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EKO•ENVIRONMENTAL

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT:

ELECTRIFICATION OF TRANSNET INFRASTRUCTURE: NEW WITLOOP AND VLERMUISLAAGTE SUBSTATIONS AND ASSOCIATED LOOP-IN AND LOOP-OUT 132KV POWER LINES, HOTAZEL, NORTHERN CAPE

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1 Objectives of the Environmental Management Plan (EMPr)

The Environmental Management Plan is intended to provide environmental specifications for the electrification of Transnet infrastructure to put measures in place to mitigate and manage potential environmental impacts arising from the phases of the proposed project.

2 Responsibility of contractors during planning and construction phase

- Protect the environment on the sites planned for construction.
- Ensure controlled access to the site to prevent degradation.
- Be held responsible for the implementation of the EMPr.
- Be held responsible to have the EMPr available on site at all times.
- Be held responsible for compliance with all relevant aspects of the EMPr.
- Ensure that all problems identified during environmental audits or inspections during construction, are addressed and rectified as soon as reasonably possible.
- After ceasing of construction activities, an environmental audit should be done before commencing with the operational phase, to determine compliance with the EMPr.

3 Responsibility during operational phase

- Providing a budget for maintenance of infrastructure.
- Maintaining all approved infrastructure in good working order to effectively fulfil its intended purpose to prevent negative environmental impacts.
- Not construct any additional buildings, infrastructure, etc. contrary to the approved Environmental Authorisation, without performing an Environmental Impact Assessment (if required) to evaluate alternatives and identify potential impacts.
- To immediately remedy any factors that contribute to negative environmental impacts.

4 Layout plan

- A copy of the layout plan must be available at the site for scrutiny during construction when required.

5 Demarcating the development area

- The area must be clearly demarcated by means of beacons at its corners, and along its boundaries if there is no visibility between the corner beacons.

6 Protection of Topsoil

- Topsoil must be removed from all areas where physical disturbance of the surface will occur.
- Topsoil must be kept separate and shall not be used for building or maintenance of access roads.

7 Protection of Cultural or Historical Elements

- The South African Heritage Resources Agency must be notified if any elements of cultural or historical importance are found during the construction phase.

8 Protection of Plant and Animal Live

- No open fires are allowed on site.
- No hunting of wild animals on site or surrounding area.
- The collection of fire wood is not allowed on site or surrounding area.
- The establishment of access roads should be as indicated in paragraph 9.

9 Establishing access roads on the site

- The existing access roads shall be used as far as practicable.
- Should a portion of the access road be newly constructed the following must be adhered to:
    - The route shall be selected that a minimum number of bushes or trees are felled and existing fence lines shall be followed as far as possible.
    - Steep gradients shall be avoided as far as is practicable.
    - Adequate drainage and erosion protection in the form of cut-off berms or trenches shall be provided where necessary.
- No other routes will be used by vehicles or personnel for the purpose of gaining access to the site.

10 Dust control on the access and haul roads

- Access roads will be maintained.
- The liberation of dust into the surrounding environment shall be effectively controlled if it becomes problematic by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of trucks and other vehicles on the access road must be limited to 35 km/hour to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used.

11 Toilet facilities, waste water and refuse disposal

- Temporary chemical toilet facilities must be made available on site during construction.
- Sewage from these toilets should be managed appropriately and not be disposed of on site or the surrounding environment to cause water or other pollution.
- Ablution facilities should be constructed and be used during the operational phase of the project.

12 Handling of waste

- Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap, etc., shall be disposed and stored in suitable containers at a collecting point and collected on a regular basis and disposed off at an authorized waste disposal facility in the region. Specific precautions shall be taken to prevent refuse from being dumped on or in the vicinity of the site.
- Spills of any product like paint, oil, cleaning agents etc. should be cleaned up immediately by removing the spillage together with the polluted soil and by disposing it at a recognised facility.
- Suitable covered receptacles shall be available at all times and conveniently placed for the disposal of waste for general and hazardous waste.
- All used oils, grease or hydraulic fluids, paints, thinners etc. that can not be re-used shall be placed in a hazardous waste container for disposal at a suitable waste disposal facility.
- Best practices in terms of the management of any waste together with the recommended mitigation measures as described in the Basic Assessment Report should be implemented as minimum.

13 Rehabilitation

Rehabilitation of access roads

- Any gate or fence erected which is not required after the construction phase must be restored to the pre-construction condition.

- Roads shall be ripped or ploughed, and if necessary, appropriately fertilised (based on a soil analysis) to ensure the re-growth of vegetation.
- If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the soil must be analysed and any deleterious effects on the soil arising from the development must be corrected and the area be seeded with a representative seed mix.

Final Rehabilitation of site

It is not anticipated that the proposed project will undergo decommissioning and / or closure. However, should it be decided to rehabilitate the site in future, the site will be rehabilitated to its original state as far as practicable possible, depending on the end land use to be decided upon at that time. The final rehabilitation of the site will, amongst other, include the following activities:

- All infrastructures, equipment and other items used during the operational period will be removed from the site.
- Scrap metal will be sold to be recycled.
- Waste material of any description, will be removed entirely from the site and disposed of at a recognised landfill facility in the area (i.e. Hotazel).
- Waste will not be permitted to be buried or burned on the site.
- Any concrete surface will be removed and compacted areas will be ripped.
- The site will be profiled with acceptable contours and erosion control measures.
- Topsoil will be returned to its original depth over the area.
- Depending of the end-land use, to be decided upon by the land owner at the time, the area will be revegetated with natural occurring vegetation.

