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EAGLES MSA CONSULTING (PTY) LTD

EXPANSION OF THE KOMSBERG MAIN TRANSMISSION SUBSTATION AND ASSOCIATED INFRASTRUCTURE NEAR SUTHERLAND, WITHIN THE KAROO HOOGLAND LOCAL MUNICIPALITY IN THE NORTHERN CAPE

MONTHLY MONITORING REPORT

DATED: FEBRUARY 2020

DEA REF: **14/12/16/3/3/1/1482**

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PROJECT INFORMATION

REPORT TITLE:	Monitoring Report
DATE:	FEBRUARY 2020
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PROJECT TITLE:	Expansion of the Komsberg Main Transmission Substation (MTS) and Associated Infrastructure near Sutherland within the Karoo Hoogland Local Municipality in the Northern Cape Province.
CLIENT:	Eskom SOC Ltd
ENVIRONMENTAL CONSULTANTS:	Eagles Multi Skills Academy
DEA REF. NO.:	**14/12/16/3/3/1/1482**
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REPORT COMPILATION RESPONSIBILITIES

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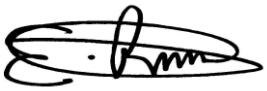

Mulalo Edson Ramurembiwa

Environmental Control Officer

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EXECUTIVE SUMMARY

In line with the requirements of the Environmental Authorisation (EA) and the Environmental Management Programme (EMPr) for expansion of the existing Komsberg Main Transmission Substation (MTS) and Associated Infrastructure near Sutherland within the Karoo Hoogland Local Municipality in the Northern Cape Province. The Environmental Control Officer (ECO) shall ensure implementation of the requirements of the EA and compliance with the requirements of the EMPr. This report summarise observations made by the ECO during construction not limited to construction progress, Incidents, Non-Conformance Reports (NCR's) issued and Deviations.

Currently there is no NCR issued for the reporting month. One (1) insignificant hydrocarbon spill were reported during February reporting period. The cause of spill was due to rupture steering box transmission pipe from the mini bus. The bus was immediately taken off site for repair and the area was immediately cleaned up, contained and temporarily stored at the hazardous waste skips/bins. No pre-warning issued during February reporting period.

Inspections/audit were conducted on the following activities: Bulk earthworks including layer works at Section D of 400kV terrace, spreading of topsoil along V-drain, 132kV and 400kV embankment. Under Civil and Building Works the activities undertaken are: Excavation of oil dam, storm water drainage pipes, building of storm water drainage manhole, excavation of foundations for columns, steel fixing/rebar installation, shuttering, casting of concrete and brick laying on the buildings.

1. INTRODUCTION

This report serves as a report back on the compliance of the Construction on the expansion of the existing Komsberg Main Transmission Substation (MTS) and Associated Infrastructure near Sutherland within the Karoo Hoogland Local Municipality in the Northern Cape Province under Environmental Authorisation (EA) (DEA Ref: 14/12/16/3/3/1/1482) and the Environmental Management Programme (EMPr) (dated January 2016) compiled for the development.

On 12th of May 2016 the Department of Environmental Affairs granted Eskom Holdings SOC Limited (hereafter referred to as “Eskom”) an Environmental Authorisation (EA).

Eagle Multi Skills Academy/Consulting was appointed by Eskom Holdings SOC Limited to achieve the duties of the Independent Environmental Control Officer (ECO) responsible for environmental compliance monitoring against the EA, EMPr and other relevant legislations (National, Provincial and Local) during the construction phase of the project until rehabilitation to fulfil Condition 20 of the Environmental Authorisation.

The ECO is obligated to monitor compliance of activities undertaken by the Contractor/s, to report on any non-conformances, record incidents if any, recommend corrective action required, and details of those non-conformances. This report will be submitted to the authority (Department of Environmental Affairs) and other Authorities if required, the Applicant/holder of the Authorisation as well as the Contractors for their records and to act upon the non-compliance or issue raised as it is required. The report will reflects the observations and findings observed by the ECO during February reporting month.

