**ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE PROPOSED CONSTRUCTION OF TOURISM FACILITY IN THE FORM OF AMASWAZI LODGE AND CONFERENCE FACILITY AND OTHER RELATED BUILDINGS, ON PORTION 16 (OF 4) OF THE FARM KLIPPLAAT DRIFT NO. 1009, WITHIN UMTSHEZI LOCAL MUNICIPALITY AND UTHUKELA DISTRICT MUNICIPALITY, ESCOURT, KWAZULU-NATAL.**

 **ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)**

Report prepared for

 **AMASWAZI TRUST**

Prepared by

#  MONDLI CONSULTING SERVICES / LLBT PROJECTS

P O Box 22536

 Glenashley

 4022

 Tel 0826799841/ (031) 572 5647

 JUNE 2016

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# **APPENDIXES**

APPENDIX 1 - MAP of proposed activity

**A. ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) WHO PREPARED THE ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr):**

**1. (1) An EMPr must comply with section 24N of the Act and include -**

**(a) Details of -**

**(i) the EAP who prepared the report:**

|  |  |
| --- | --- |
| Business name of EAP: | **Mondli Consulting Services**  |
| Physical address: | **6 Joseph Avenue, New Era House, Suite 12, Durban North** |
| Postal address: | **P O Box 22536, Glenashley** |
| Postal code: | **4022** | **Cell:** | **0826799841** |
| Telephone: | **0826799841** | **Fax:** | **(031) 5725647** |
| E-mail: | **mondlib@webmail.co.za** |  |  |

 **(ii) The expertise of the EAP (including curriculum vitae)**

|  |  |  |  |
| --- | --- | --- | --- |
| Name of representative of the EAP | Education qualifications | Professional affiliations | Experience at environmental assessments (yrs) |
| **M. Mthembu** | **Diploma in Nature Conservation****Masters Degree (Environmental Management Dissertation)****Bachelor of Laws (LLB)** | **Society of South African Geographers** (Membership No. 28/09) | **Has been involved in environmental and conservation field for over 20 yrs.****Conducted EIAs for over 12 years including Strategic Env. Assessment. Has been involved in the review and commenting on development projects impacting on the environment.** |

 **(B) A DETAILED DESCRIPTION OF THE ASPECTS OF THE ACTIVITY THAT ARE COVERED BY THE EMPr AS IDENTIFIED BY THE PROJECT DESCRIPTION;**

The project entails the construction of a tourism and hospitality facility in the form of Amaswazi lodge and conference centre with 21 units sleeping up to 42 people, comprising of a wedding facility / hall, chapel, dining room / entertainment room, gymnasium, spa, swimming pool, car park, office, kitchen / restaurant, staff accommodation, laundry, storeroom and sleeping rooms.

The draft environmental management programme covers mainly aspects that directly relates to the construction of Amaswazi Lodge and Conference Centre, and related buildings and infrastructure within the premises of the existing Klipplaat Drift 1009 Farm.

These are aspects like environmental awareness, soil erosion and contamination, surface water pollution, air pollution during construction, safeguard against pollution of the stream on the eastern side of the site, stockpiling, location of the construction camp, littering and solid waste, concrete mixing, alien plants, noise, traffic management, health and safety, visual impact, stormwater and traffic issues. These aspects are described and covered in detail throughout the EMPr.

**(C) A MAP AT AN APPROPRIATE SCALE WHICH SUPERIMPOSES THE PROPOSED ACTIVITY, ITS ASSOCIATED STRUCTURES, AND INFRASTRUCTRE ON THE ENVIRONMENTAL SENSITIVITIES OF THE PREFERED SITE, INDICATING ANY AREAS THAT SHOULD BE AVOIDED, INCLUDING BUFFERES;**

See the attached Layout Plan and site Map as attached on the on the Basic Assessment Report.

**(D) A DESCRIPTION OF THE IMPACT MANAGEMENT OBJECTIVES, INLCUDING MANAGEMENT STATEMENTS, IDENTIFYING THE IMPACTS AND RISKS THAT NEED TO BE AVOIDED, MANAGED AND MITIGATED AS IDENTIFIED THROUGH THE ENVIRONMENTAL IMPACT ASSESSMSNET PROCESS FOR ALL PHASES OF THE DEVELOPMENT INLCULDING -**

The main aim and objective of the monitoring exercise is to ensure the appraisal of environmental performance in line with the Environmental Authorisation (EA), EMPr, EIA Regulations and National Environmental Management Act (NEMA) No. 107 of 1998 as amended. In this instance the Department of Economic Development, Tourism and Environmental Affairs is responsible for ensuring the compliance to NEMA.It is also to provide objective feedback to Amaswazi Trust and implementing contractors and subcontractors by making appropriate recommendations for remedial interventions where appropriate.

The monitoring deals with conformance and non conformance measured against EMPr and EA. Any non-compliance observed during the construction period will be followed by an immediate remedial intervention. The environmental audit and monitoring will primarily focus on evaluating the measure of compliance with statutory requirements within the project site.

