTON-TAYLOR, 1996), AND ARE KNOWN TO OCCUR WITHIN THE KALAHARI.

- *Adenia repanda*
• Adenium olefolium
• Gethylis spiralis
• Harpagophytum procumbens subsp. procumbens
• Helichrysum micropoides
• Hoodia gordonii
• Orbeopsis knobelii
• Stapelia barklyi
• Tridens marientalensis subsp. marientalensis

NO RED DATA PLANT SPECIES WERE OBSERVED ON SITE, AND DUE TO THE PREVIOUS DISTURBANCE WITHIN THE STUDY AREA IT IS UNLIKELY THAT ANY OF THESE SPECIES OCCUR ON SITE.

4.3 PROTECTED PLANTS

NO PROTECTED PLANT SPECIES WERE OBSERVED ON SITE. THE LIKELIHOOD OF SUCH SPECIES OCCURRING ON THE SITE IS CONSIDERED TO BE LOW.

4.4 DECLARED WEEDS AND INVADER PLANTS

CONCERN IS GROWING OVER THE WAY IN WHICH ALIEN/EXOTIC PLANTS ARE INVADING LARGE AREAS WITHIN SOUTH AFRICA. INVASIVE SPECIES ARE A MAJOR THREAT TO THE ECOLOGICAL FUNCTIONING OF NATURAL SYSTEMS AS WELL AS THE PRODUCTIVE USE OF THE LAND, AND SHOULD IDEALLY BE REMOVED IF THEY ARE SERVING NO ECOLOGICAL FUNCTION. HOWEVER, FORTUNATELY NO INVASIVE ALIEN PLANT SPECIES WERE OBSERVED WITHIN THE STUDY AREA.
The *Schmidtia kalahariensis* Grassland appears to have been exposed to disturbance. This is probably related to construction activities at the time of when the existing substation was being built. The species diversity is low and primarily supports pioneer species. No Red Data or Protected plant species were observed, and the likelihood of such species occurring within the study area is very low. The area does however still function as a grassland and is likely to support small faunal species such as birds and rodents. This vegetation category has been classified as being of *low Ecological Function* and *low Conservation Importance*.

A sensitivity map that visually illustrates the sensitivity of the site is displayed in Figure 3.

**Figure 3:** Sensitivity Map
Table 2 and Table 3 summarise the main risk sources associated with the proposed development.

**Table 2: Risks during construction phase**

<table>
<thead>
<tr>
<th>Possible Risks</th>
<th>Source of the risk</th>
<th>Site to be affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of natural vegetation</td>
<td>Construction activities</td>
<td>Development footprint</td>
</tr>
<tr>
<td>Erosion</td>
<td>Construction activities</td>
<td>Development footprint</td>
</tr>
<tr>
<td>Dust</td>
<td>Construction activities</td>
<td>Development footprint</td>
</tr>
<tr>
<td></td>
<td>Movement of vehicles</td>
<td>Access routes</td>
</tr>
</tbody>
</table>

**Table 3: Risks during operation phase**

<table>
<thead>
<tr>
<th>Possible Risks</th>
<th>Source of the risk</th>
<th>Site to be affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased run-off</td>
<td>Non-permeable surfaces (e.g. roads &amp; buildings)</td>
<td>Development footprint</td>
</tr>
</tbody>
</table>
SECTION 7: IMPACT DESCRIPTION, ASSESSMENT & MITIGATION MEASURES

7.1 CONSTRUCTION PHASE

7.1.1 Loss of natural vegetation

<table>
<thead>
<tr>
<th>Impact</th>
<th>Area</th>
<th>Extent</th>
<th>Duration</th>
<th>Intensity</th>
<th>Probability of occurrence</th>
<th>Significance</th>
<th>Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of natural vegetation</td>
<td>Development footprint &amp; nearby</td>
<td>Local</td>
<td>Permanent</td>
<td>High</td>
<td>Definite</td>
<td>Medium-Low</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>surrounds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

NATURAL VEGETATION WILL BE DESTROYED BY THE MOVEMENT OF VEHICLES, MOVEMENT OF THE WORK FORCE AND THROUGH THE CONSTRUCTION OF PERMANENT STRUCTURES. IN ORDER TO MINIMISE THIS, IT IS SUGGESTED THAT THE DEVELOPMENT FOOTPRINT BE DEMARCATED AND THE DESTRUCTION OF VEGETATION BE LIMITED TO THESE AREAS.

THE SIGNIFICANCE OF THIS IMPACT IS CONSIDERED TO BE MEDIUM TO LOW, HOWEVER IF MITIGATED CORRECTLY IT WILL BE OF LOW SIGNIFICANCE.