2. SCOPE OF THE REPORT

The scope of the monthly monitoring report is to measure and record the compliance of the project by Contractors and Sub-contractors against the requirements/objectives of the EMPr, condition 21 of the EA, WUL (General condition 6 (2) of the general Authorisation), permits and licences issued for the expansion of the Komsberg Main Transmission Substation (MTS) and associated infrastructure.

3. ENVIRONEMNTAL INDUCTION, AWARENESS AND TRAINING

All new employees before construction have undergone environmental awareness training detailing:

» What is meant by “Environment”

» Why the environment needs to be protected and conserved

» How construction activities can impact on the environment,

» Awareness of emergency and spills response provisions,

» Social responsibility during expansion activities, e.g. being considerate to local residents,

» The Do’s and Don’ts on site.

Thirteen (13) new employees on site received environmental induction based on Eskom Environmental Management induction, EMPr, EA, legal and other requirements as well as the role of ECO on the project.

Different environmental topics as per environmental calendar are discussed with all employees on site. No topic discussed as part of the monthly theme:

Any other significant topics are chosen based on the risk and the need are discussed through tool box talk to remind and refresh employees about environmental compliance as well as the significance of protecting the environment, sustainability and conserving the environment. The following environmental topics were discussed:

- Emergency Preparedness conducted - 30/01/2020.
- Housekeeping - 04/02/2020.
- Housekeeping and spillages – 05/02/2020.
- Energy saving - 06/02/2020.
- Barricading and fence – 07/02/2020.
- Hazardous chemical - 10/02/2020.
- Ablution facilities and air pollution - 11/02/2020.
- Animal protection - 12/02/2020.
- Spill prevention – 12/02/2020.
- Dust and noise minimization – 14/02/2020.

- Spillage and housekeeping – 16/02/2020.
- Plant protection - 17/02/2020.
- Importance of trees - 19/02/2020.
- Littering - 24/02/2020.

4. INSPECTION FINDINGS

These are findings observed during inspections of the construction site for the reporting month. See attached photographic inspection evidence on Appendix A.

Table 1: Inspection findings.

EMPr Section	Findings	Suggested Corrective Action and Actual Corrective Action.	status
Objective 3	Poor housekeeping and littering of waste around the working area.	Toolbox talk regarding litter must be conducted and regular housekeeping must be conducted by each team.	Open
Objective 16	Leaking steering box transmission pipe from the mini Bus.	All leaking machinery or vehicle must be taken for repairs and all the suppliers or service provider must be made aware that leaking machinery or vehicle is not accepted on site.	Open

5. CONSTRUCTION PROGRESS

This section outlines construction activities recorded during February reporting month as well as planned construction activities.

5.1. Construction Progress to Date

- During the inspection the following activities (Earth works and Civil and Building) are in progress:
    1. Bulk earth work including layer works at Section D of 400kV terrace.
    2. Spreading of topsoil on V-drain water along the permanent access road and 132kV and 400kV embankment.
    3. Excavation of foundations and oil dam.
    4. Excavation and installation of storm water drainage pipes and building of manhole.
    5. Steel fixing/rebar installation and shuttering.
    6. Casting of concrete on transformer plinth, foundations.

7. Brick laying of the building (control room, access control, consumable and flammable).

Photo: Casting concrete on foundation bases.

Photo: Steel fixing at the foundations.

Photo: Excavated foundation.

Photo: Manhole for storm water drainage.

Photo: Brick work at control room building.

Photo: Shuttering at the foundation plinth.

Photo: Preparation of shuttering at the transformer plinth.

Photos: Spreading of topsoil on the 132kV and 400kV embankment.

6. NON-COMPLIANCES, INCIDENTS AND DEVIATIONS

This section provides a description of Non Compliance Report (NCR's) and Incidents noted during the February reporting month, summary of NCR's and Incident as well as the distribution of the non-compliances and observations raised during inspections.