The identified impacts and risks will be managed and mitigated throughout the following phases of development:

(i) planning and design;

*Impact*

Movement of cars, congestion and overcrowding by project technicians.

(ii) Pre-construction activities;

**Environmental awareness and partnerships**

*Impact*

Ignorance of the EMPr and EA principles resulting in environmental degradation.

*Impact*

Non-compliance to the EMPr and EA documents resulting in environmental degradation.

*Impact*

Ignorance about environmental issues resulting in degradation of the receiving environment.

(iii) construction activities;

1. **The storage facility**

*Impact*

Environmental pollution that may result in soil contamination and environmental pollution in case of leakages and spillages.

1. **Litter and Solid waste**

*Impact*

Environmental pollution.

 **(c) Concrete mixing**

*Impact*

Soil contamination.

**(d) Chemical materials**

*Impact*

Environmental pollution relating to soil and water.

**(e) Management of water, sediments and stormwater**

*Impact*

Soil erosion and water pollution.

**(f) Air pollution**

*Impact*

Polluted air and nuisance.

 **(g) Noise control**

*Impact*

Noise pollution to the neighbouring households.

 **(h) Earthworks and Soil**

*Impact*

Soil erosion and sedimentation. Invader plant species growing during and after earthworks.

 **(i) Vegetation / Groundcover / Alien plants eradication**

*Impact*

Soil erosion.

Impact

Alien plants invading the site.

 **(j) Health and safety**

*Impact*

Unhealthy and unsafe environment.

 **(k) Construction site & camp location**

*Impact*

The existing structures on site will serve as a construction camp.

 **(l) Traffic Management**

*Impact*

Increased traffic flow in the vicinity of the proposed site.

 **(m) Heritage impact**

*Impact*

Impact on heritage resources.

 **(n) Visual impact**

*Impact*

Nuisance to the neighbourhood.

(iv) rehabilitation of the environment after construction and where applicable post closure; and

**(1) Clearing construction site**

*Impact*

Environmental and site pollution.

**(2) Signing off**

*Impact*

Environmental pollution and degradation left behind after construction.

**(3) Landscaping**

*Impact*

Soil erosion and sedimentation.

*Impact*

Possibility of soil contamination.

 (v) where relevant, operation activities;

*Impact*

Noise pollution.

**(E) A DESCRIPTION AND IDENTIFICATION OF IMPACT MANAGEMENT OUTCOMES REQUIRED FOR THE ASPECTS CONTEMPLATED IN PARAGRAPH (D);**

(i) planning and design;

*Impact*

Some of the identified impacts during this phase include movement of cars and overcrowding in an area with rural tranquility.

Traffic congestion as technicians descends on the site for various technical assessments e.g. surveyors, architects, environmentalists and so forth. Ignorance about environmental issues is regarded as a negative impact with regard to the project.

*Mitigation*

This EMPr will be discussed with stakeholders (Amaswazi Trust, Umtshezi Local Municipality, implementing contractors) to ensure that awareness of events and activities that have a negative impact on the environment are understood. The project planners are expected to be considerate and ensure that their activities are not detrimental to both social and physical environment. The environmentalist had an initial meeting with the architecture to provide environmental perspective to the designs and layout plan.

The technicians working on site must be sensitized about possible environmental impacts, in order to be considerate at all times when working on site.

The project must ensure sustainable development in balancing social, economic and environmental aspects.

*Responsible party*

Applicant and the Environmental Control Officer (ECO).

(ii) Pre-construction activities;

**Environmental awareness and partnerships**

*Impact*

Ignorance of the EMPr and EA principles; resulting in environmental degradation.

*Mitigation*

This EMPr will be discussed with stakeholders to ensure that awareness of activities that have a negative impact on the environment are clarified. In terms of this project site the critical aspects will be around soil erosion and contamination, surface water pollution, air pollution during construction, safeguard against pollution of the stream on the eastern side of the site, stockpiling, location of the construction camp, littering and solid waste, concrete mixing, alien plants, noise, traffic management, health and safety, visual impact, stormwater and traffic issues.

As per the prescriptions of the Environmental Authorization (EA) its contents will be communicated to all the registered interested and affected stakeholders within 12 days of the Department’s decision.

The contents will further be discussed with all stakeholders in terms of the project to ensure they are understood, and the conditions put by the Department of Economic Development, Tourism and Environmental Affairs (DETA) are adhered to. Compliance will be emphasized to the developer, and the Compliance section of DEDTEA is also expected to do inspections, as they deem appropriate and necessary.

*Responsible party*

ECO and the Applicant

*Impact*

Non compliance to the EMPr and EA documents; resulting in environmental degradation.

*Mitigation*

* The EMPr will be signed by the main contractor on site.
* All stakeholders including employees of the contractors on site need to be familiar with the contents of the EMPr and the construction protocol.
* The EMPr document must be available on site at all times.

*Impact*

Ignorance about environmental issues resulting in degradation of the receiving environment.