7.1.2 Erosion

<table>
<thead>
<tr>
<th>Impact</th>
<th>Area</th>
<th>Extent</th>
<th>Duration</th>
<th>Intensity</th>
<th>Probability of occurrence</th>
<th>Significance</th>
<th>Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erosion</td>
<td>Development footprint &amp; nearby</td>
<td>Site</td>
<td>Short</td>
<td>High</td>
<td>Probable</td>
<td>Low</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>surrounds</td>
<td>specific</td>
<td>term</td>
<td></td>
<td></td>
<td></td>
<td>High</td>
</tr>
</tbody>
</table>

EROSION MAY TAKE PLACE WHEN VEGETATION IS REMOVED AND THE TOP SOIL IS EXPOSED, WHICH IS THEN MORE SUSCEPTIBLE TO EROSION DURING RAINFALL EVENTS AND FROM STRONG WINDS. SIMILARLY, TRAMPLING OF VEGETATION BY THE CONTINUAL MOVEMENT OF VEHICLES AND PEOPLE MAY ALSO LEAD TO THE REMOVAL OF VEGETATION AND EXPOSURE OF THE TOP SOIL. FORTUNATELY DUE TO THE LOW RAINFALL IN THE AREA, THE CHANCES OF EROSION ARE GREATLY MINIMISED, HOWEVER CARE SHOULD STILL BE TAKEN TO AVOID SUCH EROSION. IT IS RECOMMENDED THAT THE REMOVAL OF VEGETATION BE KEPT TO A MINIMUM, AND ALL CLEARED AREAS ARE RE-VEGETATED WITH LOCAL PLANT GRASS SPECIES AS SOON AS
PRACTICALLY POSSIBLE. THE RE-USE OF EXCAVATED TOP-SOIL WILL ASSIST IN THE REGENERATION OF INDIGENOUS SPECIES, AS THE TOPSOIL IS LIKELY TO CONTAIN VIABLE SEED BANKS AND GEOPHYTES.

THE SIGNIFICANCE OF THIS IMPACT IS CONSIDERED TO BE LOW, HOWEVER IF MITIGATED CORRECTLY IT WILL BE OF ALMOST NEGligible.

### 7.1.3 Dust

<table>
<thead>
<tr>
<th>Impact</th>
<th>Area</th>
<th>Extent</th>
<th>Duration</th>
<th>Intensity</th>
<th>Probability of occurrence</th>
<th>Significance</th>
<th>Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust</td>
<td>Development footprint &amp; nearby surrounds</td>
<td>Local</td>
<td>Short</td>
<td>Low</td>
<td>Probable</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

WOMM – without mitigation measures  
WMM – with mitigation measures

THE MOVEMENT OF CONSTRUCTION VEHICLES AND THE BUILDING ACTIVITIES IS LIKELY TO CREATE DUST. THIS DUST WILL SETTLE ON PLANTS, AND MAY IMPAIR THEIR PHOTOSYNTHESIS ABILITIES. IT IS THEREFORE SUGGESTED THAT IF PRACTICALLY POSSIBLE ROAD AND EXPOSED SURFACES SHOULD BE KEPT MOIST TO MINIMISE DUST POLLUTION.

THE IMPACT IS ANTICIPATED TO BE LOW

### 7.2 OPERATIONAL PHASE

#### 7.2.1 Increased run-off

<table>
<thead>
<tr>
<th>Impact</th>
<th>Area</th>
<th>Extent</th>
<th>Duration</th>
<th>Intensity</th>
<th>Probability of occurrence</th>
<th>Significance</th>
<th>Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased run-off</td>
<td>Area containing hardened surfaces</td>
<td>Site specific</td>
<td>Permanent</td>
<td>High</td>
<td>Definite</td>
<td>Medium</td>
<td>Low</td>
</tr>
</tbody>
</table>

WOMM – without mitigation measures  
WMM – with mitigation measures

THE DEVELOPMENT WILL REDUCE THE AMOUNT OF VEGETATION THAT CURRENTLY ACTS AS A SOAK-AWAY DURING AND AFTER RAINFALL EVENTS. THIS REDUCTION IN VEGETATION AND THE INCREASE IN NON-PERMEABLE SURFACES (E.G. ROADS, CONCRETE SURFACE) WILL RESULT IN INCREASED RUN-OFF VELOCITIES, WHICH WILL INCREASE THE
TRANSPORTATION OF SEDIMENTS. THIS MAY ULTIMATELY RESULT IN EROSION WHICH WILL BE OF MEDIUM SIGNIFICANCE. IT IS THEREFORE RECOMMENDED THAT WHERE POSSIBLE, PERMEABLE SURFACES SHOULD BE USED TO ALLOW FOR THE INFILTRATION OF WATER. FOR EXAMPLE BRICK PAVEMENTS AND ARMOURTEX ARE MORE BENEFICIAL THAN TARRED SURFACES. ALL STORM WATER RUN-OFF SHOULD ALSO BE CHANNELLED IN SUCH A MANNER THAT IT DOES NOT CAUSE EROSION WHEN IT COMES INTO CONTACT WITH THE GROUND OR NATURAL AREAS.
SECTION 8: CONCLUSION

The entire study area was classified as being Disturbed *Schmidtia kalahariensis* Grassland. The overall plant species diversity was low and No Red Data plant species or Protected Plants species were observed on site, nor is any suitable habitat present. Consequently, the area has been classified as being of *low* Ecological Function and *low* Conservation Importance.