14 Inspections and monitoring

- Regular monitoring of all the environmental management measures and components shall be undertaken during the construction phase to verify compliance to the EMPr.
- Ongoing and regular reporting of the progress of implementation of this EMPr will be done.
- Inspections and monitoring shall be carried out on both the implementation of the EMPr and the impact on plant and animal life.
- Visual inspections on erosion and physical pollution shall be carried out on a regular basis.

15 Compliance reporting / submission of information

- An internal environmental officer will be appointed in terms of the specific site. The officer will be responsible to monitor all the environmental management measures and ensure compliance with the EMPr during the Construction Phase.
- It is recommended that a compliance assessment will be undertaken by an independent Environmental Control Officer once during the Construction Phase and once during the Operational Phase to verify compliance with the EMPr and the Record of Decision (should the project be considered for approval).
- Any changes of the lay-out plan or technology will be submitted to the Department of Environmental Affairs for approval.
- Reports confirming compliance with various points identified in the EMPr will be kept and made available when requested.
- Any emergency or unforeseen impact will be reported within 12 hours after identification to the Free State Department of Environmental Affairs telephonically and confirmed in writing.

Table 1: Mitigation measures and monitoring, responsible person(s) and time frames

Activity	Potential Impact	Mitigation	Responsible Person	Performance Indicators	Time Frame
Construction Phase					
Health and Safety: Potential dangerous working conditions, e.g. construction- vehicles and activities, etc.	Potential safety risk to employees	• Equip all employees and/or contractors working on the site with the necessary personal protective equipment, • Implement safety induction, • Training on relevant machinery.	Contractor	No injury incidents to employees or contractors on site.	With appointment
Clearance of site (Vegetation and topsoil)	• Erosion, • Soil loss, • Loss of vegetation, • Establishment of alien vegetation	• Levelling of the site, • Limit construction activities and movement of construction vehicles to the site under construction, • Stockpile soil in an area not prone to erosion for re-use during rehabilitation or for levelling purposes after construction, • Permits will be obtained for the removal of protected plant species on site, • No open fires are allowed on site, • Topsoil will not be used for	Contractor	• No erosion, • Minimum soil loss, • Minimum vegetation loss	During construction phase

Activity	Potential Impact	Mitigation	Responsible Person	Performance Indicators	Time Frame
		construction purposes.			
Management of non-biodegradable waste and building rubble (if any)	• Pollution of soil and water	• All spills must be cleaned immediately and disposed of appropriately, • Building material and general waste must be disposed of at the authorised landfill site in Hotazel and may not be dumped in the veld or on site, • Building rubble can also be used as filling material.	Contractor	• No pollution and/or littering,	During construction
Storm water management	• Potential pollution of storm water, • Erosion.	• Channels, Diversion Berms, and Culverts will be constructed to prevent any pollution or erosion and to divert any storm water around construction sites.	Contractor	• No pollution of storm water • No erosion	During construction
Noise generation	• Elevated noise levels during construction	• Construction limited to normal working hours, • Vehicles and equipment serviced and fitted with silencers.	Contractor	• No complaints regarding elevated noise levels.	During construction
Emissions to the atmosphere	• Visual impact, • Air pollution.	• The formation of dust should be controlled if it becomes problematic by the use of, inter alia, water spraying and / or other dust-allaying agents.	Contractor	• No complaints regarding dust levels, • No pollution of the atmosphere.	During construction

Activity	Potential Impact	Mitigation	Responsible Person	Performance Indicators	Time Frame
		• The speed of trucks and other construction vehicles on the access road must be limited to 35 km/hour to minimize the formation of dust. • Vehicles should be in a good working condition.			
Protection of heritage resources	• Damage and/or destruction of heritage / palaeontological artefacts	• If any signs of culturally or historically significant elements (including archaeological or paleontological elements) are discovered during the construction of the infrastructure all activities on and close to the discovery should discontinue. • An archaeologist paleontologist should be notified. • SAHRA should be notified. • The activities may continue if the contractor received written consent from SAHRA and / or the specialists (paleontologist / archaeologist).	Contractor	• No damage to significant archaeological or palaeontological artefacts.	During construction
EMPr compliance monitoring: Construction Phase	N/A	• Environmental compliance assessment to verify compliance with the EMPr during construction.	Internal environmental officer	• Full compliance with the EMPr and RoD, • Minimum environmental impacts	Once during construction

Activity	Potential Impact	Mitigation	Responsible Person	Performance Indicators	Time Frame
Operational Phase					
Maintenance and repair of storm water systems	Erosion	• Maintenance, inspection and repair if necessary	Manager / Supervisor	• No erosion • Minimum soil loss	During operational phase
EMPr compliance monitoring: Operational Phase	N/A	• Environmental compliance assessment to verify compliance with the EMPr during operation.	Independent environmental officer	• Full compliance with the EMPr and RoD,	Once during operation
Management of waste	• Pollution	• Waste will be separated into different waste streams and bins must be provided for the disposal of all the different streams. • General waste (if any) must be collected on site and will be disposed of at an authorised landfill site in Hotazel. • If any steel structures are demolished and removed from site, it must be recycled.. • Any hazardous waste will be disposed of at a registered facility.	Manager / Supervisor	• No pollution	When work is done on the line or substation.