*Mitigation*

The building contractor and all personnel that will be involved in the construction phase of this project will be taken through a crash course on environmental awareness, EMPr and conditions of authorization.

* The main contractor and relevant stakeholders will have to be familiar with the contents of the Environmental Authorization (EA), and this Environmental Management Programme (EMPr) to be able to comply with the aforementioned document during all project phases.

*Responsible party*

ECO and the Applicant.

(iii) construction activities;

**(a) The storage facility**

*Impact*

Environmental pollution that may result in soil contamination and environmental pollution in case of leakages and spills.

*Mitigation*

* The storage facility must be able to prevent direct sun which may cause certain materials to explode, and rain from flushing materials that may later contaminate the soil and water. The storage facility will also help in safe storage preventing accidental falling of uncontained materials and liquids that may not have been sealed safely.
* The storage facility must be roofed and properly paved to store all the contractor's tools and materials during construction phase.
* The liquid materials must be tightly closed and sealed to prevent spillage in case of accidental falling.

*Responsible party*

Site Engineer / Contractor / Safety Officer / ECO.

**(b) Solid waste** **and littering**

*Impact*

The possible pollution of the watercourse due to litter.

*Mitigation*

* Solid waste must be disposed of in an environmentally acceptable manner during construction to minimize pollution of the environment.
* Solid waste generated from this development must be disposed of in an appropriate manner. Rubbish drums and refuse plastic bags must be made available for litter during the day, to be cleared and disposed of at the municipal disposal site at appropriate intervals as advised by the Environmental Control Officer.
* All construction spoil must be disposed of at the municipal disposal site.
* No burning of refuse must take place on site.

*Responsible party*

Site Engineer / Contractor and Applicant.

**(c) Concrete mixing**

*Impact*

Soil contamination.

*Mitigation*

* All concrete mixing that is “not ready mixed” must be carried out on wooden boards in a lined bunded area so that cement slurry does not escape out of the area. This will prevent contamination of the soil.
* At the end of each day's construction operations cement spoil and rubble must be collected and placed in appropriate containers for later disposal.

*Responsible party*

Site Engineer / Contractor.

**(d) Chemical materials**

*Impact*

Environmental pollution of soil and water.

*Mitigation*

* Chemical materials like paint, turpentine, solvents, cement and the like must be stored appropriately in line with the provisions of Hazardous Substances Act (Act 15 of 1973).
* These must not pose risk to the surrounding environment, and such storage areas must be located outside of the 1:100 year floodline of a river / watercourse or such storage must not be closer than 150 metres from the water course / river.
* Access to these areas must be controlled, and temporary bunds must be constructed around chemical storage areas to contain possible spillages.
* Oil leaks from heavy machinery and vehicles must not be allowed to contaminate soil and the environment. This must be done by properly servicing the machinery to prevent unnecessary oil leaks, as well as preventing any servicing of vehicles and machinery on site.
* In case of oil leak that contaminate the soil, such soil must be removed and disposed of appropriately as advised by the ECO.

*Responsible party*

Site Engineer / Contractor / ECO / Safety Officer.

**(e) Management of water, sediments and stormwater**

*Impact*

Soil erosion and surface water pollution.

*Mitigation*

* Storm water must be in line with the design and adhere to all Engineers stipulations and the Local Authority.
* After construction, the site must be graded, paved or landscaped to ensure free flow of runoff and to prevent ponding of water.

*Responsible party*

Site Engineer / Contractor and the Applicant.

**(f) Air pollution**

*Impact*

Air pollution.

*Mitigation*

* It is important that the requirements of the atmospheric Pollution Prevention Act (APA) (Act No. 45 of 1965) and National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) be adhered to.
* Construction operations especially during earthworks, may create larger amounts of atmospheric dust that may cause a nuisance to the neighbourhood, and air pollution in general.
* Dust from the construction operations must be minimized by regularly spraying with water during construction.
* Dust from demolitions, if applicable, must be controlled.

*Responsible party*

The Applicant and the Contractor / Site Engineer.

**(g) Noise control**

*Impact*

Noise pollution to the neighbourhood.

*Mitigation*

* Noise Control Regulations (Regulations 154, 10 January 1992) of the Environmental Conservation Act (Act No. 73 0f 1989) must be adhered to.
* Construction operations must be restricted to daylight period, Monday to Saturday, and must adhere to legally stipulated hours (7.00 – 18.00).
* The use of equipment that is less noisy must be encouraged.
* Workers using noisy equipment must be informed about the need to minimize noise and its impact on the general surrounding environment.
* The neighbours must be informed about noise possibilities.

*Responsible party*

The Applicant and Site Engineer / Contractor.

**(h) Earthworks and Soil**

*Impact*

Soil erosion and sedimentation.

*Mitigation*

* Soil generated during any digging on site must be backfilled immediately or at least within 48 hours.
* No soil must be left in heaps after the construction.
* Any excessive soil that was unable to be used or backfilled will have to be disposed in any other environmental acceptable manner as per the advice of the ECO.