6.1. Description of Incidents, Non-compliances and Deviations

No NCR's issued by ECO for February reporting month. No pre-warning was issued for the reporting month; however the findings on the report form part of the daily inspections for February reporting month. All findings on the report should be properly addressed to avoid reoccurrence as it will lead to Non-Compliance.

6.2. Distribution of Non- compliances, incidents and Deviations

Table 2: Distribution of Environmental NCR's, Incidents and Deviations

Status	NCR's		Incidents		Deviations	
	Month	Project to Date (PTD)	Month	Project To date (PTD)	Months	Project to date (PTD)
Open	0	0	1	0	2	55
Closed	0	0	1	44	0	53
In Progress	0	0	0	0	0	0
Total	0	0	1	44	2	55

Currently there is no NCR issued by ECO, One (1) Incident (minor or insignificant) oil spill was reported for February reporting month. The spill was caused by leaking steering box transmission pipe from the mini bus.

7. PROJECT AUTHORISATION AND PERMITS

#	License name	License Number	Date issued	Expiry Date	Regulatory	Purpose
1.	Environmental Authorisation	14/12/16/3/3/1/1482	12/05/2016	Construction life cycle	DEA	Expansion of the Komsberg Main Transmission Substation (MTS) and Associated Infrastructure near Sutherland within the Karoo Hoogland Local Municipality in the Northern Cape Province.
2.	Fauna	0423/2019	03/06/2019	03/06/2020	NC DENC	Permit for ordinary capture use of prohibited hunting methods.
3	Water use registration and Authorisation	4/5/6/J11D/ Standvastigheid 210/RE, Sutherland RD	17/04/2019	Year (Annum) until reaching the volume	Breede Gouritz catchment Management Agency	Taking of ground water for construction.
4.	Waste Water Treatment Works	B33/2/800/15	04/05/1987	N/A	Department of Water and Sanitation	Treatment of effluent, waste water or sewage.
5.	Flora	0044/2019	28/06/2019	28/06/2020	NC DENC	Flora harvesting
6.	G:S:B landfill permit	6/2/7/J100/D 15/Z1/P286	04/12/1997	N/A	Department of environmental Affairs	General waste disposal facility.
7.	H:H landfill permit	12/2/7G203/ Y214/P176	30/07/1997	N/A	Department of environmental Affairs	H:H waste management facility
8.	H:H (Waste water Treatment Works)	12/9/11/L905 /9	18/09/2012	N/A	Department of environmental Affairs	Treatment of effluent, waste water or sewage.

8. OBSERVATIONS

This section highlights observations noted during the reporting period.

8.1. Construction Camp Site

The following were observed as issues of concern during the reporting:

1. Poor housekeeping and littering of plastic bottles within the working area.

8.2. Flora

Endangered/protected/threatened species that were on the development foot print were identified, marked and search and rescue during site walk down. Most of those species are Protected according to Schedule 2 of the Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009). Permits will be required from NC DENC (Northern Cape Department of Environment and Nature Conservation) to remove or translocate protected plant species.

The permit for harvesting of protected plant species is in place (permit number: Flora 0044/2019). Different types of endangered/protected plant species were sampled and transplanted to the adjacent area within the property boundary (outside the development foot print). Report back as part of the condition 9 (additional permit condition) of the flora permit (Permit number: 0044/2019) was compiled on 04/07/2019 and was sent to submitted to NC DENC on (27 August 2019).

It is recommended that all other relevant conditions of the permit issued on 28/06/2019 (Permit number: 0044/2019) in terms of Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009) must be adhered to. This permit is valid for the period of one year/twelve month (until 28/06/2020).

Awareness is recommended and all areas of development must be clearly marked on-site to eliminate unnecessary clearing or trampling of flora and also to minimise impacts on flora and ecological processes.

