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LIST OF ACRONYMS AND ABBREVIATIONS

DEA	Department of Environmental Affairs
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EM	Environmental Manager
EMS	Environmental Management System
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
NEMA	National Environmental Management Act
NEMWA	National Environmental Management: Waste Act
NEMBA	National Environmental Management: Biodiversity Act

DEFINITIONS

Alien Vegetation: Alien vegetation is defined as undesirable plant growth which shall include, but not be limited to, all declared category 1 and 2 listed invader species as set out in the Conservation of Agricultural Resources Act, No. 43 of 1983 (CARA) regulations. Other vegetation species deemed to be alien shall be those plant species that show the potential to occupy in number, any area within the defined construction area and which are declared to be undesirable.

Construction Activity: A construction activity is any action taken by the contractor, his sub-contractors, suppliers or personnel during the construction process.

Environment: Environment means the surroundings within which humans exist and that could be made up of -

- The land, water and atmosphere of the earth;
- Micro-organisms, plant and animal life;
- Any part or combination of (i) and (ii) and the interrelationships among and between them;
- The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

Environmental Aspect: An environmental aspect is any component of a contractor's construction activity that is likely to interact with the environment.

Environmental Impact: An impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a construction activity. An impact may be the direct or indirect consequence of a construction activity.

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1. BACKGROUND TO THE PROJECT

The proposed development is for the construction of filling station and convenience centre on Erf 1251 in Nkandla Town within uThungulu District Municipality. Please see Figure 1 below for site locality. The site lies on the northern side of Nkandla Town and is zoned “Petrol Filling Station”. This zoning allows for the site to be used for convenience store, car wash facility, public parking area, restaurant, spray painting, vehicle body repair and vehicle body service.

