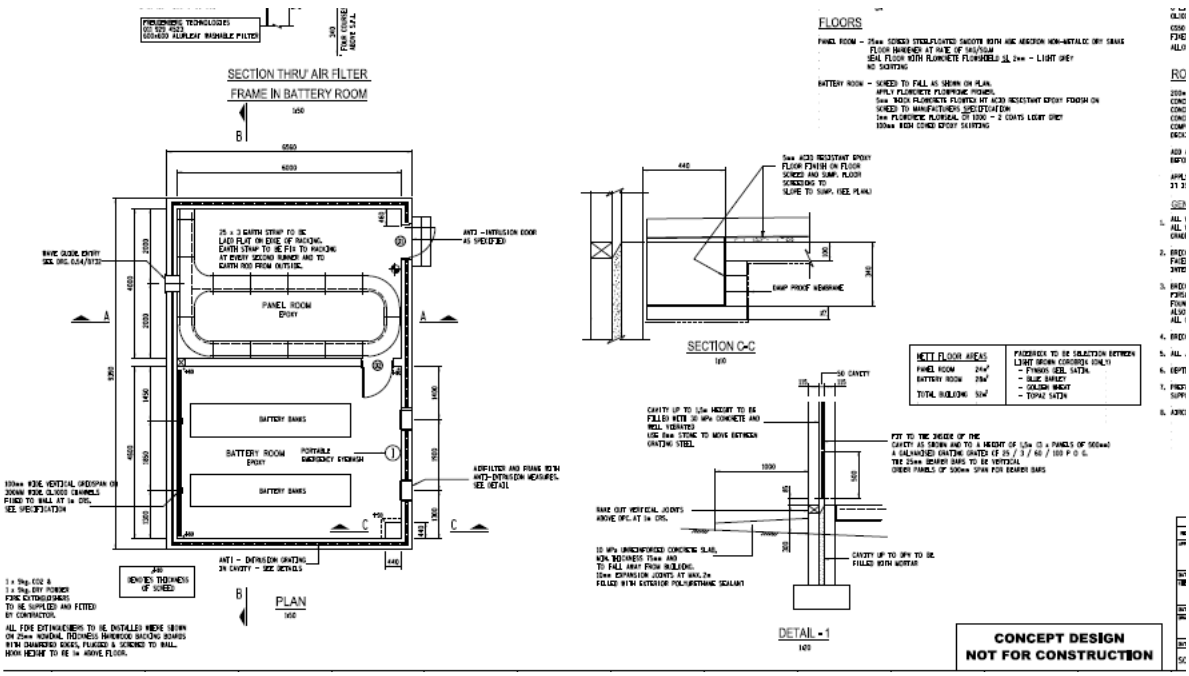
INTERNAL ENVIRONMENTAL MANAGEMENT PROGRAMME

UPGRADE OF KOSTER RADIO SITE FACILITIES, NORTH WEST PROVINCE



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1 INTRODUCTION

1.1 SCOPE OF THIS EMPR

This Environmental Management Programme (EMPr) has been compiled to address the potential environmental impact that might occur during the upgrade of the Koster RS facilities in North West Province. This document serves as the environmental specification to Eskom personnel and contractors with regards to addressing the environmental issues identified prior to and during the construction phase. It is the responsibility of the Project Manager (PM), Contractors and the Environmental Practitioner to ensure compliance with all the environmental specifications in this document as well as the relevant legislation.

This EMPr should also ensure the sustainable management of the environment whilst the upgrade of the radio site is being undertaken. This EMPr must be viewed as a contract document to which all Eskom employees and contractors involved should adhere to.

NB: This EMPr document will only cater for the scope of work contained in it. Any activities outside the given scope of work will need to be addressed through the correct process (i.e. method statements).

This is an internal construction EMPr to cater for the upgrade of the Koster RS facilities.

