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FOR SUBMISSION TO:

Department of Environmental Affairs and Tourism





Dinaledi 2x 400kV feeder bays and Substation Extension

EXECUTIVE SUMMERY

This Environmental Management Plan (EMP) has been compiled to address the potential environmental impact that might occur during the construction phase of the Dinaledi substation expansion. This document serves as the environmental specification to Eskom personnel and outside contractors with regards to addressing the environmental issues identified prior to the construction phase. It is the responsibility of the Project Manager (PM), Contractors and the Environmental Control Officer (ECO) to ensure compliance with all the environmental specifications in this document as well as the relevant legislation.

This EMP should also ensure the sustainable management of the environment whilst the construction of the Dinaledi substation Feeder Bays is being undertaken. This EMP must be viewed as a contact document to which all Eskom employees and outside contractors involved in the proposed Dinaledi expansion should adhere to.

NB: This EMP 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.

This is an internal construction EMP to cater for the Dinaledi extension as requested. It is recommended that the foundations of the feeder bays be designed and reinforced so as to be compatible with the geological and geo-hydrological nature of the selected site.

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1. INTRODUCTION

The expansion of a substation can have major negative impacts on the environment. It is thus imperative that precautions be taken during the construction and operational phases of the project to ensure that environmental damage is minimised. This will take a concerted effort from the project team and proper planning to ensure that the desired outcome of having less negative impact on the environment is achieved.

The scope of this document is to give environmental management recommendations, to the Contractor constructing the extension, in fulfilment of ISO 14001 requirements. This document is part of the contract and supplementary to Eskom's TRMSCAAC1 REV 3. The recommendations and constraints, as set out in this document are enforceable under the general conditions of the contract.

The objective of this environmental management plan is to ensure that:

- All anticipated environmental impacts during the construction periods are identified and mitigation measures are clearly outlined;
- All Environmental Management conditions and requirements are implemented throughout the project;
- Eskom Transmission's Environmental Policy TPL41-435 is underwritten at all times;
- All environmental conditions as stipulated in the Environmental Authorisation (EA) are implemented;
- Problems and claims arising from damage are immediately resolved to ensure a smooth flow of operations and;
- The natural environment is preserved by limiting destructive actions on site.

1.1 PROJECT SCOPE OF WORKS

To extend the existing 400kV by 5 bays and equip two of these 400kV feeder bays (feeder 3 and Feeder 4) for the Spitskop 1 and Spitskop 2 feeders. This has become necessary to provide for the growing base loads in the country that cannot be provided for by the existing Generation, Transmission and Distribution systems.

The 400kV system expansion will comprise the following bays:

- Expansion of the substation by 100m x200m
- ✤ 2x fully equipped feeder bays with double busbars selection and bypass (Spitskop 1 and Spitskop 2).
- 1x unequipped transformer bay (Transformer 3 Future)
- 1x unequipped transfer bus couple/shunt cap bay (transfer Bus Coupler/Capacitor Bank 1)
- 1x unequipped bus section isolator bay (No. 1 Bus section 2 Isolator)
- 1x unequipped bus section bay (No.2 bus Section 2)

The scope of the civil and structural works shall generally be as follows, but is not limited to the following:

1.1.1 GENERAL DESCRIPTION OF CIVIL WORKS

To provide a terrace complete with fencing, roads, cable trenches, earth-mat and drainage for oil & storm water, as well as foundations and transformer plinths as per bay layouts.

Terrace earth works:

The existing 400kV yard terrace is to be extended by 1 hectare along the eastern edger to accommodate the Feeder 3 bay pass.

Access roads:

Extend the 6 metre concrete road to the south by 100 metres

Terrace drainage:

The 400kV storm-water drainage system is to be extended for the busbar extension.

Control building:

Existing

Foundations, plinths and trenches:

Provide main column, tubular busbar and equipment foundations, and cable trenches in 400kV yard as per Foundation and Trench layout and Bay Layouts.

Yard stoning:

New yard stone is required in newly extended 400kV yards area.

Fencing (275kV and 400kV yards):

The fence along the eastern and southern edges of the 400kV yard is to be removed and a new fence line followed to include the new Feeder 3 underpass and yard extension to the south.

Drainage

The 400kV storm water drainage system is to be extended for the busbar extension.

Operational lighting

Floodlighting is required in the new yard extension.

Structural Steel

Steelwork for primary plant and support steelwork for stringers and tubular busbars is to be provided for the two new feeder bays, Feeder 3 underpass, and future 132KV Feeder 12 and 13 overpass (400kV bus section area) and busbar extensions as per Steelwork Marking Plan.

1.1.2 STANDARDS

The design, manufacture, fabrication, galvanising, testing, construction, materials used for manufacture, erection of station structures, design & construction of foundations shall conform to the following SABS codes. The latest revisions, with amendments/changes adopted and published, shall be used, unless specifically stated otherwise in the specification.

The material and services covered under these specifications shall be performed as per requirements of the relevant standards / codes mentioned below. Other internationally acceptable standards, which ensure equal or higher performance than those specified, shall also be accepted with permission from the Project Manager.

List of SABS; Codes of Practices for Civil Works

SABS 0100	The structural use of concrete
SABS 0161	The design of foundation for buildings
SABS 0162-1:93	The structural use of Steel
SABS 0163	The design of timber structures
SABS 0164	Structural use of masonry
SABS 0400	The application of the national building regulations
SABS 1200	Standardised specifications for civil engineering construction
SABS 471	For Portland cement
SABS 1090	For sand
SABS 1083	For coarse aggregates
SABS 920/1024	Steel reinforcement for reinforced concrete works.
SABS 878	Ready mixed concrete
SABS 1431	Steel used for fabrication work.
SABS 135/136	For Bolts, Nuts and Washers.
SABS 1282	High strength friction grip bolts
SABS ISO 1461	Hot dipped galvanised coating on fabricated iron & steel articles

1.2 BACKGROUND INFORMATION

1.2.1 Project Execution Area

Dinaledi 400kV substation is located in the flat area approximately 10km north-east from Brits, in the North West Province. The area is surrounded mostly by open land which is populated by bushveld vegetation. There were no signs of archaeological, cultural, or heritage sites and there is no indication of sensitive landscape. North of the substation there is a built up area which is not likely to be affected by the Dinaledi substation extension.

The execution area is limited to Eskom property as shown on the locality plan (Annexure 7) and aerial images (Annexure 8). Any area outside the Eskom property, required to facilitate access, construction activities, or material storage areas, shall be negotiated with the affected Landowner and written agreements shall be obtained. All construction areas shall be cleared in accordance with the Eskom Standard for Bush clearing ESKASABG3. No extra area is to be cleared outside the Eskom property. The types of trees that need to be cleared inside and outside are neither protected nor endangered tree species. See pictures below for some of the trees which need to be cleared.