*Responsible party*

Site Engineer / Contractor and Applicant / ECO.

**(i) Vegetation / Groundcover**

*Impact*

Soil erosion.

*Mitigation*

* Should any area be left bare during construction, it must be planted with suitable ground cover to prevent possible soil erosion.
* It is critical to keep and maintain the grass cover after all earthworks operations.

*Responsible party*

The Applicant.

**(j) Health and safety**

*Impact*

Unhealthy and unsafe environment.

*Mitigation*

* All requirements of the Health and Safety Act (Act No. 85 of 1993) must be complied with.
* Contractors must make adequate provision for temporary chemical toilets to be used by their employees if necessary.
* In line with Health Requirements the mobile toilets must be provided on site during construction, to cater for human excrement;
* Such mobile toilet facilities must be located outside of the 1: 100 year floodline, or must not be placed closer than 150 metres from the water course. These toilets must be regularly monitored on daily basis and sewerage sludge must be disposed of at a nearest registered Waste Water Treatment Works.
* The site must be kept clean and free of litter by continuously disposing waste at the municipal disposal site.

*Responsible party*

Site Engineer / Applicant and the Contractor.

**(k) Construction site & camp**

*Impact*

The unsuitable location can result in environmental degradation and water pollution.

*Mitigation*

* The construction camp must be situated at a distance of 150 metres away from the watercourse.
* As mentioned above adequate provision for sanitation must be made in the form of either mobile toilets or existing toilets, to cater for human excrement.
* In this project the existing structures on site will serve as accommodation for the construction employees who may be from outside the area, otherwise most of them will be locals.

*Responsible party*

Site Engineer / Contractor and the Applicant.

**(l) Traffic Management**

*Impact*

Increased construction traffic flow during construction.

*Mitigation*

* Vehicles must adhere to the speed limit of 40 kms per hour during construction.
* Construction vehicles must be properly marked with “construction vehicle” signs, and drivers must be given clear work instructions.
* Points men must be used to direct traffic flow; if necessary.

*Responsible party*

Site Engineer / Contractor.

**(m) Heritage impact**

*Impact*

Impact on heritage resources.

*Mitigation*

* Amafa must be contacted if any heritage objects are identified during earthmoving activities, and all development must cease until further notice.
* Amafa must be contacted if any graves are identified during construction and the following procedure is to be followed:
* Stop construction
* Report finding to local police station
* Report to Amafa to investigate
* No activities are allowed within 50 m of a site which contains rock art.

*Responsible party*

Site Engineer / Contractor and the Applicant / ECO.

**(n) Visual impact**

*Impact*

Visual nuisance.

*Mitigation*

* All construction related work will visually impact upon the environment. All the contractors and subcontractors must therefore take care to reduce this impact, and avoid the emotional outcry associated with irresponsible development.

*Responsible party*

Site Engineer / Contractor

(iv) rehabilitation of the environment after construction and where applicable post closure; and

**(1) Clearing construction site**

*Impact*

Environmental and site pollution.

*Mitigation*

* Once the construction phase is complete all material on site associated with construction must be removed from the property, and everything referred to, as waste must be disposed of at the municipal disposal site or landfill site as the case may be.
* No on site burning or burial of waste material must be done on site.

*Responsible party*

*Contractor / ECO /* Applicant

**(2) Signing off**

*Impact*

Environmental pollution and degradation left behind after construction.

*Mitigation*

* EMPr must be signed off by the contractor on site.

*Responsible party*

Contractor / ECO

**(3) Landscaping**

*Impact*

Soil erosion and sedimentation.

*Mitigation*

* On completion of the buildings and infrastructure landscaping must be done.
* All bare areas must be planted with grass cover to minimize soil erosion.
* Any invader evasive species must be eradicated on site.
* The soil must not be left bare, but grass planting must be done to ensure adequate groundcover.

*Responsible party*

Applicant and ECO.

*Impact*

Possibility of soil contamination.

*Mitigation*

* Contaminated soil must be cleaned, removed and disposed of at the nearest disposal site.

*Responsible party*

Applicant and the ECO.

(v) where relevant, operation activities;

*Impact*

Noise

*Mitigation*

* Noise levels in general must be kept at acceptable levels.

**(F) A DESCRIPTION OF PROPOSED IMPACT MANAGEMENT ACTIONS, IDENTIFYING THE MANNER IN WHICH THE IMPACT MANAGEMENT OBJECTIVES AND OUTCOMES CONTEMPLATED IN PARAGRAPH (D) AND (E) WILL BE ACHIVIED, AND MUST, WHERE APPLICABLE, INCLUDE ACTIONS TO -**

(i) planning and design;

*How impact management outcomes will be achieved*

This will be done by educating the stakeholders about the environment, and the crash course for the contractor. The project must ensure sustainable development in balancing economic, social and environmental aspects.