Construction is likely to result in the loss of natural vegetation, erosion and dust, however if mitigated correctly these impact will be low. During the operation phase, the increase in hardened surfaces may lead to an increase in surface run-off velocities which may result in erosion. Once again, if mitigated correctly these impacts will be low.
SECTION 9: GLOSSARY

Alien species: Plant taxa in a given area, whose presence there, is due to the intentional or accidental introduction as a result of human activity.

Biodiversity: Biodiversity is the variability among living organisms from all sources including inter alia terrestrial, marine and other aquatic ecosystems and ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

Conservation: The management of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations. The wise use of natural resources to prevent loss of ecosystem function and integrity.

Ecosystem: Organisms together with their abiotic environment, forming an interacting system, inhabiting an identifiable space.

Ecosystem services: Activities that help to maintain an ecosystem but are not directly part of energy flows and nutrient cycles. Examples include pollination, dispersal, population regulation, provision of clean water and the maintenance of liveable climates (carbon sequestration).

Forb: A herbaceous plant other than grasses.

Habitat: Type of environment in which a plant or animal lives.

Indigenous: Any species of plant, shrub or tree that occurs naturally in South Africa.

Invasive species: Naturalised alien plants that have the ability to reproduce, often in large numbers. Aggressive invaders can spread and invade large areas.

Red Data: A list of species, fauna and flora that require environmental protection. Based on the IUCN definitions.

Soil: A mixture of organic and inorganic substances, the composition and structure of the latter is derived from the parent rock material. Soil also contains bacteria, fungi, viruses and microarthropods, nematodes and worms.

Species diversity: A measure of the number and relative abundance of species (see biodiversity).

Species richness: The number of species in an area or habitat.
Appendix C – Public Participation Consultation.
Appendix C1 - Proof of site notice

NOTICE OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS.

Activity : Extension of Paulputs Substation (Installation of a second 220/132 kV, 250MVA transformer) (An application was made for an Environmental Impact Assessment was made to the Department of Environmental affairs and Tourism in order to obtain authorization for the above mentioned project (DEAT reference number 12/12/20/1239))

Locations : The substation upgrade will take place on the farm Schuitkliip 92 Portion 4

Motivation : The proposed upgrade is implemented to create a firm transformer capacity at paulputs substation, which is part of the Namaqualand Customer Load Network (CLN). Presently the substation has only one 220/132KV transformer and as part of this project, a second transformer will be installed.

Proponent : Eskom Holdings Limited
Consultant : Calvin Mawelela / Jojo Mmakwa
ENKANYINI PROJECTS
(012) 440 8830 or 0721749171
P.O Box 4983, The Reeds, 0158
E-mail: calvin@enkanyiniprojects.co.za

Public Open Day : 18 September 2008
Time : 17:00
Venue : Pofadder Community Hall

Date of publication of notice: 3 September 2008

In order to ensure that you are identified as interested and / or affected party, please submit your name, contact information and interest in the matter to Enkanyini Projects(Calvin Mawelela / Jojo Mmakwa on 012 440 8830 or 072 174 9171) within 30 days of publication of this advertisement.
Appendix C2 - Proof of News paper advertisement
Appendix C 3 –Communication to and from person
Attention: Mr G Visser

Dear Sir

PAULPUTS SUBSTATION EXTENSION, REFERENCE NUMBER 12/12/20/1239

Enkanyini Projects has been appointed by Eskom Holdings Limited to conduct an Environmental Impact Assessment (EIA) for the extension of the Paulputs substation (Schuitkliip 92 portion 4) to accommodate the second 220/132KV 250 MVA transformer. As part of the EIA process we are required to consult with the public of which the purpose is the following:

1. To inform the public about the proposed projects.
2. To provide the community in general (interested and affected) an opportunity to comment or raise any concern or recommendation regarding the proposed project.
3. To provide interested and affected parties with an opportunity to forward comments/opinions/suggestion and ways of avoiding/reducing or mitigating negative impacts associated with an activity in order to enhancing positive impacts.

In terms of the National Environmental Management Act we are required to consult with stakeholder, authorities and the community in general within the affected area. As per
telephone conversation regarding the scheduled public open day I would like to confirm that the date is the 18th of September 2008 in the Pofadder Community Hall at 17H00. We will appreciate your presence in the public open day if it is possible.

Please should there be any questions, do not hesitate to contact us on the above numbers.

Sincerely

________________________________
Calvin Mawelela
Attention: Mr L.D Beukes  
Municipal Manager  
Khaima Local Municipality

Dear Sir

PAULPUTS SUBSTATION EXTENSION, REFERENCE NUMBER 12/12/20/1239

Enkanyini Projects has been appointed by Eskom Holding Limited to conduct an Environmental Impact Assessment (EIA) for the extension of the Paulputs substation to accommodate the second 220/132KV 250 MVA transformer. As part of the EIA process we are required to consult with the public of which the purpose is the following:

1. To inform the public about the proposed projects.
2. To provide the community in general (interested and affected) an opportunity to comment or raise any concern or recommendation regarding the proposed project.
3. To provide interested and affected parties with an opportunity to forward comments/opinions/suggestion and ways of avoiding/reducing or mitigating negative impacts associated with an activity in order to enhance positive impacts.