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1.2 ROLES AND RESPONSIBILITIES

Function	Roles and responsibilities
Contractor Environmental Officer (CEO) / Safety, Health and Environmental Officer (SHE)	The CEO / SHE ensures that all Sub-contractors working under the Principal Contractor abide by the requirements of the EMPr. The CEO / SHE's primary role is to coordinate the environmental management activities of the Contractor on site. • Be on site throughout the duration of the project and be dedicated to the project; • Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; • Implementing the environmental conditions, guidelines and requirements as stipulated within the EMPr and method statements; • Attend the site meetings; • Undertaking corrective actions where non-compliances are registered within the stipulated timeframes;

	• Report back formally on the completion of corrective actions; • Environmental monitoring as required by applicable legislation; • Assist the SEA in maintaining all the site documentation; • Prepare the site inspection reports and corrective action reports for submission to the SEA; and • Assist the SEA with the preparing of the monthly report.
Eskom Senior Environmental Advisor (SEA)	• To ensure that a practical environmental management programme (EMPr) for the construction phase of a project is compiled and approved. • To ensure that all conditions as stipulated in the EMPr are met; and • To conduct audits, monitor and / or provide assurance before, during and post construction.
Project Manager/Site Manager	• Represents and act on behalf of Eskom Transmission regarding the administration of contracts; • In consultation with the Planning Engineer, determines the scope of work; • Provide scheduling, aspects of co-ordination and estimating; • Ensure implementation of the project plan within cost, time and quality constraints; • Ensure that implementation of EMPr is executed as planned; • Keep the asset owner informed of progress made during the life cycle of the project; and • Ensure that conditions in this EMPr are fulfilled before the contractor occupies the site.
Contractor	• To provide all necessary supervision during the execution of the project. He/ She should be available on site all the time; • To appoint a competent Environmental / Safety Health and Environment Officer; • To implement the projects as per the approved project plan; • To ensure that implementation is conducted in an environmentally acceptable manner; • To fulfil all obligations as per the agreed contract; and • To inform and educate all employees about the environmental risks associated with the different activities that should be avoided during the construction process and lessen significant impacts to the environment.

1.3 LEGISLATIVE CONTEXT

The following environmental acts were considered in the compilation of this EMPr:

- National Environmental Management Act, 1998 (NEMA) (Act No 107 of 1998), and all amendments and supplementary listings and/or regulations;
- National Environmental Management: Waste Act, 2008 (NEMWA, Act 59 of 2008);
- National Environmental Management Act: Biodiversity, 2004 (NEM:BA) (Act No. 10 of 2004) and amendments;
- The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) and its Regulations;
- The National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004);
- National Forest Act, 1998 (NFA) (No 84 of 1998);
- National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998);
- National Heritage Resources Act, 1999 (Act 25 of 1999);
- National Water Act, 1998 (Act 36 of 1998);
- The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);
- The National Fencing Act, 1963 (Act No 31 of 1963) as amended by Act 108 of 1991;
- The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983);
- South African National Standard (SANS) 10228 – The identification and classification of dangerous goods.

1.4 PUBLIC INVOLVEMENT

The potential environmental impacts associated with the proposed project are required to be considered in compliance with the Environmental Impact Assessment (EIA) Regulations of 2014 published in Government Notice R982 to R985 on 4 December 2014, in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act 107 of 1998) (as amended). The above scope of work was assessed against the Listing Notices of the EIA Regulations 2014 and the following is noted:

All the required construction work will be done at an existing RS facility and therefore, the project will not trigger any of the EIA listed activities.

The public participation process as prescribed in Chapter 6 of GNR No. R982 of December 2014 are also guided by relevant principles contained in Chapter 2 of NEMA and will not be required as the work does not trigger EIA activities.

2 DESCRIPTION OF THE PROJECT SITES

2.1 SITE LOCATION AND LAYOUT

The Koster Radio Site is an existing radio tower site where an existing site will be upgraded and is located near Koster in the North West Province.

Koster RS is an existing site in North West Province

Figure 1: Arial view (Google Earth Image) of the Koster RS and surrounding areas

Figure 2: Zoomed in image at the Koster Radio Site

2.1.1 TECHNICAL SPECIFICATIONS AND MAJOR ACTIVITIES

The Scope of works for this document is clearly set out in the following document, which must be read in conjunction with this one:

Koster Radio Site – Scope of Works (Civils) dated 24 November 2022

3 PROJECT SPECIFIC ENVIRONMENTAL CONTROLS

This section specifies standard mitigation measures to be followed by the parties responsible for environmental management during the upgrade at the Koster RS and the associated activities.