(ii) Pre-construction activities;

**Environmental awareness and partnerships**

*How Impact management outcomes will be achieved*

The EA contents will further be discussed with all stakeholders in terms of the project to ensure they are understood, and the conditions put by the Department of Economic Development, Tourism and Environmental Affairs (DETEA) are adhered to. Compliance will be emphasized to the developer, and the Compliance section of DEDTEA is also expected to do inspections, as they deem appropriate and necessary.

*How Impact management outcomes will be achieved*

* The EMPr will be signed by the main contractor, and popularized to stakeholders.
* The EMPr document must be available on site at all times to ensure monitoring by organs of state with jurisdiction on site.

*Impact*

Ignorance about environmental issues resulting in degradation of the receiving environment.

*How Impact management outcomes will be achieved*

* The main contractor and relevant stakeholders must familiarise themselves with the contents of the Environmental Authorization (EA), and this Environmental Management Programme (EMPr) to achieve full compliance during all project phases.

 (iii) construction activities;

**(a) The storage facility**

*Impact*

Environmental pollution likely to result in soil contamination and environmental pollution in case of leakages and spills.

*How Impact management outcomes will be achieved*

* This must be achieved by constructing a storage facility that is roofed and properly paved to store all the contractor's tools and materials during construction phase. The alternative to this will be the use of one of the structures for this purpose on site.

**(b) Solid waste** **and littering**

*Impact*

The possible pollution of the environment and water due to litter.

*How Impact management outcomes will be achieved*

* By disposal of solid waste at the nearest disposal site

**(c) Concrete mixing**

*Impact*

Soil contamination.

*How Impact management outcomes will be achieved*

* All concrete mixing that is “not ready mixed” must be carried out on wooden boards in a lined bunded area so that cement slurry does not escape out of the area. This will also prevent contamination of the soil.

**(d) Chemical materials**

*Impact*

Environmental pollution including soil and water.

*How Impact management outcomes will be achieved*

* Chemical materials like paint, turpentine, solvents, cement and the like must be stored appropriately in line with the provisions of Hazardous Substances Act (Act 15 of 1973).

**(e) Management of water, sediments and stormwater**

*Impact*

Soil erosion and water pollution.

*How Impact management outcomes will be achieved*

* Stormwater must be in line with the design, and adhere to all Engineers stipulations and requirements of the Local Authority.

**(f) Air pollution**

*Impact*

Air pollution.

*How Impact management outcomes will be achieved*

* By full compliance to the requirements of the atmospheric Pollution Prevention Act (APA) (Act No. 45 of 1965) and National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).
* By regularly spraying with water during construction phase to suppress dust.

 **(g) Noise control**

*Impact*

Noise pollution to the neighbourhood.

*How Impact management outcomes will be achieved*

* Strict adherence to the Noise Control Regulations (Regulations 154, 10 January 1992) of the Environmental Conservation Act (Act No. 73 0f 1989).
* Restricting construction operations to daylight period, Monday to Saturday, and must adhere to legally stipulated hours (7.00 – 18.00).

 **(h) Earthworks and Soil**

*Impact*

Soil erosion and sedimentation.

*How Impact management outcomes will be achieved*

* Soil generated during digging must be backfilled immediately or at least within 48 hours.
* No soil must be left in heaps after the construction.

 **(i) Vegetation / Groundcover**

*Impact*

Soil erosion.

*How Impact management outcomes will be achieved*

* Landscaping and maintaining groundcover.

 **(j) Health and safety**

*Impact*

Unhealthy and unsafe environment.

*How Impact management outcomes will be achieved*

* All requirements of the Health and Safety Act (Act No. 85 of 1993) must be complied with.
* Provision of mobile toilets placed some 150 metres away outside of the 1: 100 year floodline. These toilets must be regularly monitored on daily basis and sewerage sludge must be disposed of at a nearest registered Waste Water Treatment Works.

 **(k) Construction site & camp**

*Impact*

The unsuitable location is likely to result in environmental degradation and surface water pollution.

*How Impact management outcomes will be achieved*

* Suitably and legally acceptable location at a distance of 150 metres away from any watercourse.
* In this project the existing structures on site will serve as accommodation for the construction employees who may be from outside the area, otherwise most of them will be locals.

**(l) Traffic Management**

*Impact*

Increased construction traffic flow.

*How Impact management outcomes will be achieved*

* Vehicles must adhere to the speed limit of 40 kms per hour during construction.
* Construction vehicles must be properly marked with “construction vehicle” signs, and drivers must be given clear work instructions.
* Pointsmen must be used to direct traffic flow.

 **(m) Heritage impact**

*Impact*

Impact on heritage resources; that may be identified during earthworks.

*How impact management outcomes will be achieved*

* Amafa must be contacted if any heritage objects are identified during earthmoving activities, and all development must cease until further notice.
* Amafa must be contacted if any graves are identified during construction.
* No activities are allowed within 50 m of a site which contains rock art.

 **(n) Visual impact**

*Impact*

Nuisance to the neighbourhood.

*How Impact management outcomes will be achieved*

* This will be achieved by ensuring that development avoids activities that will result in emotional outcry.