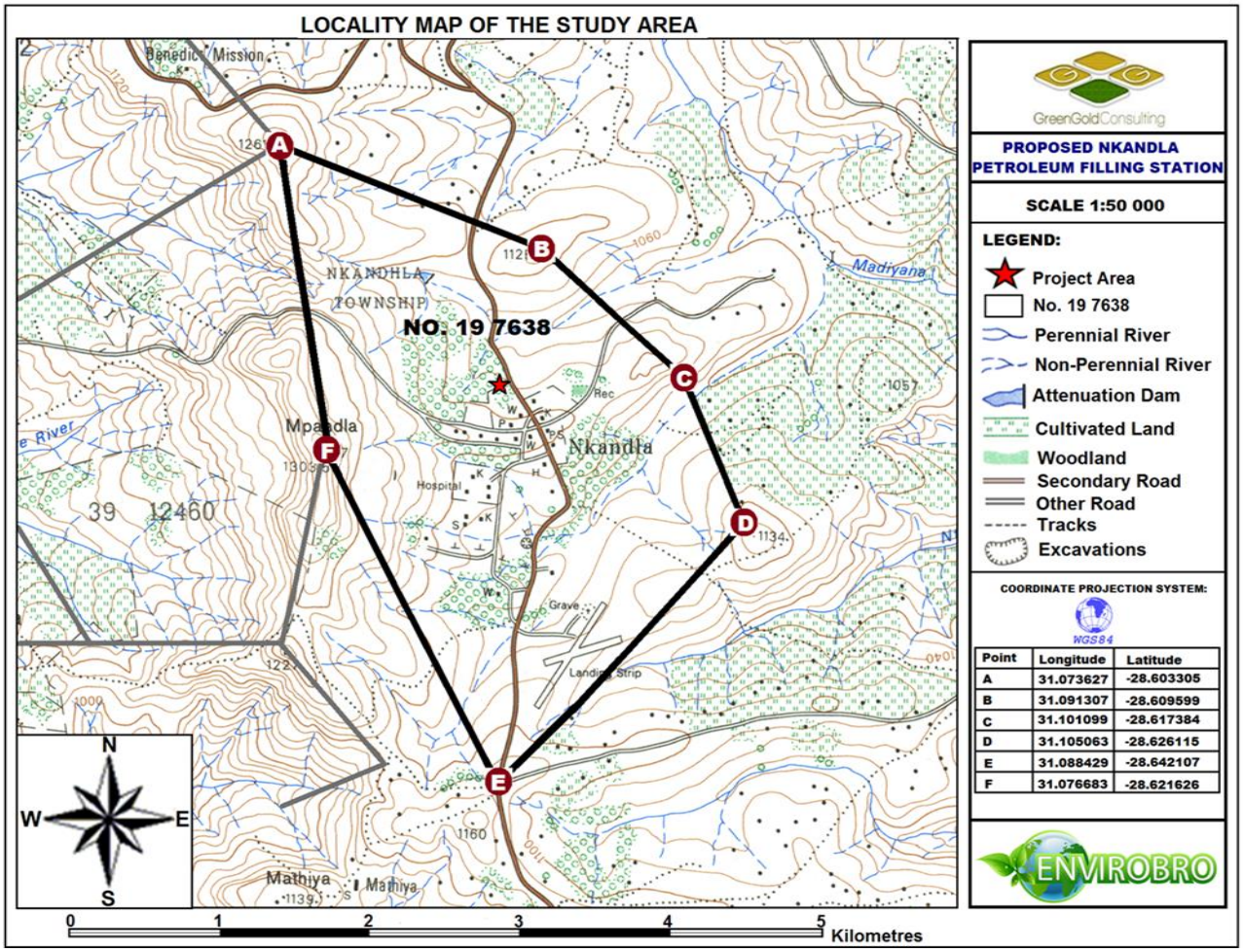

Figure 1: Project locality map

2. PURPOSE OF THIS DOCUMENT

This Environmental Management Programme (EMPr) sets out the methods by which proper environmental controls are to be implemented by the Contractor. The EMPr and Contractor’s obligations shall cover the construction period of the project as well as the limited time after contract completion defined by the General Conditions of Contract, and the project specifications.

The provisions of this EMPr are binding on the Contractor during the life of the project. The provisions are to be read in conjunction with all the documents that comprise the suite of documents for the contract, particularly the conditions set out in the environmental authorisation issued for the project.

The EMPr is a dynamic document subject to similar influences and changes as brought by variations to the provisions of the project specification.

The EMPr identifies the following:

1. Construction activities that will impact on the environment.
2. Specifications which the Contractor shall comply with in order to protect the natural and social environment from identified impacts.
3. Actions that will be taken in the event of non-compliance.

The EMPr has the objective of ensuring that:

1. The roles and responsibilities for environmental management are outlined and clarified.
2. Environmental management considerations are implemented throughout the development or planning, implementation or construction and operational phases of the project.
3. Legislative and regulatory requirements which must be complied with by the project proponent are outlined.
4. Precautions against damage and claims arising from the proposed project are addressed timeously.
5. Key environmental aspects or potential impacts associated with the proposed project are identified.
6. Management options or mitigation measures are outlined to avoid or minimise negative impacts associated with the proposed project.
7. Indicators and related monitoring requirements are set out for identified environmental aspects.
8. Implementation schedule, reporting procedures, timing, frequency and duration of mitigation measures are clearly set out.
9. Procedures to provide information on progress and results of mitigation and monitoring measures are set out.

3. LEGISLATIVE CONTEXT

This EMPr has been compiled in terms of the Environmental Impact Assessment (EIA) Regulations, published in accordance with EIA Regulations, promulgated in Government Gazette No. 38282 of 04 December 2014, which provides a framework for the content and intent of an EMPr. The EMPr is also aligned to the ISO 14001: Environmental Management System (EMS) international standard. To this end, the EMPr tables in this document identify all key elements of the standard, namely - Activity, Aspect, Impact, Mitigation Measures, Performance Indicators, Responsibility, Resources and Time Schedule.

The following legislation is applicable to the proposed project:

1) Constitution of the Republic of South Africa (Act No. 108 of 1996)

2) National Environmental Management Act (Act No. 107 of 1998)
   - National Environmental Management Act (Act No. 107 of 1998) Environmental Impact Assessment Regulations (Notice No. R982 of 2014)
   - National Environmental Management Act (Act No. 107 of 1998) Listing Notice 1: List of Activities and Competent Authorities Identified in Terms of Sections 24(2) and 24D (Notice No. R983 of 2014)
   - National Environmental Management Act (Act No. 107 of 1998) Listing Notice 2: List of Activities and Competent Authorities Identified in Terms of Sections 24(2) and 24D (Notice No. R984 of 2014)
3) National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
4) National Heritage Resources Act (Act No. 25 of 1999)
5) National Water Act (Act No. 36 of 1998)
6) Conservation of Agricultural Resources Act (Act No. 43 of 1983)
7) National Environmental Management: Waste Act (Act No. 59 of 2008)
8) Hazardous Substances Act, 1973 (Act No.15 of 1973)
9) Major Hazard Installation Regulations (GN R692, July 2001)

4. ROLES AND RESPONSIBILITIES

4.1 ENVIRONMENTAL CONTROL OFFICER

The Environmental Control Officer (ECO) is an independent person responsible for monitoring the implementation of the EMPr. Given the limited footprint and low potential negative impacts for the project, it is envisaged that an ECO will not be required to monitor the implementation of the EMPr during the construction phase. However, the decision whether the ECO should be appointed or not, will be at the discretion of the competent authority. The project will be subject to ad hoc compliance monitoring by both national and provincial departments of environmental affairs.