In terms of the National Environmental Management Act we are required to consult with land owners, stakeholder, authorities and the community in general within the proposed
development area. We have intention to conduct the public open day on the 18\textsuperscript{th} of September 2008 in the Pofadder Community Hall at 17H00. We will appreciate your presence in the public open day if it is possible.

Please should there be any questions, do not hesitate to contact us on the above numbers.

Sincerely

________________________________

Calvin Mawelela
Attention: Secretary, Mr Jacob
Pofadder Landbou Vereenige

Dear Sir

PAULPUTS SUBSTATION EXTENSION, REFERENCE NUMBER 12/12/20/1239

Enkanyini Projects has been appointed by Eskom Holdings Limited to conduct an Environmental Impact Assessment (EIA) for the extension of the Paulputs substation (Schuitklip 92 portion 4) to accommodate the second 220/132KV 250 MVA transformer. As part of the EIA process we are required to consult with the public of which the purpose is the following:

1. To inform the public about the proposed projects.
2. To provide the community in general (interested and affected) an opportunity to comment or raise any concern or recommendation regarding the proposed project.
3. To provide interested and affected parties with an opportunity to forward comments/opinions/suggestion and ways of avoiding/reducing or mitigating negative impacts associated with an activity in order to enhance positive impacts.

In terms of the National Environmental Management Act we are required to consult with land owners, stakeholder, authorities and the community in general within the proposed
development area. We have intention to conduct the public open day on the 18th of September 2008 in the Pofadder Community Hall at 17H00. We will appreciate your presence in the public open day if it is possible.

Please should there be any questions, do not hesitate to contact us on the above numbers.

Sincerely

________________________________
Calvin Maweleta
Appendix C4 - Minutes of the public meetings
PAULPUTS SUBSTATION UPGRADE EIA
REFERENCE NUMBER 12/12/20/1349

PUBLIC PARTICIPATION HELD ON THE 18/09/2008 AT 17H00
MINUTES

<table>
<thead>
<tr>
<th>Project</th>
<th>PAULPUTS SUBSTATION UPGRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>18 September 2008</td>
</tr>
<tr>
<td>Time</td>
<td>17h00</td>
</tr>
<tr>
<td>Venue</td>
<td>Pofadder Community Hall</td>
</tr>
</tbody>
</table>

AGENDA

1. OPENING

2. WELCOME

3. ATTENDANCE REGISTER AND APPOLOGIES

4. PRESENTATION

   4.1 ESKOM PRESENTATION
   4.2 ENKANYINI PROJECT PRESENTATION

5. QUESTIONS AND COMMENTS

6. CLOSING REMAKS

7. CLOSURE
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. OPENING</td>
<td>Mr T Bezuidenhoud introduced himself and then afterwards officialy opened the meeting</td>
<td></td>
</tr>
<tr>
<td>2. WELCOME</td>
<td>Mr. T.Bezuidenhoud welcomed everyone</td>
<td></td>
</tr>
<tr>
<td>3. ATTENDANCE REGISTER AND APOLOGIES</td>
<td>The local council forwarded an apology and the Khaima Municipal Manager. The representative from DEAT also forwarded an apology.</td>
<td></td>
</tr>
<tr>
<td>4. PRESENTATION</td>
<td>4.1 ESKOM PRESENTATION</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ms. L Chauke started the presentation by introducing Eskom delegates that were present in the public participation and went on explaining the types of impacts associated with substation establishment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.2 ENKANYINI PROJECTS PRESENTATION</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mr. T Maluka presented the project, explaining the purpose and the interpretation of Paapuits substation. He continued by explaining the EIA process, public participation, how to register as an Interested and Affected Party.</td>
<td></td>
</tr>
<tr>
<td>5. QUESTIONS AND COMMENT</td>
<td>Mr. C Mawelela facilitated this session of the meeting. Mr. T Bezuidenhoud asked a question as to when will the draft scoping report be made available. It was agreed that it will be made available by the second week of September 2008. Mr. T Bezuidenhoud requested that small miners association should be contacted and local associations. Mr. T Bezuidenhoud made a commitment that he will ensure that they are registered and interested and affected</td>
<td></td>
</tr>
<tr>
<td>6. CLOSING REMARKS</td>
<td>Mr. C Mawelela in his closing remarks he encouraged the attendees to continue supporting such events and requested them to</td>
<td></td>
</tr>
</tbody>
</table>
access the draft scoping report.