 (iv) rehabilitation of the environment after construction and where applicable post closure; and

**(1) Clearing construction site**

*Impact*

Environmental and site pollution.

*How Impact management outcomes will be achieved*

* Landscaping and proper housekeeping.

**(2) Signing off**

*Impact*

Environmental pollution and degradation left behind after construction.

*How Impact management outcomes will be achieved*

* EMPr has to be signed off by the contractor on site.

**(3) Landscaping**

*Impact*

Soil erosion and sedimentation.

*How Impact management outcomes will be achieved*

* Landscaped area, with grass and ground cover planting.
* Eradication of Invader evasive species on site.

*Impact*

Possibility of soil contamination.

*How Impact management outcomes will be achieved*

* Contaminated soil must be cleaned, removed and disposed of at the nearest disposal site.

 (v) where relevant, operation activities;

(v) where relevant, operation activities;

*Impact*

Noise pollution.

*How impact management outcomes will be achieved*

* Keep low noise levels.

**…..WHERE APPLICABLE, INCLUDE ACTIONS TO -**

*(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*

As indicated above.

*(ii) comply with any prescribed environmental management standards or practices*

As indicated above.

*(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and*

In case of closure the activity must be reported to the Department of Economic Development, Tourism and Environmental Affairs, and such closure needs monitoring by an environmentalist as outlined above.

*(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation; where applicable;*

Issues of rehabilitation on site will be done by the developer. The applicant and the asset owner has an obligation to eradicate alien invader species that may infest the area after the earthworks on site. The Department is empowered to request this eradication in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), as well as the Alien and Invasive Species Regulations dated 2014.

**(G) THE METHOD OF MONITORING THE IMPLEMENTATION OF THE IMPACT MANAGEMENT ACTIONS CONTEMPLATED IN PARAGRAPH (F);**

(i) planning and design;

*Method of monitoring the implementation of impact management*

Monthly reporting to the Department of Economic Development, Tourism and Environmental Affairs (DEDTEA).

 (ii) Pre-construction activities;

**Environmental awareness and partnerships**

*Method of monitoring the implementation of impact management*

Monthly reporting to DEDTEA.

*Impact*

Ignorance about environmental issues resulting in degradation of the receiving environment.

*Method of monitoring the implementation of impact management*

* Site visits to ensure compliance to Environmental Authorization (EA), and this Environmental Management Programme (EMPr), of which both will be hanged at the site office.

(iii) construction activities;

**(a) The storage facility**

*Impact*

Environmental pollution likely to result in soil contamination and environmental pollution in case of leakages and spills.

*Method of monitoring the implementation of impact management*

* Monthly reporting, site visits and photographs.

**(b) Solid waste** **and littering**

*Impact*

The possible pollution of the environment due to litter.

*Method of monitoring the implementation of impact management*

* Monthly reporting and proof of disposal receipts from the disposal site.

**(c) Concrete mixing**

*Impact*

Soil contamination.

*Method of monitoring the implementation of impact management*

* Monthly reporting and site visit.

**(d) Chemical materials**

*Impact*

Environmental pollution including soil and water.

*Method of monitoring the implementation of impact management*

* Monthly reporting and Safety Officer reports.

**(e) Management of water, sediments and stormwater**

*Impact*

Soil erosion and water pollution.

*Method of monitoring the implementation of impact management*

* Monthly reporting and site visit.

**(f) Air pollution**

*Impact*

Air pollution.

*Method of monitoring the implementation of impact management*

* Site inspection and monthly reporting.

 **(g) Noise control**

*Impact*

Noise pollution to the neighbourhood.

*Method of monitoring the implementation of impact management*

* Monthly reporting and site visits.

 **(h) Earthworks and Soil**

*Impact*

Soil erosion and sedimentation.

*Method of monitoring the implementation of impact management*

* Site inspection and monthly reporting.

 **(i) Vegetation / Groundcover**

*Impact*

Soil erosion.

*Method of monitoring the implementation of impact management*

* Site inspection and photographs.

 **(j) Health and safety**

*Impact*

Unhealthy and unsafe environment.

*Method of monitoring the implementation of impact management*

* Monthly reporting, inspection and safety officer reports.

**(k) Construction site & camp**

*Impact*

The unsuitable location is likely to result in environmental degradation.

*Method of monitoring the implementation of impact management*

* Site inspection.
* In this project the existing structures on site will serve as accommodation for the construction employees who may be from outside the area, otherwise most of them will be locals.

**(l) Traffic Management**

*Impact*

Increased construction traffic flow.

*Method of monitoring the implementation of impact management*

* Site inspection and monthly reporting

 **(m) Heritage impact**

*Impact*

Impact on heritage resources, that may be identified during earthworks.

*Method of monitoring the implementation of impact management*

* Site inspection, monthly reporting done against the set conditions of Amafa AKwaZulu-Natali.

 **(n) Visual impact**

*Impact*

Nuisance to the neighbourhood.

*Method of monitoring the implementation of impact management*

* Site inspection and monthly reporting.