FIGURE 1: KEY PLAN



2. MAJOR ACTIVITIES OF THE PROJECT

ACTIVITIES	PROPOSED
	PROGRAMME
	DURATION
	Estimated Completion
• Environmental Impact Assessment – Refer to annexure "E" for	date: June 2009
a Copy of ROD.	
• Negotiations for the servitude -Landowners, their contact	Property has been
details and their special conditions are listed under section 5 of	purchased
this document.	
• Establishment of camp sites for the Contractors' workforce. An	Site establishment
approved (by the relevant Government authorities) site Camp	inside existing ESKOM
EMP will be used to guide the establishment of the camp site	Substation
 Vegetation clearing to facilitate civil construction 	February 2010
• Establishing of access roads on the servitude where required	N/A Substation project
as per design parameters in TRMSCAAC1 rev 3.	
o Transportation of equipment, materials and personnel to site	January 2011
and stores.	
 Substation Civil work 	June 2010
 Steel structure assembly and erection. 	September 2010
 Conductor stringing. 	November 2010
\circ Taking over the Substation from the contractor for	February 2011
commissioning.	
\circ Final inspection of the Substation, commissioning and hand	February 2011
over to the Grid Primary Plant Manager for operation.	

3. PROJECT TEAM

Profession/Role	Name	Contact	Remarks
Grid Planning	Mfundi Songo	Details 082 428	SongoME@eskom.co.za
Engineer (GPE)		5965	
Eskom Environmental Advisor (EEA)	Sebenzile Vilakazi/Mfundo Maphanga	082 885 8114 076 895 3657	Vilakazs@eskom.co.za mfundo.maphanga@eskom.co.za
Servitude Negotiator (SN)	Phuti Makweya	082 316 9025	MakweyP@eskom.co.za
Project Manager (PM)	D Neervoort	079 505 6903	dickn@ssi.co.za
Site Manager (SM)	Dan Hartman	084 254 1221	danh@ssi.co.za
ECO (Environmental Control Officer)	To be appointed		
Contractor	To be appointed		
CECO	To be		
(Contractor	appointed		
Control Officer			
(Dedicated			
person			
appointed by the contractor)			
Substation	JD Fourie	082 878	
Manager	Derrick Chauke	9013 083 485 6300	
Authorising Department (AD)	Department of Environmental Affairs and Tourism	012 310 3087	LGrobbelaar@deat.gov.za

3.1 REPORTING STRUCTURE



3.2 ROLES AND RESPONSIBILITIES OF THE PROJECT TEAM

3.2.1 Eskom Environmental Advisor (during feasibility stages & construction phases)

- To project manage the independent Environmental Consultants throughout the EIA life cycle and to ensure that a friendly, practical, environmental management plan (EMP) for the construction phase of a project is compiled and approved by the relevant and appropriate government authorities;
- To ensure that all conditions as stipulated in the ROD are met; and
- To conduct spot audit during construction.

3.2.2 Servitude Negotiator

- To negotiate servitude on private and public owned properties; and
- To identify landowner conditions & requirements.

3.2.3 Project Manager/Site Manager

- Represents and act on behalf of Eskom Transmission regarding the administration of contracts;
- In consultation with the system Planning Engineer, determines the scope of work;
- To provide scheduling, aspects of co-ordination and estimating;
- Ensure implementation of the project plan within cost, time and quality constraints;
- Ensure that implementation of EMP is executed as planned; and
- Keep the asset owner informed of progress made during the life cycle of the project.

No work shall commence until permission is granted from the Environmental Advisor from Transmission Services and the ROD from DEAT has been obtained. The Project Manager

shall ensure that all conditions in the ROD are fulfilled before the Contractor occupies the site. The Grid shall be kept informed of all developments on construction at all times. All the requirements from the Grid must be considered during the construction phase to ensure smooth transition.

3.2.4 Environmental Control Officer

- The Environmental Control Officer shall convey the contents of this document, the conditions of the Record of Decision from DEAT to the Contractor site staff and discuss the contents in detail with Eskom Project Manager and Contractor at a pre-construction meeting. This formal induction training is a requirement of ISO 14001 and shall be done with all main and sub-contractors. Record of the training date, people whom attended and discussion points shall be kept by the ECO;
- Landowners shall therefore be informed timeously of the construction programme, duration and all interference with their daily activities;
- The contact numbers of the ECO and CECO shall be made available to Landowners;
- ECO officer will report progress made on a monthly basis to the PM and Land & Rights EIA Manager. These reports shall be available at all times, on site or in project file and on request by auditors, DEAT and other I&APs; and
- ECO shall record all Non Conformances and action plans to ensure that measures are put in place to remedy possible effect.

3.2.5 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 CECO;
- 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;
- To comply with special conditions as stipulated by Landowners during the negotiation process; 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.

3.2.6 Eskom Environmental Practitioner (During Operational Stage)

- To implement and integrate environmental management systems by ensuring compliance to ISO 14000 & monitoring performance;
- Report environmental incidents;
- Provides environmental training; and
- Ensures compliance to legislations and other legally binding documents.

3.2.7 Environmental Consultants

- Investigate and produce assessment of impacts on the environment related to the project;
- Ensure the implementation of a thorough public participation process;
- Draft and submit scoping and EIR to relevant Government Departments; and
- Draft EMP and submit for approval to the relevant Government Departments.

3.2.8 Authorising Department

• To provide ROD on the application lodged for the proposed substation and related activities.

4. ACRONYMS

Eskom Specification/ Procedure	Abbreviation
Access to Farms	TRMPVACV2 REV1
Bush Clearing	ESKASABG3
Eskom Manual on Storage and Handling of	ESKAMAAD1
Flammable and combustible liquids	
Transmission Line Towers and Line Construction	TRMSCAAC1 REV3

5. ENVISAGED ACTIVITY SCHEDULE AND ASSOCIATED IMPACTS

The key environmental issues that are identified have been based on the experience of the EEA on similar developments which entail environmental assessment as well as information obtained from the site visit.

The potential impacts and key issues identified include:

- Suitability of geological and soil conditions for construction of the proposed infrastructure;
- Soil and water (surface and groundwater) contamination;
- Soil erosion and pollution;
- Waste and oil spills;
- Destruction of flora and displacement of fauna;
- Destruction of heritage resources;
- Visual impact during and after construction;
- Noise impacts during construction phase; and
- Safety and security of the landowners.

The manner in which these issues can affect the environment is briefly outlined as follows:

- <u>Contamination of groundwater</u> as a result of deposition of contaminants during the construction phase;
- <u>Contamination of surface water</u> as a result of siltation caused by increased erosion, during the construction phase. Increased erosion could be caused by the creation of preferred drainage lines;
- <u>Noise impacts</u> from construction vehicles and other heavy-duty equipment used during the construction and operational phases of the substations;
- <u>Visual impact</u> caused by dust from heavy vehicles during the construction phase.
- <u>Floral destruction</u> through vegetation clearing and earthworks during the construction phase, and maintenance activities during the operational phase;
- <u>Habitat destruction</u> as a result of vegetation clearing and other pre-construction activities;
- <u>Impact on safety and security</u>, as a result of construction and operational activities on the substation;
- <u>Destruction of heritage resources</u>, through excavation works during construction.

The pictures below show how the potential environmental risks are mitigated during construction.