8.3. Livestock, game and other fauna

No incident of fauna reported or noticed during February reporting month. Employees, visitors and/or subcontractors should be made well aware of the consequences of any damage to private property and/or loss of livestock, game and/or killing of other fauna.

Any fauna identified or directly threated by construction activities and might be of danger or threat to employees must be reported and removed to the safe environment by suitably qualified personnel. As per the EMPr protected plant species in any area to be cleared should be identified and rescued. The extent of the development footprint area is very limited and furthermore restricted to an area already transformed by the existing infrastructure.

The conditions of the permit issued on 03/06/2019 (Permit number: Fauna 0423/2019) in terms of Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009) must be adhered to. This permit is valid for the period of one year/twelve month (until 03/06/2020).

The ECO recommend a regular awareness on conservation of fauna to all employees on site and the role each play on the environment.

8.4. Fencing

It was noted during the inspection that there is a security controlling access at the main entrance, fence, site offices and laydown area. New boundary fence has been constructed and completed. It is very important that construction of fence comply with the Fencing Act No.31 of 1963.

The Contractor must keep in mind of the damaged fence by excavator delivery truck that it must be properly fixed by replacing the damaged wire and posts before the completion or end of project (Earthwork contract) as it was agreed with the landowner.

8.5. Material Handling, Use and Storage

No issues of material handling, use and storage were observed during the inspections.

8.6. Hazardous Substances Storage

During the inspection it was observed that temporary storage of Hazardous Chemical Substances meet the minimum requirements for Hazardous Substances Act (Act No. 15 of 1973) and SANS 10228, have strict access control, bund capacity, inventory list, Material

Safety Data Sheet (MSDS) as well as a dedicated person to control ingoing and outgoing chemicals at the store.

8.7. Workshop Equipment Maintenance and Storage

Servicing area for maintenance of heavy and small plant for Gebane Engineering Services was designed to contain all contaminant within the bunded and allowing water to drain into the conservancy tank. Workshop or servicing area must be designed in a manner that all pollutants will be contained and drained into the conservancy tank in order for contaminants not to reach the surrounding environment.

8.8. Waste Management

Waste on site is monitored and audited on site as per the requirements of National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) as amended in the government gazette notice 614 of 2016.

A provision has been made for temporary storage of waste in order to manage all types of waste on site. Integrated waste management approach must be implemented on site. An effort must be made for waste minimisation, reduction and recycling.

Wastes generated on site are mostly general and construction waste (building rubble), hazardous waste (i.e. fuel, chemicals) and liquid waste (including grey water and sewage). In order to manage the wastes effectively, guidelines for the assessment, classification, and management of wastes, along with construction principles for minimising construction wastes must be implemented.

General Waste

General waste is taken to a licensed Landfill site at Laingsburg which is registered under Laingsburg Municipality (permit number 6/2/7/J100/D15/Z1/P286) issued under Environment Conservation Act, 1989 (Act 73 of 1989). A copy of the license is available on site file. 51 refuse general waste bags were disposed for February reporting month.

Reuse, reuse and recycling of waste

Integrated waste management approach is encouraged on site. An effort must be made on site to minimise, reuse and recycling waste. 10 m^3 of concrete rubble was donated for re-use to Mr Franchois Conradie (Owner of Farm Standvastigheid 210/RE) for erosion control in the agricultural land, the agreement letter between both parties is in place.

Hazardous Waste

Hazardous waste generated on site are temporarily stored inside the hazardous waste skip and 210 litres bins at the waste management area in the lay down area. Hazardous waste will be managed by Drizit environmental services and to be disposed at a registered landfill in Cape Town (Vissershok) permit number: 16/2/7/G203/Y214/P176 as it is the closest registered hazardous landfill site. No Hazardous waste disposed for February reporting period.