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
3.1 Project contract and programme			
The EMPr must be included as part of the tender documentation thereby making it part of the enquiry document to make the recommendations and constraints, as set out in this document, enforceable under the general conditions of contract.	Contingencies for minimising negative impacts anticipated to occur during the construction phase.	Contract records Signed declaration pro forma	During tender stage.
A copy of this EMPr must be available at all times at the Koster RS. The Contractor shall ensure that all the personnel on site, sub-contractors and their teams, suppliers, etc. are familiar with and understand the specifications contained in this EMPr.	Ensure environmental awareness and formalize environmental responsibilities and implementation.		During construction.
3.2 Method statements			
All activities which require method statements may only commence once the method statements have been approved by the PM and SEA. Where applicable, the contractor shall provide job-specific training/awareness on an ad hoc basis when workers are engaged in activities, which require method statements. It must be ensured that Eskom policies, guidelines and standards are consulted to ensure that method statements meet requirements as set out in these documents.	Contingencies for minimising negative impacts anticipated to occur during the construction phase.	Approved method statements and relevant pro forma documents Training records	As and when required.

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
3.3 Site demarcation and development All conditions contained in this EMPr must be adhered to and considered when site demarcation and development takes place. No activities will be allowed outside the demarcated area.	Contingencies for minimising negative impacts anticipated to occur during the construction phase.	Demarcated areas Filled in section of this document	As and when required.
3.4 Environmental Awareness All staff should receive environmental awareness training. The Contractor shall allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course. All new staff coming onto site shall receive environmental awareness training (Induction). Refresher environmental awareness training is available as and when required. All staff are aware of the conditions and controls linked to the EMPr and any other organisational requirements. All staff are made aware of their individual roles and responsibilities in achieving compliance with the EMPr. The Contractor shall erect and maintain information posters at key locations on site. Environmental awareness training should include as a minimum the following: • Description of significant environmental impacts, actual or potential, related to their work activities; • Mitigation measures to be implemented when carrying out specific activities; • Emergency preparedness and response	Environmental training and awareness of construction staff contribute to minimisation of the occurrence of environmental impact to the work area.	Environmental impact as a result of construction activities is minimised through the development of effective environmental awareness training material and execution of environmental awareness training for all staff.	First week of project commerce and as and when required.

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
procedures; • Emergency procedures; • Procedures to be followed when working near or within sensitive areas; • Wastewater management procedures; • Water usage and conservation; • Solid waste management procedures; • Sanitation procedures • Disease prevention; and • Chance find procedure for archaeological/paleontological/historical sites unearthed during construction. A record of all environmental awareness undertaken as part of the EMPr must be available and kept on site. A staff attendance register of all staff to have received environmental awareness training must be kept and made available.			
3.5 Construction site establishment A Method Statement shall be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas, ablution facilities, waste and wastewater management. Location of construction camps must be carefully considered and approved by Eskom to ensure that the site does not impact on sensitive areas. Sites should be located where possible on	Ensure that environmental issues are taken into consideration in the planning and construction of site establishment.	Impact to the environment during site establishment is minimised.	Before construction activities commence.

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
previously disturbed areas. The construction camp shall be fenced.			
3.6 Emergencies, non-compliance and communication Compile an Emergency Response Plan prior to the commencement of the proposed project. The Emergency Plan must deal with accidents, harsh weather conditions, disasters, wildlife interactions, potential spillages and fires in line with relevant legislation. All staff shall be made aware of emergency procedures as part of environmental awareness training. The relevant local authority shall be made aware of a fire as soon as it starts. In the event of an emergency, the necessary mitigation measures to contain the spill or leak shall be implemented.	Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.	All emergency situations are managed in accordance with the emergency procedures.	As and when required.
3.7 Hazardous Chemical Substances and Storage The contractor must provide method statements for the following: • Handling & storage of hazardous chemical substances • Fire Management • Emergency spills The substances must be confined to specific and secured areas within the contractor's site, and in a way that does not pose a danger of pollution even during times of high rainfall. These areas must be imperviously bunded with adequate containment (at least 1.5 times the volume of the fuel) for potential spills or leaks.	Prevention of pollution of the environment. Minimise chances of transgression of the acts controlling pollution. To minimise the risk of impact to the environment through the safe storage, handling, use and disposal of hazardous substances.	No pollution of the environment. No litigation due to transgression of pollution control acts. No complaints from Interested and Affected Parties. Method statements The management of hazardous substances is undertaken in accordance with the: • Hazardous	Daily