Figure 1: HDPE lining





Before lining

After Lining

Figure 2: Diesel storage tank on a bunded concrete floor



Figure 3: Labled waste bins with lids for different waste types



5.1 TABLE 1: PRE-CONSTRUCTION

Phase of development	PRE-CONSTRUCTION (PLANNING)
Impact / issue	GENERAL

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
Project contract and programme The EMP 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's 	
A copy of this EMP must be available at the Dinaledi substation. The Contractor shall ensure that all the personnel on site, sub-contractors and their team, suppliers, etc. are familiar with and understand the specifications contained in the EMP.	Ensure environmental awareness and formalise environmental responsibilities and implementation.		

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
Appointments and duties of project team The contact details for the ECO, PM, Contractor and CECO shall be completed on the attached pro-forma (Annexture 10) and a copy kept on site (As applicable). Before construction activities commence, role players must have a clear indication as to their role in the implimentation of this EMP as indicated in section 3.2 of this EMP. Subcontractor(s) contracts with the principle contractor must contain a clause to the effect that the disposal of all construction-generated refuse / waste to an officially approved dumping site is the responsibility of the subcontractor in question and that the subcontractors are bound to the management activities stipulated in this EMP.	Contingencies for minimising negative impacts anticipated to occur during the construction phase	 Contract records Signed declaration pro forma's 	As and when required
Method statements All activities which require method statements may only commence once the method statements have been approved by the PM, CECO and/or ECO. Where applicable, the contractor shall provide job-specific training on an <i>ad hoc</i> 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 MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
Site demarcation and development All 'general' and 'specific' conditions contained in the RoD 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 area's Filled in section of this document 	As and when required
Emergencies, non-compliance and communication The contractor must provide method statements on the protocols to be followed, and contingencies to be put in place for the following potential incidents before construction may begin: Contamination of natural water resources from spills; contamination of soils from spills and fire.	 Contingencies for minimising negative impacts anticipated to occur during the construction phase 	Method statements	As and when required
The contractor must ensure that all the contact details and telephone numbers of health personnel, fire fighters and decision making authorities are noticeable on site in case of an emergency.			

5.2 TABLE 2: CONSTRUCTION PHASE

Phase of development	CONSTRUCTION
Impact / issue	MATERIALS

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
Oil and chemicals The contractor must provide method statements for the "handling & storage of oils and chemicals", "fire", and "emergency spills procedures". These 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 Drip trays (minimum of 10cm deep) must be placed under all vehicles that stand for more than 24 hours. Vehicles 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 while standing.	 Prevention of pollution of the environment Minimise chances of transgression of the acts controlling pollution 	 No pollution of the environment No litigation due to transgression of pollution control acts No complaints from I & AP's Method statements 	Daily
that may leak from the vehicle while standing. All spilled hazardous substances must be contained in			

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
 impermeable containers for removal to a licensed hazardous waste site, (this includes contaminated soils, and drenched spill kit material). Likewise, all old oil (from transformers on the existing site) that currently reside in the oil dump at the Dinaledi site will need to be contained in impermeable containers for removal to a licensed hazardous waste disposal site when decommissioned. 			
 Stockpiles All stockpiled material must be easily accessible without any environmental damage. It is recommended that stockpiles be placed on the disturbed areas inside the substation area. Appropriate berms need to be placed on the down-slope of the stockpiles. All temporarily stockpiled material must be stockpiled in such a way that the spread of materials are minimised. The stockpiles may only be placed within the demarcated areas of the location of which must be approved by the PM, CECO or ECO. The contractor must avoid vegetated areas that will not be cleared. No plant, workforce or any construction related activities may be allowed onto the topsoil stockpiles. Stock piles must not be higher than 2m to avoid compaction thereby maintaining the soil integrity and chemical composition. 	 Minimise scaring of the soil surface and land features Minimise disturbance and loss of soil Minimise construction footprint Minimise sedimentation of nearby drainage lines Maintain the integrity of topsoil's for landscaping and rehabilitation Containment of invasive plant growth Minimise contamination of storm water run-off 	 No visible erosion scars once construction is completed The footprint has not exceeded the agreed site in terms of EA etc. Minimal invasive weed growth No signs of sedimentation and erosion 	Daily

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
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. Concrete mixing and cement batching should preferably 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 solid, or from washings, shall be physically removed immediately and disposed of as waste to a registered landfill site. Cement batching areas must be located in consultation with the PM, CECO and/or ECO to ensure residues are contained and that the proposed location does not fall within sensitive areas such as drainage lines, storm water channels, etc.	 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 	Monitored daily

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
DANGEROUS AND TOXIC MATERIALS	Prevention of pollution	 No visible signs of pollution 	Monitor daily
Provision of storage facilities	of soil, surface and around water resources	 No litigation due to 	
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.	in the immediate and surrounding environments	transgression of pollution control acts	
Sufficient care must be taken when handling these materials to prevent pollution. Training on the handling of dangerous and toxic materials must be conducted for all staff prior to the commencement of construction.	 Minimise chances of transgression of the acts controlling pollution 		
In the case of pollution of any surface or groundwater, the Regional Representative of the Department of Water and Environmental Affairs (DWEA) must be informed immediately.			
Storage areas shall display the required safety signs depicting "no smoking", No Naked lights" and "Danger" containers shall be clearly marked to indicate contents as well as safety requirements.			
The contractor shall supply a method statement for the storage of hazardous materials at tender stage.			
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 (PCB) is required to be used it is imperative that Eskom policy document <i>ESKASAAC2</i> is consulted.			

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
 Fuel storage and oils The contractors must provide and maintain a method statement for "fuel tanks and refuelling procedures". 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. Environmental Authorisation is required for volumes greater than 30 000 litres Fuel storage should be covered during the rainy season. 	 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
Use of dangerous and toxic materials <i>Eskom Ref: ESKASAAC2</i> The contractor shall keep the necessary materials and equipment on site to deal with spills/ fire of the materials present. The contractor shall set up a procedure for dealing with spills / fire, which will include notifying the ECO and or PM and the relevant authorities prior to commencing with construction. These procedures must be developed with consultation and approval by the appointed ECO, CECO or PM as applicable. A record must be kept of all spills and the corrective action taken.	 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

TABLE 3: CONSTRUCTION PHASE

Phase of development	CONSTRUCTION
Impact / issues	PLANT

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
 Eating areas The Contractor shall, in conjunction with the EO, CECO or PM designate restricted eating areas for eating during normal working hours. Adequate closed refuse bins must be provided and cleaned on a daily basis. No fires are to be lit outside of a facility designed to contain fires. The adequacy and positioning of these structures must be determined in consultation with the EO, CECO or PM. The feeding, or leaving of food, for stray or other animals in the area is strictly prohibited. Litter (even if originating outside the camp) and concrete bags etc. must be picked up daily and put into suitably closed bins. 	 Control potential influx of vermin and flies Neat work place and hygienic environment 	 No visual sign of vermin and flies No complaints from I & AP's 	monitor daily
Waste management The contractors must provide and maintain a method statement for "solid waste management". The method statement must provide information on proposed licensed facility to be utilised and details of proposed record keeping for auditing purposes. Waste shall be separated into recyclable and non-recyclable waste, and shall be separated as follows:	 Sustainable management of waste by recycling To keep the site neat and tidy Minimise litigation and complaints by I&AP's 	 Disposal of rubble and refuse in an appropriate manner with no rubble and refuse lying on site Site is neat and tidy No complaints from surrounding residents and businesses 	Daily