<table>
<thead>
<tr>
<th>7. CLOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>The meeting was officially closed</td>
</tr>
</tbody>
</table>
AGENDA

1. INTRODUCTION & WELCOME
2. APOLOGIES
3. APPROVAL OF PREVIOUS MINUTES
4. PROGRESS REPORTS FROM THE PROJECT LEADER
5. SCOPE OF WORK
6. WATER AND VISUAL SPECIALIST
7. GEOLOGY SPECIALIST
8. GENERAL
9. NEXT MEETING
## Attendance Register Meeting 2: 24 July 2008 at 09h00

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Contact No</th>
<th>Email Address</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gert Marais</td>
<td>Engineering</td>
<td>012 443 3630</td>
<td><a href="mailto:gert.marais@gmail.com">gert.marais@gmail.com</a></td>
<td>[Signature]</td>
</tr>
<tr>
<td>Humboldt Moshe</td>
<td></td>
<td>011 487 5519</td>
<td><a href="mailto:humboldt.moshe@gmail.com">humboldt.moshe@gmail.com</a></td>
<td>[Signature]</td>
</tr>
<tr>
<td>Helen Shumaari</td>
<td>Eskom</td>
<td>011 577 0530</td>
<td><a href="mailto:helen.shumaari@gmail.com">helen.shumaari@gmail.com</a></td>
<td>[Signature]</td>
</tr>
<tr>
<td>Lucia Guney EL</td>
<td>Eskom</td>
<td>082 876 9751</td>
<td><a href="mailto:lucia.guney@eskom.co.za">lucia.guney@eskom.co.za</a></td>
<td>[Signature]</td>
</tr>
<tr>
<td>Gwede Vimmer</td>
<td>Owner</td>
<td>086 661 7771</td>
<td><a href="mailto:gwede.vimmer@gmail.com">gwede.vimmer@gmail.com</a></td>
<td>[Signature]</td>
</tr>
<tr>
<td>Ephi Mabengas</td>
<td>Eskom</td>
<td>083 566 6332</td>
<td><a href="mailto:ephi.mabengas@gmail.com">ephi.mabengas@gmail.com</a></td>
<td>[Signature]</td>
</tr>
<tr>
<td>Solomon Bala EL</td>
<td>Eskom</td>
<td>082 812 9579</td>
<td><a href="mailto:solomon.bala@eskom.co.za">solomon.bala@eskom.co.za</a></td>
<td>[Signature]</td>
</tr>
<tr>
<td>Colvin Mavula</td>
<td>Enkanyini</td>
<td>072 169 9111</td>
<td><a href="mailto:colvin.mavula@enkanyini.co.za">colvin.mavula@enkanyini.co.za</a></td>
<td>[Signature]</td>
</tr>
</tbody>
</table>
CONTRACT NO: 4500067400 PAULPUTS SUBSTATION UPGRADE

INTRODUCTION MEETING NO.2 HELD ON THE 25/07/2008 AT 12H00

MINUTES

<table>
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<th>Telephone</th>
<th>Email address</th>
<th>Cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calvin Mawelela</td>
<td>Enkanyini Projects</td>
<td>012 440 8830</td>
<td><a href="mailto:calvin@enkanyiniprojects.co.za">calvin@enkanyiniprojects.co.za</a></td>
<td>072 174 9171</td>
</tr>
<tr>
<td>Tsepo Maluka</td>
<td>Enkanyini Projects</td>
<td>012 440 8830</td>
<td><a href="mailto:tsepo@enkanyiniprojects.co.za">tsepo@enkanyiniprojects.co.za</a></td>
<td>079 185 6993</td>
</tr>
<tr>
<td>Humbulani Mudaun</td>
<td>Enkanyini Projects</td>
<td>012 440 8830</td>
<td>-</td>
<td>083 288 4406</td>
</tr>
<tr>
<td>Rantshalin gwa Mulaudzi</td>
<td>Enkanyini Projects</td>
<td>012 440 8830</td>
<td>-</td>
<td>078 181 3922</td>
</tr>
<tr>
<td>Lucia Chauke</td>
<td>Eskom Limited Holdings</td>
<td>011 800 4427</td>
<td><a href="mailto:lucia.chauke@eskom.co.za">lucia.chauke@eskom.co.za</a></td>
<td>082 874 5901</td>
</tr>
<tr>
<td>Steven Mafela</td>
<td>Eskom Limited Holdings</td>
<td>011 800 6644</td>
<td><a href="mailto:mafelast@eskom.co.za">mafelast@eskom.co.za</a></td>
<td>078 300 5556</td>
</tr>
<tr>
<td>Solomon Tsolo</td>
<td>Eskom Limited Holdings</td>
<td>-</td>
<td><a href="mailto:tsoloms@eskom.co.za">tsoloms@eskom.co.za</a></td>
<td>082 806 0512</td>
</tr>
<tr>
<td>Gerald Visser</td>
<td>Landowner</td>
<td>054 933 0475</td>
<td><a href="mailto:tgnvisser@telkomsa.net">tgnvisser@telkomsa.net</a></td>
<td>084 645 8971</td>
</tr>
<tr>
<td>Eppie</td>
<td>Eskom</td>
<td>-</td>
<td><a href="mailto:Edmund.agenbag@eskom.co.za">Edmund.agenbag@eskom.co.za</a></td>
<td>083 544 4632</td>
</tr>
</tbody>
</table>
Distribution to the following:

- Mr. Calvin Mawelela
- Steven Mafela
- Lucia Chauke

AGENDA

8. INTRODUCTION & WELCOME

9. APOLOGIES

10. APPROVAL OF PREVIOUS MINUTES

11. PROGRESS REPORTS FROM THE PROJECT LEADER

12. SCOPE OF WORK

13. WATER AND VISUAL SPECIALIST

14. GEOLOGY SPECIALIST

15. GENERAL

16. NEXT MEETING

<table>
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<tr>
<th>Item</th>
<th>Description</th>
<th>Action</th>
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<tbody>
<tr>
<td>1.</td>
<td>INTRODUCTION AND WELCOME</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mr C Mawelela welcomed attendants to the meeting.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>APOLOGIES</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mr Jojo Mmakwa was on leave.</td>
<td></td>
</tr>
</tbody>
</table>
3. APPROVAL AND CORRECTION OF PREVIOUS MINUTES

Minutes of the previous meeting were approved.