(iv) rehabilitation of the environment after construction and where applicable post closure; and

**(1) Clearing construction site**

*Impact*

Environmental and site pollution.

*Method of monitoring the implementation of impact management*

* Site inspection and monthly reporting.

**(2) Signing off**

*Impact*

Environmental pollution and degradation left behind after construction.

*Method of monitoring the implementation of impact management*

* Site inspection and reporting.

**(3) Landscaping**

*Impact*

Soil erosion and sedimentation.

*Method of monitoring the implementation of impact management*

* Site inspection and photographs.

*Impact*

Possibility of soil contamination.

*Method of monitoring the implementation of impact management*

* Site inspection, photographs and reporting.

(v) where relevant, operation activities;

*Impact*

Noise pollution.

*Method of monitoring the implementation of impact management*

* Monitoring of noise levels by the relevant organs of state.

**…..WHERE APPLICABLE, INCLUDE ACTIONS TO -**

*(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*

As indicated above.

*(ii) comply with any prescribed environmental management standards or practices*

As indicated above.

*(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and*

*Method of monitoring the implementation of impact management*

In case of closure the activity must be reported to the Department of Economic Development, Tourism and Environmental Affairs, and such closure needs monitoring by an environmentalist through site inspection.

*(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation; where applicable;*

*Method of monitoring the implementation of impact management*

* Rehabilitation and invader plants eradication programme will be supervised by the ECO as part of the project monitoring programme.

**(H) THE FREQUENCY OF MONITORING THE IMPLEMNETATION OF THE IMPACT MANAGEMENT ACTIONS CONTEMPLATED IN PARAGRAPH (F);**

The frequency of monitoring the implementation of the impact management actions contemplated under (f) above will more or less take the same format. The monitoring for all the impacts will be done on monthly basis through the monthly reports and environmental auditing, site visits, project meetingsand site photographs. The deviation to monthly visits will only be done if warranted by special conditions on site.

**…..WHERE APPLICABLE, INCLUDE ACTIONS TO -**

*(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*

As indicated above.

*(ii) comply with any prescribed environmental management standards or practices*

As indicated above.

*(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and*

*Frequency of monitoring the implementation of the impact management actions*

This can only be applicable should the project and the facility be decommissioned. In the case of decommissioning this become a once off operation.

*(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation; where applicable;*

*Frequency of monitoring the implementation of the impact management actions*

* For the duration of the rehabilitation phase.

**(I) AN INDICATION OF PERSONS WHO WILL BE RESPONSIBLE FOR THE IMPLEMENTATION OF THE IMPACT MANAGEMENT ACTIONS;**

**Responsible persons to be read together with (D) above which indicates the responsible party:**

* Mondli Consulting Services (Environmental Control Officer) – overall responsibility of environmental reporting and auditing, training and awareness, and the overseer of the implementation of the whole EMPr.
* Main contractor / Site Engineer / Amaswazi Trust – responsible for all engineering related work on site, and project implementation.
* Amaswazi Trust – ensure adherence to the conditions of authorization.
* DEDTEA (Compliance Section) – site inspections as and when necessary.

**…..WHERE APPLICABLE, INCLUDE ACTIONS TO -**

*(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*

Parties mentioned above.

*(ii) comply with any prescribed environmental management standards or practices*

Parties mentioned above.

*(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and*

*Responsible persons*

Should this be required, it will be done by the applicant under the guidance of the Department of Economic Development, Tourism and Environmental Affairs and the ECO.

*(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation; where applicable;*

*Responsible persons*

* Amaswazi Trust as the applicant, under the supervision and guidance of the ECO.

**(J) THE TIME PERIODS WITH WHICH THE IMPACT MANAGEMENT ACTIONS CONTEMPLATED IN PARAGRAPH (F) MUST BE IMPLEMENTED;**

(i) planning and design;

*Time periods of implementation*

Planning and commencement phase of the project.

(ii) Pre-construction activities;

**Environmental awareness and partnerships**

*Time periods of implementation*

Immediately after the issuing of the Environmental Authorisation.

*Impact*

Ignorance about environmental issues resulting in degradation of the receiving environment.

*Time periods of implementation*

* Immediately after the issue of Environmental Authorisation.

 (iii) construction activities;

**(a) The storage facility**

*Impact*

Environmental pollution that is likely to result in soil contamination and environmental pollution in case of leakages and spills.

*Time periods of implementation*

* For the duration of construction period.

**(b) Solid waste** **and littering**

*Impact*

The possible pollution of the environment and water due to litter and waste.

*Time periods of implementation*

* For the duration of the construction period.

(c) **Concrete mixing**

*Impact*

Soil contamination.

*Time periods of implementation*

* During the concrete phase of the project.

**(d) Chemical materials**

*Impact*

Environmental pollution including soil and water.

*Time periods of implementation*

* For the duration of the project.

**(e) Management of water, sediments and stormwater**

*Impact*

Soil erosion and water pollution.

*Time periods of implementation*

* For the duration of the project.