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
 Hazardous waste: including (but not limited to) old oil, paint, etc, General waste: including (but not limited to) construction rubble, Reusable construction material. Recyclable waste shall preferably be deposited in separate bins. Any illegal dumping of waste will not be tolerated, this action will result in a fine and if required further legal action will be taken. This aspect will be closely monitored and reported on; proof of legal dumping must be produced on request. Bins must be clearly marked for ease of management. Sufficient closed containers must be strategically located around the construction site to handle the amount of litter, wastes and rubbish, debris and builders wastes generated on the site. Subcontractor(s) contract must contain a clause to the effect that the disposal of all construction-generated refuse / waste to an officially approved dumping site is the responsibility of the subcontractor in question and that the subcontractors are bound to the management activities stipulated in this EMP. Proof of this undertaking must be issued to the ECO. All solid and chemical wastes that are generated must be removed and disposed of at a licensed waste disposal site. The contractor is to provide proof of such to the EO and ECO. Chemical containers and packaging brought onto the site must be removed for disposal at a suitable site. 	 Reduce visual impact Control potential influx of vermin and flies thereby minimising the potential of diseases on site and the surrounding environment Minimise potential to pollute soils and natural habitats 	 Sufficient containers available on site No visible or measurable signs of pollution to the environment (soils, ground and surface water) A skip, with a cover, must be used to contain refuse from campsite bins, rubble and other construction material Method statement 	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
Dust The contractor must provide and maintain a method statement for "dust control". The method statement must provide information on the proposed source of water to be utilised and the details of the licenses acquired for such usage. No dust emissions should be allowed to impact upon landowners and employees on site. Potable water can not be used as a means of dust suppression, alternative measures must be sourced. The use of 'grey' water must be investigated as an alternative. The contractor will be responsible to source this water and obtain the required approvals to utilise this water for the purpose of dust suppression. Dust production must be controlled by regular watering of roads and works area, should the need arise. (NB: Concrete dust is toxic and damages soil properties. Therefore watering to prevent dust spread must not be done where concrete dust has fallen as it will infiltrate into the soil. Concrete bags must not be allowed to blow around the site and spread cement dust). In addition to the standard dust suppression measures and where these measures are not sufficient, main access roads and the site must be surfaced with a temporary surface such as gravel to assist with dust suppression. At the end of construction, the site must be fully rehabilitated by removing the temporary surface, ripping the area to loosen the soil and the area must be re-vegetated with locally indigenous vegetation only, according to the landscape	 Reduce dust Reduce visual impact Minimise loss of valuable soil material 	 No visible signs of dust No complaints from Interested and Affected parties No incidences reported to ECO No visible evidence of dust contamination on the surrounding environment Method statement Baseline targets not exceeded during regular monitoring of dust counts 	Monitored daily

MITIGATION MEASURE	MANAGEMENT OBJECTIVES MEASURABLE TARGETS		FREQUENCY OF ACTION
 development plan for the project. All vehicles transporting material that can be blown off (e.g. soil, rubble etc.) must be covered with a tarpaulin, and speed limits of 20 km/h must be adhered to. Excessive dust conditions shall be reported to the ECO. Regular monitoring of dust fallout must be carried out and the records kept on site. All forms of dust pollution must be managed in terms of the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965) 			
 Workshop equipment, maintenance and storage Leaking equipment shall be repaired immediately or be removed from site to facilitate repair. All potentially hazardous and non-degradable waste shall be collected and removed to a registered waste site. Cleaning and remediation must be done with products that are in line with best environmental practice e.g. Sunsorb A method statement is required from the Contractor, tendering for the project to show procedures for dealing with possible emergencies that can occur, such as fire and accidental leaks and spillage. The Contractor shall be in possession of an emergency spill kit that must be complete and available at all times on site. The Contractor must ensure that senior and other relevant members of the workforce are trained in dealing with spills by using emergency spill kits. 	 Prevent pollution to the environment Minimise chance of transgression of the acts controlling pollution Disposal of hazardous substances in an appropriate manner 	 No pollution of the environment No litigation due to transgression of pollution control acts Method statement 	Monitor daily

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
The following shall apply: All contaminated soil/yard stone shall be removed and disposed of as hazardous waste at a registered facility or placed in containers to be taken to one central point where bio-remediation can be done. (Bio-remediation should only be an option if an Environmental Authorisation has been issued)			
A specialist Contractor shall be used for the bio-remediation of contaminated soil where the required remediation material and expertise is not available on site.			
All spills of hazardous substances must be reported to the ESO, EO, RE or ECO.			
The contractor must comply with the regulations of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).			
Noise Dinaledi substation is not located in close proximity to residential areas or businesses etc.	 Maintain noise levels below "disturbing" as defined in the National Noise Regulations 	 No complaints from surrounding landowners or I&APs 	As and when required
All construction vehicles must be in a good working order to reduce possible noise pollution.	 Minimise the nuisance factor of the development 		
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. The use of silent compressors is a specific requirement.			
Noisy activities shall take place only during working hours (7:00 and 17:00). The CECO must inform surrounding landowners in writing 24 hours prior to any planned activities that will be			

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
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 jack-hammers and compressors.			

TABLE 4:CONSTRUCTION PHASE

Phase of development	CONSTRUCTION
Impact / issue	CONSTRUCTION

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUE NCY OF ACTION
 Crew camps The contractors must provide and maintain a method statement for "Crew camps and construction lay-down areas". Accommodation for members of the workforce will not be permitted on site unless authorisation has been given in terms of the Environmental Authorisation issued for the site. Dedicated wash areas must be situated away from watercourses and drainage lines. The contractor's camp shall be monitored for dust fallout and dust suppression applied as required. This may include the laying of gravel, the use of grey water can be considered as an option if the required permits have been acquired. The contractor's camp, offices and storage facilities shall be located within the site 	 Minimise water pollution Minimise dust fallout Minimise unwarranted environmental damage outside the footprint Maintain a clean and healthy working 	 No signs of water or soil pollution No complaints from surrounding landowners or l&APs No visible signs of litter Method statements 	Monitor daily

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUE NCY OF ACTION
 boundaries. No person shall be allowed to stay on neighbouring sites; unless it is cleared with the owner- In such an event all requirements contained herein for the contractor's camps will apply. The contractor shall provide labourers to clean up the contractor's camp and construction site on a daily basis. These areas shall then be inspected by the contractor or his/her ESO to ensure compliance with this requirement. The contractor shall be responsible for cleaning the contractor's camp and construction site of all structures, equipment, residual litter and building materials at the end of the construction period. The crew camp building materials must not be reflective to pose visual impacts. The contractor must ensure the management of the construction camp, material storage site and related activities such as ablution and housing facilities, waste and water management. 	 environment Minimise impact to surrounding environment Minimise visual impacts 		
The constructor must control the influx of job seekers at the Dinaledi substation site and construction camp.			
 Fires Eskom ref: TRMSCAAC1 Rev 3 section 4.1.2 The contractors must provide and maintain a method statement for "fires", clearly indicating where and for what fires will be utilised plus details on the fuel to be utilised. Absolutely no burning of waste is permitted. Fires will only be allowed in facilities specially constructed for this purpose within fenced Contractor's camps. Wood, charcoal or anthracite are the only fuels permitted to be used for fires. The contractor must provide sufficient wood (fuel) for this purpose. Fires within the designated areas must be small in scale so as to prevent excessive smoke being released into the air. Heavy smoke may not be released into the air. 	 Minimise risk of veld fires Minimise destruction of natural fauna and flora Maintain safety on site Compensate for the outbreak of fires originating from the site where work is 	 No veld fires started by the contractor's workforce No claims from landowners for damages due to veld fires Method statement 	Monitor daily