4. PROGRESS REPORTS FROM THE PROJECT LEADER

Mr Mawelela stated that the application has been launched with DEAT. He indicated that specialist studies will commence.

5. SCOPE OF WORK

Mr C Mawelela stated that the scope of work will be discussed as the meeting progresses.

6. WATER AND VISUAL SPECIALIST

Mr R Mulaudzi made a presentation on the importance of storm water management and the visual aspects in the project.

Mr G Visser indicated that there is problems of water blockages in substation area. Noted

Mr H Sticniood added the substation itself is situated in the part of water in the area and during rain season water blockage is evident. Noted

Mr S Tsola suggested that the current structural design should be considered during the investigation in order to solve the water blockage problem. Noted

Mr S Mafela requested that the specialist should proposed a water management design so that it could be included in the overall design of the substation. He indicated that in all the work that is to be perfom in the project he expect not less than 85 % accuracy. Noted

7. GEOLOGY SPECIALIST

Mr H Mudau made a presentation regarding the geological study and importance of the study in this project. He furthely requested that he will require further data for him to able to complete the work.

Mrs L Chauke questioned that what will this study contribute in the project. Urgent

Mr H Mudau explained in details the role of this study which is mainly to determine the impact that the upgrade will have on the soil. He futherly indicated that the study is neccesary in order to assist in the designing of the final structure. He also clarified the issue of time that it might possibly take to produce a report taking into consideration laboratory analysis. Urgent

Mr S Mafela requested that this study be conducted as soon as possible hence the outcome will be important in the final design Noted
and also for budget.

8. GENERAL

Mr G Visser question that what is going to happen next from Eskom’s side regarding the land purchasing.

Mr S Tsolo explained that now they have to prepare all the necessary paper work that is required from Eskom side. Mrs L Chauke indicated to Mr G Visser that decision of whether to or not to purchase the land will be influenced by the outcome of the EIA results (Record of Decision) from the DEAT.

Mr G Visser indicated that if they decide to go ahead with the upgrade he want the fencing around the substation to be made in a manner that will prevent his sheeps from entering the area (sheep proof), and that the water blockage problem should be addressed.

Mr T Maluka stated that the proposed public participation dates is the week of the 18-22 August 2008 and he indicated that no contact have been made with the local municipality then the dates will remain as proposed dates. He furtherly indicated that the challenge in the public participation in this regard is that there is no public in the nearby substation vicinity, however he said its not a milestone alternative measure will be considered.

Mrs L Chauke requested that the information regarding the process of suitable site selection be made available so that it could be motivated to DEAT that the preferred site is the best in all alternatives identified.

Mr S Mafela stated that he will forward all the information that is required regarding the project and requested that the Eskom guys on site (Paulputs) should be kept informed at all times when certain work is to be conducted on site. He further made a request to everyone that he needs to be kept informed about the progress on the activities on site.

Mr C Mawelela in closing the meeting he indicated that Enkanyini project will ensure that work is done in a shortest time as possible.

9. NEXT MEETING

Will be scheduled at the later stage.