**(f) Air pollution**

*Impact*

Air pollution.

*Time periods of implementation*

* For the duration of the project.

 **(g) Noise control**

*Impact*

Noise pollution to the neighbourhood.

*Time periods of implementation*

* For the duration of the project

 **(h) Earthworks and Soil**

*Impact*

Soil erosion and sedimentation.

*Time periods of implementation*

* During the earthworks and construction phases of the project.

 **(i) Vegetation / Groundcover**

*Impact*

Soil erosion.

*Time periods of implementation*

* On project completion.

 **(j) Health and safety**

*Impact*

Unhealthy and unsafe environment.

*Time periods of implementation*

* For the duration of the project.

**(k) Construction site & camp**

*Impact*

The unsuitable location is likely to result in environmental degradation and water pollution.

*Time periods of implementation*

* In this project the existing structures on site will serve as accommodation for the construction employees who may be from outside the area, otherwise most of them will be locals. The camping set up will be monitored for the duration of the project.

**(l) Traffic Management**

*Impact*

Increased construction traffic flow.

*Time periods of implementation*

* For the duration of the project

 **(m) Heritage impact**

*Impact*

Impact on heritage resources, that may be identified during earthworks.

*Time periods of implementation*

* For the duration of the project.

 **(n) Visual impact**

*Impact*

Nuisance to the community.

*Time periods of implementation*

* For the duration of the project.

(iv) rehabilitation of the environment after construction and where applicable post closure; and

**(1) Clearing construction site**

*Impact*

Environmental and site pollution.

*Time periods of implementation*

* During project completion phase.

**(2) Signing off**

*Impact*

Environmental pollution and degradation left behind after construction.

*Time periods of implementation*

* On project completion.

**(3) Landscaping**

*Impact*

Soil erosion and sedimentation.

*Time periods of implementation*

* On project completion.

*Impact*

Possibility of soil contamination.

*Time periods of implementation*

* For the duration of the project

(v) where relevant, operation activities;

*Impact*

Noise pollution

*Time periods of implementation*

* For the duration of the project

**…..WHERE APPLICABLE, INCLUDE ACTIONS TO -**

*(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*

For the duration of the project.

*(ii) comply with any prescribed environmental management standards or practices*

For the duration of the project.

*(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and*

*Time periods of implementation*

This can only be applicable should the project and the facility be decommissioned. The decommissioning phase becomes a once off operation.

*(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation; where applicable;*

*Time periods of implementation*

* For the duration of the rehabilitation phase.

**(K) THE MECHANISM FOR MONITORING COMPLIANCE WITH THE IMPACT MANAGEEMNT ACTIONS CONTEMPLATED IN PARAGRAPH (F);**

**Monitoring and Auditing**

* The Environmental Control Officer (Mondli Consulting Services) will monitor implementation and carry out environmental reporting and auditing. This will include site inspections.
* The main contractor / Site Engineer - Amaswazi Trust will ensure adherence to set technical specifications.
* The planting of grass and landscaping will be supervised by the environmental control officer during the rehabilitation phase.
* The Department of Economic Development, Tourism and Environmental Affairs (Compliance Section) will do inspections as deemed appropriate.

**…..WHERE APPLICABLE, INCLUDE ACTIONS TO -**

*(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*

Site visits.

*(ii) comply with any prescribed environmental management standards or practices*

Monthly reports and site visits.

*(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and*

*Mechanism for monitoring compliance*

This can only be applicable should the project and the facility be decommissioned. This can be a once off operation during decommissioning phase, which will be a physical site monitoring.

*(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation; where applicable;*

*Mechanism for monitoring compliance*

* Physical site monitoring.

**(L) A PROGRAM FOR REPORTING ON COMPLIANCE, TAKING INTO ACCOUNT THE REQUIREMENTS AS PRESCRIBED BY THE REGULATIONS;**

* Monthly reporting.
* Project meetings.
* Environmental Auditing.

 **(M) AN ENVIRONMENTAL AWARENESS PLAN DESCRIBING THE MANNER IN WHICH -**

(i) the applicant intends to inform his or her employees of any environmental risk which is likely to result from their work; and

* Assurance must be made that all project implementation supervisors are appropriately trained in controlling and preventing environmental degradation. The key implementers will be part of the environmental crash course attendees to be conducted by the ECO.
* Assurance must be made that all employees are familiar with the contents of the EA and EMPr which will be on site for the duration of the project

(ii) risks must be dealt with in order to avoid pollution or degradation of the environment; and

* The applicant has to ensure that all key project stakeholders attend the half day environmental crash course to be conducted by the ECO. Among other things, the course will touch on legislation relating to the handling and storage of hazardous material, occupational health, safety and environmental pollution. They will also be educated about the Environmental Authorisation (EA), EMPr, EIA Regulations and National Environmental Management Act (NEMA) No. 107 of 1998 as amended.

 **(N) ANY SPECIFIC INFORMATION THAT MAY BE REQUIRED BY THE COMPETENT AUTHORITY**

NONE.