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUE NCY OF ACTION
No wood is to be collected, chopped or felled for fires from private or public property as well as from no-go or sensitive areas within the site and any surrounding natural vegetation. The contractor should ensure that fire-fighting equipment is available on site. A designated smoking area must be demarcated, away from hazardous substance storage areas.	undertaken		
 Erosion and sedimentation All slopes that are disturbed during construction shall immediately be stabilised to prevent erosion. Where re-vegetation of slopes is undertaken, this shall be done in accordance with the landscape architect (or appointed landscaper). To reduce the loss of material by erosion, the contractor shall ensure that disturbance on site is kept to a minimum. The contractor shall be responsible for rehabilitating ALL eroded areas in such a way that the erosion potential is minimised after construction has been completed. All disturbed areas will require rehabilitation and must be mulched to encourage vegetation re-growth. Mulch used must be free from alien seed. These areas must be cordoned off so that vehicles or construction personnel cannot gain access to these areas. 	 Minimise erosion damage Minimise impeding the natural flow of water Minimise scarring of the soil surface and land features Minimise disturbance and loss of topsoil Re-growth of disturbed areas. 	 No erosion scars No loss of topsoil No interference with the natural flow of water No visible erosion scars once construction is completed The footprint has not exceeded the agreed boundaries All damaged areas successfully robabilitated 	As and when required

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUE NCY OF ACTION
 Fauna <u>All activities on site must comply with:</u> The regulations of the Animal Protection Act, 1962 (Act No. 71 of 1962). All construction workers must be informed that the intentional killing of any animal is not permitted as faunal species are a benefit to society. Poaching is illegal and it must be a condition of employment that any employee caught poaching will be dismissed. Employees must be trained on how to deal with fauna species as intentional killing will not be tolerated. In the case of a problem animal e.g. a large snake a specialist must be called in to safely relocate the animal if the EO or ECO is not able to. Environmental induction training must include safety with wild animals into the talk to all workers on site. Focus on animals such as snakes and other reptiles that often generate fear by telling the labour force how to move safely away and to whom they report the sighting of such animals. The labour force should also be informed where snakes most often hide so that they can be vigilant when lifting stones etc. Vegetation that is encountered in areas where the proposed upgrade of Substations will take place constitutes degraded regional vegetation and does not contain any floristic aspect of significance. 	 Minimise disturbance to animals Minimise interruption of breeding patterns of birds Minimise destruction of habitat 	 No complaints from Nature Conservation No litigation concerning applicable animal protection acts No measurable or visible signs of habitat destruction 	Monitor daily
Flora Local indigenous plants species found on site must be used in the landscaping of the site. Plants that are proclaimed as problem plants or noxious weeds must be excluded from the landscaping plan and these must be removed immediately, should they occur on site. These plants, as well as any other problem plants within a specific region as stipulated by a qualified and experienced botanist, must be included in an alien management programme for the site. Eradication must occur every 6 months.	 Minimal disturbance to vegetation where such vegetation does not interfere with construction in terms of approvals from the relevant 	 No litigation due to removal of vegetation without necessary permission No exotic plants used for landscaping 	As and when required

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUE NCY OF ACTION
A search and rescue operation must take place at the discretion of the ECO prior to site clearance activities. A nursery must be established should the need arise. The contractor must rehabilitate the construction camp and any other disturbed areas once construction activities have terminated. Compacted areas will be ripped and mulched in order to ensure recovery of the natural vegetation cover. A method statement must be provided and maintained by the contractor. Once construction is complete, rehabilitation of un-built areas must be undertaken in order to restore the aesthetic & ecological value of the area. It is recommended that a qualified landscape architect, qualified botanist and the ECO be consulted with regard to the most appropriate rehabilitation vegetation under the supervision of the ECO. No open fires shall be allowed on site under any circumstances, fires will only be permitted in adequate facility within the crew camp.	 authority Prevent litigation concerning removal of vegetation Encourage natural habitat fauna Minimise scarring of the soil surface and land features Minimise disturbance and loss of topsoil Minimise risk of veld fires Minimise risk of fauna and flora destruction 	 No visible erosion scars once construction is completed The footprint has not exceeded the agreed boundaries All damaged areas successfully rehabilitated No veld fires started by contractors work force No claims from landowners for damages due to veld fires Method statement 	
Heritage In terms of the National Heritage Act, 1999 (Act No. 25 of 1999), construction personnel must be alert and must inform the local Council should they come across any findings of heritage resources within 24 hours if the area has been removed. Should any archaeological artefacts be exposed 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.	 Limit the destruction of the country's heritage resources The preservation and appropriate management of new 	 No destruction of or damage to known archaeological sites 	Monitor Daily

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUE NCY OF ACTION
 Under no circumstances shall archaeological artefacts be removed, destroyed or interfered. Any archaeological sites exposed during demolition or construction activities must not be disturbed prior to authorisation by the South African Heritage Resources Agency or the appropriate provincial heritage resource agency. No building, structure or fitting on the site older than 60 years shall be removed or demolished without the appropriate license from SAHPA 	archaeological finds should these be discovered during construction.		
 No-go / sensitive areas Eskom Ref: TRMSCAAC1 Rev 3 regarding "no entry" 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 vehicular movement is permitted outside of the substation designated area. 	 Minimise the potential for the spread of the construction footprint Reduce loss of fauna and flora habitat Minimise the potential for loss of protected and or endangered fauna and flora 	 No sign of movement through "no go" areas. Containment of footprint 	Monitor daily

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUE NCY OF ACTION
Access route/haul roads Eskom Ref: TRMSCAAC1 Rev 3 regarding "no entry" and sections 4.4 and 4.6 regarding new access roads ad diversion berms. Planning of any new access routes must be done in conjunction between the contractor, Eskom and the land owner. 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.	 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, monitor daily
Any work or access near or in a permanent drainage system may have implications in terms of the National Water Act, 1998 (Act No. 36 of 1998), and therefore may well require application for a water use licence.			
 Crime, safety and security (Eskom ref: TPL 41-142 safety earthing of capacitor banks) Construction procedures must make provision for earthing requirements. No site staff, other than security personnel and skeleton staff shall be housed on site unless otherwise stipulated in the Environmental authorisation. Security personnel and skeleton staff shall be supplied with adequate protective clothing, ablution facilities, water and refuse collection facilities, facilities for cooking and heating so that open fires are not necessary. A boundary fence will serve to prevent access to the site, for public safety and security reasons. The access to the site must be controlled so as to restrict unauthorised personnel from entering the site. The workers on site must retain some means of identification. The ECO and the contractor are responsible for ensuring 	 Reduce the risk of potential incidences Minimise the potential impact on the environment 	No incidences reported	Monitor daily