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
Drip trays (minimum of 10cm deep) must be placed under all vehicles that stand for more than 24 hours. Vehicles (including plant and equipment) suspected of leaking must not be left unattended, drip trays must be utilised. The surface area of the drip trays will be dependent on the vehicle and must be large enough to catch any hydrocarbons that may leak from the vehicle/plant while stationery. All spilled hazardous substances must be contained in impermeable containers for removal to a licensed hazardous waste management facility/site, (this includes contaminated soils, and drenched spill kit material). Materials such as fuel, oil, paint, herbicide and insecticides must be sealed and stored in bermed areas or under lock and key, as appropriate, in well-ventilated areas. Sufficient care must be taken when handling these materials to prevent pollution. In the case of pollution of any surface or groundwater, the Regional Representative of the Department of Water and Sanitation (DWS) must be informed immediately. Storage areas shall display the required safety signs and containers shall be clearly marked to indicate contents as well as safety requirements. Material Safety Data Sheets (MSDS) must be prepared for all hazardous substances on site and supplied by the supplier where relevant. MSDS's must be updated as required. Where Polycarbonate Biphenyls (PCBs) is required to be used it is imperative that Eskom policy document is consulted. The Occupational Health and Safety Act No 85 of 1993 to be complied with at all times. The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic		Substances Act of 1973 (Act No. 15 of 1973) • The Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste (Department of Water Affairs and Forestry, 1998) • National Environmental Management: Waste Act of 2008.	

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
alternatives substituted where possible. All hazardous substances will be stored in suitable containers as defined in the Method Statement. Containers will be clearly marked to indicate contents, quantities and safety requirements. All employees working with HCS will be trained in the safe use of the substance and according to the safety data sheet. Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment (PPE) must be made available. The floor of the bund shall be sloped, draining to an oil separator. All empty externally dirty drums shall be stored on a drip tray or within a bunded area. No unauthorised access into the hazardous substances storage areas shall be permitted. No smoking shall be allowed within the vicinity of the hazardous storage areas. Adequate fire-fighting equipment shall be made available at all hazardous storage areas.			
3.8 Cement The contractors must provide and maintain a method statement for Cement and Concrete batching. The method statement must provide information on proposed storage, washing & disposal of cement, packaging, tools and plant storage. The mixing of concrete shall only be done at specifically selected sites on mortar boards or similar structures to contain run-off into, drainage lines, streams and natural vegetation.	Minimise the possibility of cement residue entering into the surrounding environment. Minimise pollution of soil, surface and ground water resources.	No evidence of contaminated soil on the construction site. No evidence of contaminated water resources. Method statement	Daily

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
Concrete mixing and cement batching should take place on hard concrete surfaces. Cleaning of cement mixing and handling equipment shall be done using proper cleaning trays. All empty containers must be stored in a dedicated area and later removed from the site for appropriate disposal at a licensed commercial facility. Any spillage that may occur must be investigated and immediate remedial action shall be taken. The visible remains of concrete, either of solid, or from washings, shall be physically removed immediately or disposed of as waste to a registered landfill site. Cement batching areas must be located in consultation with the PM and EO to ensure residues are contained and that the proposed location does not fall within sensitive areas such as drainage lines, storm water channels, etc.			
3.9 Fuel storage The contractor must provide and maintain a method statement for Fuel tanks and refuelling. Fuel storage tanks on the site shall be on an impervious surface that is bunded and able to contain at least 110% of the volume of the tanks. The filler tap must be inside the bunded area where possible and the bund wall must not have a tap or valve. A Flammable Liquid License must be obtained for diesel volumes greater than 200 litres. An authorisation is required for volumes greater than 80 cubic metres combined that are stored on site. Fuel storage should be covered during the rainy season. The Contractor shall ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers.	Prevention of pollution of soil, surface and ground water resources in the immediate and surrounding environments. Minimise chances of transgression of the acts controlling pollution.	No visible signs of pollution. No litigation due to transgression of pollution control acts. Method statement.	Once off / as required.

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
The tanks/ bowsers shall be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining shall extend to the crest of the bund and the volume inside the bund shall be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall). Where refuelling away from the dedicated refuelling station is required, a mobile refuelling unit shall be used. Appropriate ground protection such as drip trays shall be used as well.			
3.10 Spills on site The contractor shall keep the necessary materials and equipment on site to deal with spills/ fire. The contractor shall set up a procedure for dealing with spills / fire, which will include notifying the SEA and PM and the relevant authorities. These procedures must be developed with consultation and approval by the appointed SEA or PM as applicable. A record must be kept of all spills and the corrective action taken. An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance shall be available at all times. The responsible operator shall have the required training to make use of the spill kit in emergency situations. In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008.	Prevention of pollution of soil, surface and ground water resources in the immediate and surrounding environments. Minimise chances of transgression of the acts controlling pollution.	No pollution of the environment. No litigation due to transgression of pollution control acts.	As required
3.11 Eating areas The Contractor shall, in conjunction with the environmental / SHE Officer or PM designate	Control potential influx of vermin and flies.	No visual sign of vermin and flies.	Daily