Mr C Mawelela
Chairperson
APPENDIX E6: COPY OF THE REGISTER
<table>
<thead>
<tr>
<th><strong>NUMBERS</strong></th>
<th><strong>FULL NAMES</strong></th>
<th><strong>ORGANIZATION</strong></th>
<th><strong>CONTACT NUMBERS</strong></th>
<th><strong>POSTAL ADDRESS</strong></th>
<th><strong>COMMENTS</strong></th>
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<tr>
<td>1</td>
<td>Leonard Bowers</td>
<td>ANC</td>
<td></td>
<td>375 13069</td>
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<td>2</td>
<td>Bradley Voog</td>
<td>ANC</td>
<td></td>
<td>263 13069</td>
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<td>3</td>
<td>Jong Muller</td>
<td>ANC</td>
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<td>4</td>
<td>Gerhard Jobee</td>
<td>ANC</td>
<td></td>
<td>Westcliff Road 43</td>
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<tr>
<td>5</td>
<td>Ross Carr</td>
<td>ANC</td>
<td></td>
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<td></td>
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<tr>
<td>6</td>
<td>Tshoane Mokhuto</td>
<td>Khama Group</td>
<td>062 936 049</td>
<td>PO Box 103, Bloemfontein 8870</td>
<td>027 755 6153</td>
</tr>
<tr>
<td>7</td>
<td>Tsepo Molefe</td>
<td>ANC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Seipone Molefe</td>
<td>ANC</td>
<td>011 800 4778</td>
<td>70 Derry 477</td>
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<td>COMMENTS</td>
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<tr>
<td>9</td>
<td>Daniel Moshina</td>
<td>Eskom</td>
<td>021 524 0123</td>
<td>No objection to the project</td>
<td></td>
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<tr>
<td>10</td>
<td>CPM Ndebele</td>
<td>Eskom</td>
<td>012 604 0123</td>
<td>No objection to the project</td>
<td></td>
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<tr>
<td>11</td>
<td>Steven Muma</td>
<td>Eskom</td>
<td>012 800 0000</td>
<td>No objection to the project</td>
<td></td>
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<tr>
<td>12</td>
<td>Robert Tshuma</td>
<td>Eskom</td>
<td>012 300 0000</td>
<td>No objection to the project</td>
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<tr>
<td>13</td>
<td>Lucia Gwede</td>
<td>Eskom</td>
<td>012 800 0123</td>
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<tr>
<td>14</td>
<td>G. Nkosi</td>
<td></td>
<td>012 300 0123</td>
<td>No objection to the project</td>
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<tr>
<td>15</td>
<td>L. Mambuwa</td>
<td></td>
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<td>No objection to the project</td>
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<td>16</td>
<td>B. Sibeko</td>
<td></td>
<td>012 300 0123</td>
<td>No objection to the project</td>
<td></td>
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<tr>
<td>17</td>
<td>J. Sibiya</td>
<td></td>
<td>012 300 0123</td>
<td>No objection to the project</td>
<td></td>
</tr>
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</table>


Ref number: 12/12/20/1239

Comment letter for the Extension of Eskom Paulputs Substation Project

I, [Name], confirm that the proposed Extension of Paulputs Substation activity was explained and discussed by the representatives of Environmental Consultants (Enkanyini Projects).

Comments/Recommendations regarding Extension of Paulputs Substation

[Handwritten comments]

Signature

Date: 11/01/2017

Telephone 021 937 0061

Mobile 083 642 8222

Address 247 Main Road
Comment letter for the Extension of Eskom Paulputs Substation Project

I, E. Simmonds, confirm that the proposed Extension of Paulputs Substation activity was explained and discussed by the representatives of Environmental Consultants (Enkanyini Projects).

Comments/Recommendations regarding Extension of Paulputs Substation

[Blank line]

Signature

Date: 2008.09.18

Telephone: 071 234 5678

Mobile: 082 512 3456

Address: Main Road, Potsslow

Ref number: 12/12/20/1239
Comment letter for the Extension of Eskom Paulputs Substation Project

1. speedo Choza confirm that the proposed Extension of Paulputs Substation activity was explained and discussed by the representatives of Environmental Consultants (Enkanyini Projects).

Comments/Recommendations regarding Extension of Paulputs Substation

It's a very good presentation
It's clear/what they do it
They must do it as soon as possible

Signature

Date 9/6/2008

Telephone

Mobile 032 077 7860

Address /Nataliskan 10

_________________________________________________________________
Comment letter for the Extension of Eskom Paulpits Substation Project

I, [Name], confirm that the proposed Extension of Paulpits Substation activity was explained and discussed by the representatives of Environmental Consultants (Enkanyini Projects).

Comments/Recommendations regarding Extension of Paulpits Substation

No...Comments...At...This...Stage...

Signature

Date 18/9/08

[Add any additional information]

Contact Information

Phone

Mobile 084882450

Address Langstraat 373

PO Box 289
Comment letter for the Extension of Eskom Paulputs Substation Project

Eugene Muller confirm that the proposed Extension of Paulputs Substation activity was explained and discussed by the representatives of Environmental Consultants (Enkanyini Projects).

Comments/Recommendations regarding Extension of Paulputs Substation


Signature ........................................

Date 18/09/2008

Telephone

Mobile

Address 203 Steet 350

Pofadder 8080
Comment letter for the Extension of Eskom Paulputs Substation Project

[Signature]

Date: 18/09/06

Signature

Ref number: 12/12/20/1239
Appendix E5 - Comments and response report
1 Comments and Response Report

The Scoping Report and the EIA plan of study were sent on site for public comments (30 days which ended on the 7th of December 2008) and there were no comments forwarded regarding the documents on site.
Appendix C7 - Consent letter
LETTER OF CONSENT FOR THE ENVIRONMENTAL IMPACT ASSESSMENT AND
ENVIRONMENTAL MANAGEMENT PLAN FOR
THE PROPOSED EXTENSION OF THE SUBSTATION TO ACCOMMODATE THE SECOND
220/132KV 125MVA TRANSFORMER

With respect to Regulation No. 385 of the National Environmental Management Act (107 of 1998), item number 16(1), if the applicant is not the owner of the land on which the activity is to be undertaken, the applicant must, before applying for an environmental authorisation in respect of that activity, obtain the written consent of the landowner to undertake the proposed activity on that land.