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUE NCY OF ACTION
that only authorised personnel are on site at all times.			
The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the National Building Regulations. (Eskom ref: TSP 41-691, page 2 of 77 and EPL 32-94).			
The contractor shall ensure that all emergency procedures are in place prior to commencing work. Emergency procedures shall include (but not be limited to) fire, spills, contamination of the ground, accidents to employees, use of hazardous substances and materials, etc.			
The contractor shall ensure that lists of all emergency telephone numbers / contact persons are kept up to date and that all numbers and names are posted at relevant locations throughout the construction site.			
The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. The contact details of this emergency centre, as well as the police, fire departments and ambulance services must be available at prominent locations around the construction site and the construction crew camps.			
Geotechnical	Minimise potential	 No visible signs of 	As and
All trenches and excavation works must be properly backfilled and compacted	structural faults	backfill	when
according to specifications given in sub-clause 5.2.4. Of SABS 1200DA.	Minimise trench collapse	trench collapse	required
Hydrology	Minimise pollution	No visible signs of As and	As and
The PM or the ECO must assess whether regular water sampling of surface and /or ground water resources within the immediate and/or surrounding environment are necessary. Should this be the case, baseline data from sampling should be obtained relevant to the activity and sensitivity of the area. Regular sampling must be carried out to determine deviations from the baseline data. It is not anticipated however that it will be necessary to monitor surface or groundwater resources, as there are none of these in close proximity to Dinaledi Substation site that would be impacted upon	of soil, surface and ground water resources in the immediate and surrounding environments • Minimise	 pollution No signs of siltation of water courses No visible erosion scaring once 	when required, monitor daily
MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUE NCY OF ACTION
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during construction. Increased run-off during construction must be managed using berms and other suitable structures as required to ensure flow velocities are reduced. Storm water, wherever possible, should be allowed to soak into the land in the area on which the water fell. In the event of pollution caused as a result of construction activities, the contractor, according to section 20 of the National Water Act , 1998 (Act No. 36 of 1998) shall be responsible for all costs incurred by organisations called to assist in pollution control and/or to clean up polluted areas. Approval must be obtained from DWEA for any activities that require authorisation in terms of Section 39 of the National Water Act, 1998 (Act No. 36 of 1998). A relevant specialist must be consulted prior to the demarcation of drainage lines and wetlands. No vehicular access is allowed in permanently wet areas. No equipment shall be used which may cause irreparable damage to wet areas. The contractor shall use alterative methods of construction in such areas. Soil The contractor must provide and maintain a method statement for "management of topsoil". Topsoil must be stripped from all areas that are to be utilized during the construction period and where permanent structures and access is required. These areas will include the permanent works, stockpiles, access roads, construction camps and letdown areas. Topsoil shall be stripped after search and rescue (Fauna and Flora) has been conducted and clearing of woody vegetation and before excavation or construction commences.	 impeding the natural flow of water Minimise the impact on natural water flow dynamics Minimise scarring of the soil surface and land features Minimise damage to river and stream embankments 	 construction is completed Minimum loss of topsoil No access roads through river and stream banks No visible erosion scars on embankments once construction is completed No erosion or siltation downstream No deviation from baseline data during regular sampling 	

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUE NCY OF ACTION
Topsoil must be deemed to be the top layer of soil containing organic material, nutrients and plant grass seed. For this reason it is an extremely valuable resource for the rehabilitation and vegetation of disturbed areas. Ripping shall be done to a depth of 250 mm in two directions at right angles. Topsoil shall be placed in the same soil zone from which it had been stripped. At the beginning of the construction phase, topsoil removed for vegetation clearance must be stripped to a minimum depth of 150 mm and stockpiled on the demarcated topsoil stockpile areas. All topsoil must be removed and stockpiled on the site. However, the use of topsoil for rehabilitation contaminated by the seed of alien vegetation (e.g. blackjacks, etc.) must not be permitted unless a programme to germinate the seed and eradicate the seedlings is drawn up and approved, or some other mitigatory feature is found. This must be approved by the ECO. Single handling is recommended. Stock piles must not be higher than 2m to avoid compaction. Dust suppression is necessary for stockpiles older than a month – with either water or a biodegradable chemical binding agent. Backfill will require contouring to ensure that it blends in with the surrounding environment. Remediated slopes should be graded to preferably 1:2 Slopes can then be capped with topsoil. This requires a minimum layer of 100 mm in most areas.	 Minimise scaring of the soil surface and land features Minimise disturbance and loss of soil Minimise construction footprint Minimise sedimentation of nearby drainage lines Maintain the integrity of topsoil's for future landscaping and rehabilitation Containment of invasive plant growth 	 No visible erosion scars once construction is completed The footprint has not exceeded the agreed site in terms of EA etc. Minimal invasive weed growth No signs of sedimentation and erosion Disturbed surfaces to be rehabilitated must be ripped and the area must be backfilled with excavated material from the site. Method statement 	Daily

5.3 TABLE 5: OPERATIONAL PHASE

Phase of development	OPERATIONAL
Impact / issue	General

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF ACTION
 Storm water Management Storm water, wherever possible, must be allowed to soak into the land in the area on which the water has been discharged. The storm water system, especially the discharge points, must be inspected and damaged areas must be repaired if required. Where vegetation has been utilised as part of the storm water management system, it is important to ensure that the vegetation is maintained and does not die, as this is essential for effective infiltration. For all maintenance undertaken, reference must be made to recommendations in the engineer's reports and / or the approved storm water management plan. All maintenance activities must be monitored to ensure that no environmental damage occurs. All damage must be mitigated immediately. 	 Minimise pollution of soil, surface and ground water resources Minimise the potential loss of topsoil Minimise the potential of flooding of the development, or its neighbouring properties 	 No evidence of pollution at the discharge points No evidence of silt build-up at the discharge points No complaints from I & AP's 	As and when required. Monitor seasonally.

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF
 ATMOSPHERIC POLLUTION Air pollution All forms of dust/air pollution must be managed in terms of the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965), this includes the control of noxious and offensive gases, smoke, dust and vehicular emissions Under no circumstances may heavy smoke be released into the air. Light pollution Night time light sources must be directed away from, conservation areas, naturally vegetated areas, as this may be the cause of ecological disturbance. Noise pollution Noise levels shall be kept within acceptable limits, these are determined in terms of the relevant local by laws. 	 Reduce visual impact Minimise chances of transgression of the acts controlling pollution 	 No complaints from surrounding residents and businesses 	Monitor daily
Traffic management Access to and from the capacitor banks will take place strictly along the service road.	 Maintenance of Access road 	 No complaints from surrounding residents and businesses 	Monitored continually

MITIGATION MEASURE	MANAGEMENT OBJECTIVES	MEASURABLE TARGETS	FREQUENCY OF
Landscape maintenance Alien invasive plant species must be removed for disposal at a registered organic waste transfer facility.	 Reduce visual impact 	EMP pro forma documentation	As and when required Monitor seasonally
Infrastructure maintenance Eskom ref: TSP 41-691; TPL 41-142 All Capacitors must be maintained in accordance with engineer's specifications.	 Reduce visual impact Minimise pollution of soil, surface and ground water resources 	 No complaints from surrounding residents and businesses No pollution of the environment 	As and when required. Monitor as part of a monthly maintenance inspection/schedule