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
restricted eating areas for eating during normal working hours. Adequate closed refuse bins must be provided and cleaned on a daily basis. Litter (even if originating outside the camp) and concrete bags etc. must be picked up daily and put into suitably closed bins.	Neat workplace and hygienic environment.	No complaints from I & AP's.	
3.12 Waste Management All measures regarding waste management shall be undertaken using an integrated waste management approach. Sufficient, covered waste collection bins (scavenger and weatherproof) shall be provided. A suitably positioned and clearly demarcated waste collection site shall be identified and provided. The waste collection site shall be maintained in a clean and orderly fashion. Waste shall be segregated into separate bins and clearly marked for each waste type. Staff shall be trained in waste segregation. Recycling of waste types shall be maximised. Bins shall be emptied regularly. General waste shall be disposed of at recognised and registered waste disposal sites/ recycling company. Hazardous waste shall be disposed of at a registered waste disposal site. Certificates of disposal for general, hazardous and recycled waste shall be maintained and submitted to the SEA on a monthly basis. Under no circumstances shall any waste be disposed of, burned or buried on site.	To avoid, manage and mitigate potential impacts to the environment caused by the incorrect storage, handling and disposal of general and hazardous solid waste.	Solid waste management is undertaken in accordance with relevant national and provincial legislation and local by-laws. Monthly waste disposal statistics	Daily / as and when required
3.13 Sanitation			

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
Mobile chemical toilets shall be installed onsite if no other ablution facilities are available. The use of ablution facilities and or mobile toilets shall be used at all times and no indiscriminate use of the veld for the purposes of ablutions shall be permitted under any circumstances. Ablution facilities shall be located within 100metres of any work place and shall be numerous enough to accommodate the workforce (minimum requirement of 1:15 workers on site). Where mobile chemical toilets are required, the following shall be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and shall be locked after working hours; and f) Toilets are serviced regularly and the SHE / Environment Officer must inspect toilets to ensure compliance to health standards. A copy of the waste disposal certificates shall be maintained.	An abundant supply of suitably located, clean and well maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.	No pollution or disease arises on-site as a result of sanitation facilities or lack thereof. Monthly disposal statistics	Daily / weekly
3.14 Noise Management All construction vehicles must be in a good working order to reduce possible noise pollution.	To prevent unnecessary noise to the environment by ensuring that noise	Noise management is undertaken in accordance with SANS	Daily

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
Noise reduction is essential and contractors shall endeavour to limit unnecessary noise, especially loud talking, shouting or whistling, radios, sirens or hooters, motor revving, etc. Noisy activities shall take place only during normal working hours. The SEA must inform surrounding Eskom management and landowners in writing 24 hours prior to any planned activities that will be unusually noisy or any other activities that could reasonably have an impact on the adjacent sites. These activities could include, but are not limited to, blasting, piling, use of pneumatic jackhammers and compressors.	from construction activity is mitigated	10103 and requirements of the EMPr. No complaints from surrounding landowners. Written notification to landowners.	
3.15 Water Management Appropriate pollution control facilities necessary to prevent discharge of water containing polluting matter or visible suspended materials into watercourses or water bodies shall be designed and implemented. Runoff from the cement/ concrete batching areas shall be strictly controlled, and contaminated water shall be collected, stored and either treated or disposed of off-site, at a location approved by the Project Manager. All spillage of oil onto concrete surfaces shall be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility. Natural storm water runoff not contaminated by construction operations and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval. Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the	To avoid, manage and mitigate potential impacts to the environment caused by wastewater discharge during construction	Wastewater management is undertaken in accordance with relevant national and provincial legislation and local by-laws.	Daily