I/We, the undersigned

of Identity Number / Registration Number _

am the registered owner/s of the property (include property description & title deed numbers)

hereby give consent to the applicant Eskom Holdings Limited

of Identity Number/Registration Number 2002/015527/06

 undertake an Environmental Impact Assessment, Geohydrological studies and surveying of the land for
the following activity/activities on the property:

1. Activity 1 (I): The construction of facilities or infrastructure, including associated structures or infrastructure, for the transmission and distribution of above ground electricity with a capacity of 120 kilovolts or more (this will include the study of different alternatives for the location of the proposed substation).

Activity 12: The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered

2. endangered ecosystem listed in terms of section 52 of the National Environmental Management: Biodiversity Act 2004 (Act No. 10 of 2004).
3. Activity 14: The construction of masts of any material of type and of any height, including those used for telecommunications broadcasting and radio transmission, but excluding (a) masts of 15m and lower exclusively used by (i) radio amateurs; or (ii) for lightening purposes (b) flagpoles; and (c) lightening conductor poles.

4. Activity 15: The construction of a road that is wider than 4 metres or that has a reserve wider than 6 metres, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 metres long.

5. Activity 16(a): The transformation of undeveloped, vacant or derelict land to residential, mixed, retail, commercial, industrial or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare.

6. Activity 7: The above ground storage of a dangerous good, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic metres but less than 1,000 cubic metres at any one location or site.

Signed:
Date:

Landowner Contact Information:

Name of Landowner:

Trading Name (if any):

Contact Person:

Physical Address:

Postal Address:

Telephone:
Appendix C8 - EAP expertise
Name: Abel Calvin Mawelela

Qualifications:
STD 10 [Vuxeni High School]
ND Environmental Management [TUT]
B Tech Environmental Management [TUT][Pending]

Present Position: SHERQ & Operations Director

Present Company: Enkanyini Projects

Years of Professional Experience: 9

Years with Firm: September 2006

Date of Birth: 29 October 1974

Nationality: South African

Contact Numbers: (087) 808 6174 or 0721749171 or 0829013041

Email: calvin@enkanyiniprojects.co.za

Physical & Postal Address: Enkanyini Projects, PO BOX 4983, The Reeds, 0158

RELEVANT EXPERIENCE

- Environmental Pollution Control or Quality Management of surface and groundwater.
- Employee health impact surveys and studies.
- Integrated Waste management and waste site rehabilitation.
- Design and implementation of hazardous management systems.
- Audit, implementation and Coordination of ISO 14000 system
- Environmental Management systems, projects and administrations
- Safety and Environmental Assessments of Mining, Social Development and Industries.
- Air, Dust, and Noise surveys and Management.
- Environmental Impact Assessments, compliance monitoring and management.
- Dam or land use zoning studies.
- Water Reserve and Flood-lines Determination/Analysis.
- Prospecting of minerals rights or permit and management (Environment).
- Social Impact Assessments, co-ordination and public participations.
- Social needs studies of community development projects.
- Cultural heritage studies for community development projects.
- Environmental technical Assessments or feasibility studies.
- Municipal integrated development plan (IDP) and water service development plan (WSDP) Assessment studies.
- I am experienced in Capacity Assessment of Municipalities, Water Services Providers, Water Authorities and Transfer processes.
- I was involved in business plan appraisals for South African Water Service Providers.
- I am experienced in research, data collection, liaison with communities and government (DME, DWAF, SALGA, DEAT) structures.
- I am experienced in project management, monitoring, non-compliance management, administrations and financial Management.
- I have managed number of environmental projects, including management of all environmental consultants and projects employed by the Province Department of Roads and Transport in North West.

**AREAS OF EXPERIENCE**

- Rural, Township and Urban development
- Bulk water, Water and Sewage treatment Plant or schemes
- Waste transfer station and Waste site
- Air Quality Monitoring Station
- Graveyards and Recreational facilities
- Roads, Weir and Bridges
- Borrow pits and Wells
- Reservoirs and Water reticulation
- Power stations and Lines
- Municipalities and Private developers
- Streams, Rivers and Dams
- Factories
- Industries
- Open cast and Underground mining

**EXPERIENCE RECORD:**

2005-to date: Enkanyini Projects: SHERQ & Operations Director
2004-2005 : EcoSat Environmental Service Group: SHERQ & Operations Director
2001-2003 : Mzondi Environmental and Social Consultants: SHERQ Manager
1999-2000 : Palaborwa Mining Company: SHERQ Officer
1997-1998 : Palabora Mining Company: SHERQ Trainee during and after studies

References:

1. Annelize Grobler
   Director Landscape Dynamics
   Tel: (012) 460 6043 or 0825664530

2. Viktoria Jansen-Gotchev
   Environmentalist
   Tel: 0823363497

3. Thabo Sethsedi
   Air Quality Director C&M Consulting Engineers
   Tel: (012) 803 5124 or 0829299966

LANGUAGES

10 South African Official Languages: Read, Write, Speaking

I hereby certify the correctness of the information above and my availability to undertake this assignment.

____________________________________  ______________________________________
Signature                        Date