6. OUTLINE OF ENVIRONMENTAL AUTHORISATION CONDITIONS

The following conditions are contained in the environmental authorisation issued by the National Department of Environment Affairs and Tourism on 27 March 2008 for the proposed Medupi-Spitskop-Dinaledi 2x400kV powerline. It is imperative that all of these conditions, in addition to the stipulations made in this EMP, be met at the appropriate times by the holder of the authorization and extended project team, in order for the activities to be carried out in a manner that is compliant with the conditions of the authorisation:

- 1. The project applicant (Eskom transmission) must appoint a suitably qualified Environmental Control Officer (ECO) that will have the responsibility of implementing the approved EMP on site;
 - a. The ECO shall be appointed, at lease one (1) month, before the start of the construction period;
 - b. The ECO shall submit quarterly environmental compliance reports for submission to the Director: Environmental Impact Evaluation at DEAT;
 - c. The ECO shall ensure that disturbed areas are rehabilitated as prescribed;
 - d. The ECO shall maintain a site diary copies of all reports submitted to the DEAT and a public complaints register on the site.
 - e. The ECO shall ensure that ALL staff receives Environmental Induction Training with specific focus on the conditions of the ROD and EMP, records of such training must be kept on site for audit purposes.
- 2. Compliance with the approved EMP will form part of all contractor's tender documentation and will be endorsed contractually;
- 3. Measures for the monitoring and maintenance of access roads leading to individual construction areas and their subsequent rehabilitation after construction activities are completed.
- 4. A 14 days written notice must be given to DEAT that the activity will commence. Such notice shall made clear reference to the Dinaledi substation site location details and reference number: **12**/**12**/**20**/**794**
- 5. Similarly, 14 days written notice must be given to DEAT that the activity's operational phase will commence;
- 6. There must be control measures to prevent erosion where areas are cleared for access and construction as well as on the existing access road.

- 7. Measures for the influx of job seekers at the substation sites and line construction camp site along the servitude.
- 8. Excavated materials need to be stockpiled in layers and protected by berms to prevent erosion;
- 9. The placement of flow retarding barriers must occur in consultation with the ECO and as part of an overall storm water management system during the construction phase of the activities;
- 10. Refuelling must take place in well demarcated areas over suitable drip trays;
- 11. The ECO must ensure that all site staff receives Environmental Induction Training with specific focus on the conditions of the ROD and EMP to be adhere to. Records of such training shall be kept on site for auditing purposes.
- 12. Workers must undergo induction training to ensure that they are prepared for rapid clean-up procedures;
- 13. All conditions relating to Heritage Resources in the EMP need to be strictly adhered to;
- 14. The developer must make themselves aware of, and comply with, the requirements of the National Environmental Management: Biodiversity Act (Act 10 of 2004) as it pertains to the protection of indigenous species;
- 15. The holder of the environmental authorisation issued by DEAT, is not negated from complying with any other statutory requirements that may be applicable to the undertaking of the construction of the two substations; and
- 16. Any non-compliance by the developer with respect to the aforementioned conditions and stipulations of the EMP must be reported to DEAT.
- 17. Any complaints from the public during construction must be attended to as soon as possible to the satisfaction of the parties concerned. A complaint register must be kept up to date and shall be produced upon request.

7. SUMMARY OF LANDOWNER DETAILS AND CONDITIONS

All the construction activities will be limited within Eskom property and if a Landowner is somehow affected then, negotiations for any reason shall be between Eskom, the Landowner and the Contractor. NO verbal agreements shall be made. All agreements shall be recorded properly and all parties shall co-sign the documentation. It is proposed that a photographic record of access roads be kept. This will then be available should any claims be instituted by any Landowners. Any claims instituted by the Landowners shall be investigated and treated promptly. Unnecessary delays should be avoided at all costs.

The Landowners shall always be kept informed about any changes to the construction programme should they be involved. If the Environmental Control Officer is not on site the Contractor's Environmental Control Officer should keep the Landowners informed. The contact numbers of the Contractor's ECO officer and the Eskom ECO shall be made available to the Landowners. This will ensure open channels of communication and prompt response to queries and claims.

Eskom shall ensure that all agreements reached with the Landowner are fulfilled, and that such areas be rehabilitated once construction is completed. Should any claim be instituted against Eskom, due to the actions of the Contractor at a batching plant site, Eskom shall hold the Contractor fully responsible for the claim until such time that the Contractor can prove otherwise with the necessary documentation.

8. GENERAL

8.1. PHYSICAL ACCESS PLAN

The existing Dinaledi site has existing access roads, but should they be inadequate then the Contractor (CECO), in conjunction with the ECO, shall draft a physical access plan. The physical access plan shall allow for the installation of concrete pipes and drifts where such structures may be needed to facilitate access. The Environmental Control Officer in conjunction with the Contract Manager shall use discretion as to what special measures will be required to ensure access.

8.2. AWARENESS AND TRAINING OF CONTRACTOR

All contractors are required to undergo environmental awareness training prior to the commencement of construction activities at Dinaledi substation site. Such training should be given by the appointed ECO and should also include refresher training for all contractors every 6 months. All contractors and there staff should also receive the necessary training to prepare them for emergency spillage situations on site.

8.3. SITE DOCUMENTATION/MONITORING

The standard Eskom site documentation shall be used to keep records on site. All documents shall be kept on site and be available for monitoring and auditing purposes. Site inspections by an Environmental Audit Team may require access to this documentation for auditing purposes. The documentation shall be signed by all parties to ensure that such documents are legitimate. Regular monitoring of all site works by the Environmental Control Officer is imperative to ensure that all problems encountered are solved punctually and amicably. When the Environmental Control Officer is not available, the Contract Manager/Site Supervisor shall keep abreast of all works to ensure no problems arise.

Two-weekly reports shall be forwarded to the appointed Transmission Environmental Advisor with all information relating to environmental matters. The following **Key Performance Indicators** must be reported on a two-weekly basis:

- 1. Complaints received from Landowners and actions taken.
- 2. Environmental incidents, such as oil spills, concrete spills, etc. and actions taken (litigation excluded).
- 3. Incidents possibly leading to litigation and legal contraventions.
- 4. Environmental damage that needs rehabilitation measures to be taken.

The following documentation shall be kept on site:

- Access negotiations and physical access plan.
- Complaints register.
- Site daily dairy.

- Records of all remediation / rehabilitation activities.
- Copy of the Environmental Management Programme (EMP) file.

8.4. AUDITING

During the construction period at least two (2) Environmental Audits (EA) shall be conducted to determine compliance with the recommendations of the EIA, EMP and conditions of the Record of Decision (RoD). These will be internal audits or external by DEAT or the ISO14001 auditors or combined audits. An Environmental Audit programme will be established between the ECO and the PM prior to the commencement of construction of construction activities on either site.

9. CONCLUSION

The conditions contained in this EMP, in conjunction with specific conditions contained in the environmental authorisation for the proposed Medupi-Spitskop-Dinaledi 2 X 400kV transmission powerlines, will ensure sufficient mitigation of potential environmental impacts, such that no significant environmental damage will result from the activities.