8.9. Toilets / Ablutions

Boland Toilet Services and Sanitech toilet hire are the appointed service providers for servicing ablution facilities (portable chemical toilets) and septic tank for Rigamani construction and Gebane Engineering Services. Sewage wastes are taken to Witzenburg Waste Water Treatment Works in Ceres permit number: B33/2/800/15 amended to 12/9/11/L914/9/V1, registered under Ceres Municipality and Gwaiing Wastewater Treatment Works permit number: 12/9/11/L905/9, registered under George Municipality. Services of the mobile chemical toilets are done once a week at site camp while the servicing of septic tank is done as and when required. The number of employees on site and the number of toilet available for both males and females meet the requirement of the EMPr of 1:15 ratio.

Sewage Waste

Mobile chemical toilets and conservacy tank on site are serviced by Boland Toilet Services. The sewage waste is taken to a licensed Waste Water Treatment Plant (Witzenberg) in Ceres registered under Witzenberg Municipality; permit number B33/2/800/15 amended to 12/9/11/L914/9/V1, registered under Ceres Municipality and Gwaiing Wastewater Treatment Works permit number: 12/9/11/L905/9, registered under George Municipality. A copy of licence is available on site file. **10180** litres of sewage waste was disposed for February reporting month.

8.10. Water Management

Water used for construction is sourced from a borehole at Standvastigheid 210/RE with GPS coordinate (S32°56'01.9" E20°35'38.8") used by Rigamani Construction and borehole (S32°56'20.8" E20°37'49.4") used by Gebane Engineering services. Water use registration and Authorisation in terms of the National Water Act, 1998 (Act No 36. Of 1998): for taking of water from ground water is in place, though the purpose for use is defined as taking of underground water for the construction of wind farm which is the different activity to that of

the expansion of the existing Komsberg Main Transmission Substation for IPP's (Independent power producer). The query was logged with the Breede Gouritz Catchment Management Agency (BGCMA) Official and he indicated that the borehole was registered for any construction use despite the project/development name. The first borehole in use has been registered while the second borehole (S32°56'20.8" E20°37'49.4") registration certificate is not available on site.

The limit for maximum volume per annum/capacity is 40 000 m³. General condition 6 (2) of the General Authorisation indicate that (the volume of water taken must be measured and recorded at the end of each month and the volume taken should be submitted to Breede Gouritz Catchment Management Agency (BGCMA) at the email address provided on the water use authorisation). This condition must be complied with by the user. There is a proof that the volume are sent to the Breede Gouritz Catchment Management Agency (BGCMA) on a monthly basis.

It is recommended that a water meter must be installed in order to measure the accurate quantity used in order to comply with the WUL.

Water at the substation has been tested by Integral Laboratories that is SANAS approved and it was found that the sample analysed taken from the borehole at the Komsberg Substation have total coliforms of 16 that is greater than (<10) which is required by SANAS 241: 2015. The lab confirms that water at Komsberg Substation is not suitable for human consumption. Water at the substation cannot be used for consumption or drinking purpose.

1 029 500 litres of construction water was used for the February reporting month by both contractor (Rigamani construction and Gebane Engineering Services) as all the borehole fall within the same limit and authorization. To date a total of **28 585 m³** of water were used. Water used for drinking are purchased from the different supplier (OK foods in Laingsburg and Boelhouer plaas in Matjiesfontein as well as Sutherland tap water) and a total of **5115 litres** of drinking water was used for February reporting month.

8.11. Erosion and Sediment Control

No issues noted or signs of sedimentation observed during the inspections. However all areas susceptible to erosion shall be protected by installing necessary temporary and/or permanent drainage works as soon as possible and by taking suitable measures to prevent surface water concentration into nearby roadways. There might be high possibility of erosion to all area exposed during construction especially if more rain received within the area.

8.12. Access Roads, Access Control and Gate Installation

There were no issues recorded regarding access roads, access control and gates, however regular maintenance of road must be done. Dust suppressant must be applied and regularly monitored on all exposed areas, stockpiles and gravel roads as required minimise/control airborne dust. All boundary gates must be kept closed at all times due to livestock around the neighbouring properties. Employees, visitors and/or subcontractors should be made well aware of the consequences of any damage to private property and/or loss of livestock, game and/or other fauna during induction.