If an ECO is required by the competent authority, the ECO will be responsible for:

- Monitoring compliance with Environmental Authorization (EA) and the EMPr, at a frequency determined by the competent authority;
- Ensuring that all required notifications to Government are submitted in a timely manner and are to the satisfaction of Government.
- Compile environmental monitoring reports and submit to the competent authority;
- Submit environmental monitoring reports to the Department of Environmental Affairs; and

4.2 PROJECT ENGINEER

The Project Engineer responsible for the design of the proposed filling station and associated infrastructure will be appointed by the Developer. It will be the responsibility of the Engineer to oversee

the overall implementation of the project as well as compliance with the EMPr as relates to design measures.

4.3 **CONTRACTOR**

The Contractor will be responsible for the construction of the proposed filling station and associated infrastructure and will be appointed by the Developer. The Contractor will be responsible for the overall implementation of the EMPr as outlined in the design, pre-construction and construction sections.

4.4.1 Environmental awareness on site

Prior to construction, all Contractor teams involved in the construction work for the proposed project must be inducted and fully briefed on the conditions set out in the EA and the EMPr. It is recommended that the briefings take a form of an on-site talk and demonstration by the ECO. The training of the ECO will also take place during the induction programme and will entail full review of the conditions of the EA and the EMPr. The training programme should be aimed at the foreman and supervisor/s and the ECO and general construction workers within the contractor team. All new employees arriving on site shall undergo this induction. A signed register documenting all employees environmental training and awareness programmes must be kept on record.

4.4.2 Record keeping

The ECO is responsible for maintaining an environmental file and all records in relation to the EA and EMPr on site. The Contractor shall ensure that an electronic or paper filing system identifying all documentation related to the EMPr is established

Typically those reports would include the following:

Planning phase

- Basic Assessment Report
- Environmental Management Programme
- Environmental Authorisation and other relevant licences/permits
- Final design documents and diagrams issued to and by the Contractor
- All communications detailing changes of design/scope that may have environmental implications
- Drawings of instructions

Construction phase

- Training material
- Training attendance registers
- Vehicle access and visitors log book

- Site monitoring reports
- Complaints register
- Environmental incidents reports
- Emergency preparedness and response plans
- Permits and legal documents, including letters authorising specific personnel of their duties as part of emergency preparedness teams e.g. fire teams, etc.
- Disciplinary procedures
- Monthly site meeting minutes during construction
- Contractor Method Statements.

5. ROLES AND RESPOSIBILITIES

Environmental accountabilities rest entirely on developer. The following table recommends personnel who have the capacity to undertake certain responsibilities outlined in the operational EMPR, however, the developer is ultimately mandated to ensure compliance.

Role	Accountability
Site Foreman/Safety, Health and Environmental Officer.	○ Ensures implementation of the EMPr. ○ Takes the responsibility for EMPr updating where there are significant changes/additions to the operation on site.
Environmental Control Officer	○ Conducts regular site monitoring. ○ Ensures that all environmental management issues are resolved in a timely manner to the satisfaction of all stakeholders. ○ Ensures all required notifications to Government are submitted in a timely manner and are to the satisfaction of the Government. ○ Ensures environmental performance audits are conducted in accordance with the requirements of the EMPr. ○ Implements the monitoring requirements as set out in the EMPr. ○ Advises the Owner on environmental management issues which need attention.

6. MONITORING AND AUDITING FRAMEWORK

6.1 MONITORING PROGRAMME

The purpose of the monitoring programme is to ensure that mitigation measures outlined in this EMPr are implemented. Construction activities will be monitored and recorded by the ECO as per the conditions of EA and report issued prior to the monthly progress meetings where they will form part of the agenda.

The Contractor is deemed **NOT** to have complied with this specification if:

1) Within the boundaries of the site and access roads there is evidence of contravention of the conditions of the EA and the EMPr,
2) Environmental or social damage arises due to negligence,
3) The Contractor fails to comply with required corrective actions or other instructions issued by delegated authority,
4) The Contractor fails to address reported complaints by the public as suctioned by delegated authority, and
5) Legal action is instituted against the proponent in terms of environmental laws.