It is crucial for all recommendations made in this EMP to be appropriately implemented on site during the construction and operation of the Dinaledi substation. Compliance monitoring by an appropriately qualified ECO will serve as a means of verifying the degree to which the EMP is being implemented on site.

DECLARATION OF UNDERSTANDING BY THE DEVELOPER

I, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Plan for:

Contract

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed:

Place:

|--|

Witness 1: _	
--------------	--

Witness2: _____

DECLARATION OF UNDERSTANDING BY THE ENGINEER

l, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Plan for:

Contract

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1:	
------------	--

Witness2: _____

DECLARATION OF UNDERSTANDING BY THE CONTRACTOR

l, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Plan for:

Contract

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1:	
------------	--

Witness2:	

METHOD STATEMENT: Solid Waste Management

CONTRACT: DATE:

WHAT WORK IS TO BE UNDERTAKEN? [give a brief description of the works to be undertaken on site that will generate waste (hazardous and non-hazardous wastes)]: * Note: please attach extra pages if more space is required.

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

METHOD STATEMENT: Solid Waste Management (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date: End Date:

HOW IS WASTE TO BE MANAGED ON SITE? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

DECLARATIONS for Method Statement Solid Waste Management (contd.)

(SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:._____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:.____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

(Print name)

(Print name)

Dated: _____

Crew Camps and Construction Lay Down Areas

CONTRACT: DATE:

WHAT CREW CAMPS AND CONSTRUCTION LAY DOWN AREAS ARE REQUIRED ON SITE DURING CONSTRUCTION? (give a brief description of these): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE CREW CAMPS AND CONSTRUCTION LAY DOWN AREAS TO BE LOCATED? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

Crew Camps and Construction Lay Down Areas (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:..... End Date:....

HOW ARE CREW CAMPS AND CONSTRUCTION LAY DOWN AREAS TO BE MANAGED? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

DECLARATIONS for Method Statement

Crew Camps and Construction Lay Down Areas (contd.) (SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:._____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

(Print name)

(Print name)

Dated: _____

Workshop and Maintenance/Cleaning of Plant

CONTRACT

DATE:....

WHAT WORK IS TO BE UNDERTAKEN? (give a brief description of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE WORKSHOPS AND CLEANING BAYS TO BE LOCATED? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

Workshop and Maintenance/Cleaning of Plant (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:..... End Date:....

HOW ARE WORKSHOPS AND PLANT MAINTENANCE/CLEANING TO BE MANAGED DURING CONSTRUCTION? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

DECLARATIONS for Method Statement

Workshop and Maintenance/Cleaning of Plant (contd.) (SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:._____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

(Print name)

2) CONTRACTOR

Dated:.

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated: _____

METHOD STATEMENT: Cement and Concrete Batching

WHAT WORK IS TO BE UNDERTAKEN? (give a brief description of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

Cement and Concrete Batching (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date: End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

Dinaledi 2x 400kV feeder bays and Substation Extension

DECLARATIONS for Method Statement

Cement and Concrete Batching (contd.) (SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

Dated:

(Print name)

61

(Print name)

METHOD STATEMENT: Dust Control

CONTRACT: DATE:

WHAT WORK IS TO BE UNDERTAKEN ON SITE THAT COULD GENERATE DUST? (give a brief description of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

METHOD STATEMENT: Duct Control (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date: End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN SO AS TO MINIMISE AND CONTROL DUST

GENERATION ON SITE? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

Dinaledi 2x 400kV feeder bays and Substation Extension

DECLARATIONS for Method Statement

Dust Control (contd.) (SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:.

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

Dated:._____

Dated:

(Print name)

(Print name)

Hydrocarbon and Emergency Spill Procedure

CONTRACT: DATE:

WHAT HAZARDOUS SUBSTANCES (INCL. FUELS) ARE TO BE STORED ON SITE? (give a brief description of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE THESE SUBSTANCES TO BE STORED ON SITE? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

Hydrocarbon and Emergency Spill Procedures (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:....

End Date:....

HOW ARE HAZARDOUS SUBSTANCES TO BE MANAGED TO AVOID SPILLAGES AND WHAT EMERGENCY PROCEDURES ARE TO BE IMPLEMENTED IN CASE OF A SPILLAGE? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

Hydrocarbon and Emergency Spill Procedures (contd.) (SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

Dated:

(Print name)

(Print name)

(Print name)

Diesel Tanks and Re-fuelling Procedures

CONTRACT: DATE:

WHAT WORK IS TO BE UNDERTAKEN? (give a brief description of the number and capacity of diesel tanks to be kept on site): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

Diesel Tanks and Re-fuelling Procedures (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date: End Date:

HOW ARE DIESEL TANKS TO BE MANAGED AND RE-FUELLING TO BE UNDERTAKEN? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

Diesel Tanks and Re-fuelling Procedure (contd.) (SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:._____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

(Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated: _____

Sourcing, Excavating, Transporting and Dumping of Fill and Spoil Material

WHAT WORK IS TO BE UNDERTAKEN? (give a brief description of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

Sourcing, Excavating, Transporting and Dumping of Fill and Spoil Material (Contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:.... End Date:....

HOW ARE THE WORKS TO BE UNDERTAKEN? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required
DECLARATIONS for Method Statement

Sourcing, Excavating, Transporting and Dumping of Fill and Spoil Material (Contd.)

(SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:._____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

Dated: _____

(Print name)

(Print name)

(Print name)

(Print nam

Topsoil Management

CONTRACT:......

DATE:....

WHAT WORK IS TO BE UNDERTAKEN? (give a brief description of the works to be undertaken that require topsoil to be stripped): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

Topsoil Management (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:.... End Date:....

HOW ARE TOPSOIL STOCKPILES TO BE MANAGED? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

DECLARATIONS for Method Statement

Topsoil Management (contd.) (SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:._____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

Dated:

(Print name)

(Print name)

Fire Management

CONTRACT: DATE:

WHAT WORK IS TO BE UNDERTAKEN? (give a brief description of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

Fire Management (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date: End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

DECLARATIONS for Method Statement

Fire Management (contd.) (SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:._____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated:

(Print name)

Rehabilitation of Crew Camps and Other Disturbed Areas

CONTRACT: DATE:

WHAT WORK IS TO BE UNDERTAKEN? (give a brief description of works to be undertaken that may result in the need for rehabilitation of the affected areas): * Note: please attach extra pages if more space is required

*Insert additional pages as required

WHERE ARE THE WORKS TO BE UNDERTAKEN? (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

Rehabilitation of Crew Camps and Other Disturbed Areas (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:.... End Date:....

HOW ARE THE REHABILITATION WORKS TO BE UNDERTAKEN? (provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

Rehabilitation of Crew Camps and Other Disturbed Areas (contd.)

(SAMPLE)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

Dated:._____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

(Signed)

(Print name)

(Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

(Signed)

(Print name)

Dated:

ANNEXURE 5 (SAMPLE)

INCIDENT AND ENVIRONMENTAL LOG

ENVIRONMENTAL INCIDENT LOG				
Date	Env. Condition	Comments (Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)	Corrective Action Taken (Give details and attach documentation as far as possible)	Signature