8.13. Dust and other air emission

During inspection it was observed that more dust is generated during crushing of stones at the crushing areas, on the haul or access road as well as the heavy plant parking area. During construction there must be a measure for control of dust in specified places or areas, either in general or by specified machinery or in specified instances as well as steps that must be taken to prevent nuisance by dust or other measures aimed at the control of dust as per the National Environmental Management: Air Quality Act (Act No. 39 of 2004).

It was evidenced during inspection that dust suppression is not implemented regularly or when required. It is also recommended that dust-generating activities or earthworks as well as crushing areas need to be rescheduled or the frequency of application of dust control/suppressant increased especially during periods of high winds and if excessive visible dust is blowing towards where other employees are working or to the nearby residences outside the site in order to achieve the objective of the EMPr.

8.14. Import Materials

Any fill material required on site must be sourced from a licensed commercial site suitable/permitted source, quarry or borrow pit. Where possible, material from foundation excavations must be used as fill on-site. G6 (import materials) used as final layer or wearing course are source from approved quarry registered under Swartbult Trust IT 4336/96, Zandrivier: permit number 02/2015 and Elandvlei sand mine: permit ML19/96 and when there is a need other import materials will be also sourced from approved quarry at Brewelskloof (ERF 3604, Worcester, Western Cape) registered by Afrimat Aggregates PTY (Ltd) previously known as Prima Klipbrekers PTY (Ltd) under Mineral and Petroleum Development Act, No 28 of 2002. 2040 m^3 of G6 (import materials) used for wearing course was sourced from Prince Albert quarry registered under Swartbult Trust IT 4336/96 and stockpiled at Zandrivier in Laingsburg for February reporting month.

8.15. Labour and Social Issues and their Control

Since earth work project is towards completion, a local employment was created to 16 unskilled workers from Matjiesfontein (which fall under ward 2 of Laingsburg Municipality under Central Karoo District Municipality) which is approximately 30km from the construction/development site. Although limited, employment opportunities could be created during the construction phase, specifically for semi-skilled and unskilled workers. Use should be made of local labour as far as possible.

8.16. Accidental leaks and Spillages

The contractor shall be strongly advised to make every effort to prevent spills and leakages on site. Regular maintenance and inspections of construction vehicle is essential to prevent unnecessary oil spills. One (1) insignificant hydrocarbon spill were reported during February reporting period. The cause of the spill was due to rupture steering box transmission pipe from the mini Bus. It is recommended that all spills must be assessed to determine the significance of the spill, reported to ECO and cleaned immediately.

Incident or spillage date

No.	Date	Description of the incident	Quantity	Location	Reported by	Reported to	Action Taken	Close-out Date	Was a flash report completed ?
1	17/02//2020	Steering box transmission pipe rupture from mini bus.	350 ml	Security gate	SHE Officer	Senior advisor and ECO	The spill was cleaned and contaminated soil disposed at the hazardous waste bin.	17/02/2020	No

8.17. Drainage Lines and Periodic Streams

During the inspection no issues observed regarding impact of construction activities on the drainage line or streams. However a careful planning must be done during planning of temporary access roads for construction purposes not to impede or divert the flow of water as it will trigger General Authorisation in terms of Section 39 of the National Water Act (Act No. 36 of 1998).

8.18. Soil Degradation and Erosion

No issue observed regarding soil degradation and erosion noted during the reporting month. However, excavated topsoil stockpiled must be covered (during windy conditions) or vegetated until replaced during rehabilitation. The area identified as disturbed area must be restricted for construction activities.

Erosion control measures such as (reducing run-off on slopes, sand bags, logs, silt fences, storm water catch-pits, shade nets, or temporary mulching over stripped area as required) must be implemented to prevent erosion. No issue observed on soil degradation during February reporting month.