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
water by settling out these solids in settlement ponds.			
3.16 Workshop, equipment maintenance and storage (if applicable) Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area. During servicing of vehicles or equipment, especially where emergency repairs are affected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. Leaking equipment must be repaired immediately or be removed from site to facilitate repair. Workshop areas must be monitored for oil and fuel spills and such spills. Appropriately sized spill kit kept on site relevant to the scale of the activity taking place shall be available. The responsible operator of equipment must have the required training to make use of the spill kit in emergency situations. The workshop area shall have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed. Water drainage from the workshop are shall be contained.	The control operation, maintenance and storage of equipment prevents soil, surface water and groundwater contamination.	Soil, surface water and groundwater contamination is prevented due to adherence of EMPr requirements.	Daily
3.17 Heritage (if applicable) In terms of the National Heritage Act, 1999 (Act No. 25 of 1999), construction personnel must be alert and must inform the local authorities should they come across any findings of heritage resources within 24 hours if the area has been removed. Should any archaeological artefacts be exposed	Limit the destruction of the country's heritage resources The preservation and appropriate management of new archaeological	No destruction of or damage to known archaeological sites.	As and when required

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
during construction activities, work on the area where the artefacts were found shall cease immediately and the South African Heritage Resources Agency shall be notified within 24 hours. Under no circumstances shall archaeological artefacts be removed, destroyed or interfered.	finds should these be discovered during construction.		
3.18 Access roads Existing roads and services must be utilised as far as possible. No unauthorised access is permitted. Any damage or degradation will be investigated and fines issued, the affected areas must be immediately rehabilitated. No driving off from the marked roads is permitted and designated parking areas must be identified and demarcated with applicable signage Any damages on access road shall be rehabilitated before the contractor leave the site.	Minimise loss of topsoil and enhancement of erosion. Minimise fauna and flora displacement by destruction of natural habitats.	No erosion on access roads after completion of construction. No loss of topsoil due to runoff water on access roads.	As required
3.19 No-go / sensitive areas All construction activities must remain within the boundaries of the development area, as demarcated at the start of construction. The construction footprint must be kept to a minimum by constructing boundaries and demarcated around areas not to be disturbed thus reducing the infringement of the development on natural habitat. No-go areas must be demarcated with fencing/warning tape and signs before any construction activities commence. Vehicles are only to access the site via the existing access road. No one is allowed to go beyond the demarcated areas.	Minimise the potential for the spread of the construction footprint. Reduce loss of fauna and flora habitat Minimise the potential for loss of protected fauna and flora species.	No sign of movement through “no go” areas. Containment of footprint.	Daily

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
3.20 Fire Management Designate smoking areas where the fire hazard could be regarded as insignificant. Educate workers on the dangers of open and/or unattended fires. No open fires shall be allowed on site under any circumstances. Firefighting equipment shall be available on all vehicles located on site. Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site.	To minimise the risk of fire during construction.	Fire prevention measures are carried out in accordance with the National Veld and Forest Fire Act, 101 of 1998.	As and when required
3.21 Rehabilitation All areas disturbed by construction activities shall be subject to landscaping and rehabilitation. All spoil and waste will be removed to a registered waste site and certificates of disposal provided. Rehabilitation at substation sites shall be undertaken in accordance with civil designs. Stockpiled topsoil will be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion. Before placing topsoil, all visible weeds from the placement area and from the topsoil shall be removed. Subsoil shall be ripped before topsoil is placed. Where required, re-vegetation can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen. b) Pioneer species are included.	Areas disturbed during construction are returned to a state that approximates the state, which they were before disruption.	Landscaping and rehabilitation is undertaken in accordance with the approved rehabilitation plan/specification.	During and /or after main constriction activities

MITIGATION MEASURES	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
c) Species chosen must grow in the area without any problems. d) Root systems must have a binding effect on the soil. e) The final product should not cause an ecological imbalance in the area.			

4. CONCLUSION

This Environmental Management Programme report should be used as an on-site reference document during all phases of this project, and auditing should take place in order to determine compliance with this EMPr. Parties responsible for transgression of this EMPr should be held responsible for any rehabilitation that may need to be undertaken. Parties responsible for environmental degradation through irresponsible behaviour / negligence should receive penalties as stipulated in TPD Environmental Requirements for Contractors and/or Suppliers (TPDMAN-ST-37).

Process facilitated the identification of relevant and practical mitigation measures, which may be used by the construction team and Eskom to draw up and respond to tender documentation. It is thus a key to this process that this document is included during tendering to allow all potential bidders for this work to seriously consider and cost for such mitigation. This will ensure that the document receives the necessary buy in that it requires from the outset of the project.

In order to have records of environmental incidences and the handling thereof, it is suggested that incident logs be filled in by the CEO / SHE. The project manager needs to be informed of such incidents and further actions need to be taken, should the need arise.