8.19. Heritage Resource

No archaeological sites/materials were observed during the reporting period within the development footprint. Although it is unlikely that archaeological remains will be found in situ especially during excavation, there is always a possibility that human remains and/or other archaeological and historical material may be uncovered during the development.

Employees must be made aware of the possibility of discovering heritage sites, if concentrations of historical and pre-colonial archaeological heritage material and/or human remains (including graves and burials) are potentially uncovered during construction, all work in the immediate area must be ceased immediately and be reported to the ECO so that it will be reported to South African Heritage Resource Agency (SAHRA).

8.20. Visual Impacts

No Visual impacts observed during the reporting month. Movement of construction workers and vehicles to the immediate construction site and existing access roads/ tracks must be restricted. It is advisable that construction activities must be restricted to daylight hours whenever possible in order to reduce lighting impacts (Ref: EMPr objective 14).

8.21. Noise Control

No excessive noise generated during working hours (daylight) were reported during this period. However, on-site construction activities should be limited to daylight hours as far as possible (Ref: EMPr objective 15) and construction noise to be managed in accordance with the Noise Control Regulations and SANS 10103.

It is recommended that all construction equipment, including vehicles, must be properly and appropriately maintained in order to minimize noise generation, e.g. silencers must be in good working in order to achieve the EMPr objectives 15.

8.22. Traffic Management

The construction phase of the project is most significant in terms of generating traffic impacts; resulting from the transport of equipments, materials and construction crews to the site and the return of the vehicles after delivery of materials.

The construction site is created with a single track road entering the substation to ensure safe entry and exit and to minimize the footprint as well as the least environmental impacts.

Speed limit signs of 20km/h and other warning signs has been installed to ensure that vehicles travelling on site minimize dust generation and ensure safety of personnel, environment and lessen environmental degradation.

8.23. Public/Land Owner's Complaint

No public, landowner or stakeholder's complaint received or recorded for February reporting month.

8.24. Rehabilitation

All area that are badly damaged needs to be rehabilitated as soon as possible or as required, the rest of the area will be rehabilitation during the completion earth work contract and the rest of the area will be rehabilitated at the end of the construction phase before commissioning. Alien species that might have been introduced during construction phase must be monitored, controlled, removed and destroyed depending on its categories.

Unnecessary removal of vegetation must be avoided as it adds stability to soil. All the disturbed area must be identified to restrict construction in such area and must be demarcated as a “no go” area for quick recovery.

Rehabilitation will be required in all disturbed area not limited to; area along new permanent access road, this are areas disturbed by heavy plant such as grader turning point during construction of such road and excavators when preparing the V-drain along the permanent road. Other areas that need rehabilitation is the heavy plant parking area, old farm tracks deviated from the permanent access road, laydown area and office area for the Earthwork Contractor after disestablishment of the site and removal of all temporary structure that are not required.

The method of rehabilitation shall include ripping, frequent watering, seeding with recommended local or regional seed mix on flat area. Hyroseeding will be required on a sloppy area such as embankments, V-drain that is to help retain or hold the seeds and also help in quick seed germination.

9. Conclusion

Ensure that the site activities remain within the development footprint and do not impact negatively on the biophysical environment. All deviations noted during inspections must be properly addressed, managed and implemented throughout the project duration to prevent reoccurrence of the same findings.

All recommendations must be taken into considerations as it may have negative impact on the environment. The contractor must ensure that all condition/s of permits or any form of authorisation issued for the project are complied with.

All area disturbed or damaged during construction must be rehabilitated to the similar condition where it was. This can be achieved by using the right seed mix of the region, regular watering of rehabilitated area and a good timing (when, where, and how).

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ANNEXURE: INSPECTION FINDINGS EVIDENCE PHOTOS

Photo: Broken glass (hazardous waste) from TLB.