The ultimate responsibility for compliance with the conditions set out in the EA and the mitigation measures proposed in this EMPr lies with the Developer.

7. EMERGENCY AND RESPONSE FRAMEWORK

The environmental related emergencies and remediation procedure must include:

- A description of the potential accidents and emergencies;
- Identification of a person who will be accountable during the emergency;
- Responsibility, authority and duties of workers with specific roles during the emergency (fire-wardens, first aid staff, spillage specialists);
- Evaluation of the procedures;
- Identification and location of hazardous materials, and emergency actions required;
- Interface requirements with external emergency services;
- Communication with statutory bodies;
- Communication with adjacent landowners, adjacent land-users and the public in general; and
- Location of necessary information during the emergency (layout drawings, hazardous material storage areas, procedures, emergency contact details, etc).

All accidents and incidents must be reported immediately to the Site Manager and ECO (if appointed). Any person who becomes aware of any environmental damage or pollution must report to his/her supervisor as soon as possible to ensure that necessary corrective actions are taken.

8. DESCRIPTION OF ACTIVITIES

The activities that are going to be undertaken involve, but are not limited to:

8.1 PLANNING AND DESIGN PHASE

- Design and planning

8.2 PRE-CONSTRUCTION AND CONSTRUCTION PHASE

- Establishment of the contractor's camp;
- Site clearing;
- Establishment of camp site;
- Fencing of the construction sites;
- Personnel conduct;
- Storage of hazardous material; and
- Handling and disposal of building construction waste.

8.3 REHABILITATION

- Removal/decommissioning of Contractor's camp site;
- Removal of all construction, hazardous and domestic waste; and
- Rehabilitation of the disturbed areas as a result of construction works.

8.4 OPERATIONAL PHASE

- Integration into existing environmental management system,
- Environmental monitoring.

9. SUMMARY OF IMPACTS AND ASSOCIATED MITIGATION MEASURES

The following table covers the construction activities and associated environmental impacts that will occur during the construction of the proposed fuel tank and associated infrastructure. The table considers the expected impacts on-site through all phases of the project, as well as the mitigation measures and environmental management procedures required to manage the expected impacts.

The following issues are dealt with in the tables below, namely:

- Site establishment
- Material management
- Vehicle and equipment refuelling
- Waste management
- Water management
- Land management

- Noise management
- Dust management
- Fire management
- Stormwater management
- Fauna and flora management.

1. TABLE1: PLANNING AND DESIGN PHASE

PLANNING AND DESIGN PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure(Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
1.1 Engineering Design	All the aspects listed in the BAR &EMPr	Design incompatible with environment	**Objective:** To ensure that the design of the proposed filling station and associated infrastructure is in line with environmental design criteria. **Measures:** • Assimilate requirements of the BAR and EMPr in the design and construction management giving special attention to the proposed filling station. • Prior to construction Developer must ensure that the authorised activity is limited to the property boundary or building line.	Design meets environmental design criteria (Measures stipulated in the BAR and the EMPr)	Engineer
1.2 Establishment of the construction camp site	Construction camp site	Damage or loss of existing vegetation and changes to the area's water quality	**Objective:** To prevent negative impact to the surrounding land and vegetation cover. **Measures:** • The planning and design for the construction camp must ensure that there is a minimum impact on the environment. • The construction camp must be located to the already disturbed areas where possible. • The Contractor camp site must have the necessary ablution facilities.	Construction camp established in compliance with objective.	Contractor

PLANNING AND DESIGN PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure(Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
			• The Contractor must maintain service records of all chemical toilets on site. • Where ablution facilities are available, workers shall make use of such facilities. • The Contractor shall inform all workers on-site to make use of supplied ablution facilities and under no circumstances shall the workers be allowed to use alternative facilities. • The Contractor shall supply refuse bins for waste collection on-site. All solid waste collected shall be disposed of at a registered landfill site and proof thereof will be available. • No solid waste shall be disposed of or burned on-site. • Additional construction camp facilities must be placed within the property boundary. • Emergency and contact numbers of the Contractor must be available and accessible to all workers on-site.		
1.3 Establishment of the construction camp site	Construction camp	Loss of soil fertility.	**Objective** To minimise the footprint of disturbance thereby preventing the degradation and loss of topsoil. **Measures:** • Camp site facilities shall be located within the proposed property and away from property boundaries, and as far as possible from access roads. • The area must be rehabilitated once the construction camp has been decommissioned.	Established construction camp in compliance with objectives and no evidence of environmental degradation	Contractor
1.4	Construction camp.	Potential impacts	**Objective(s):**	Closure of the construction	Engineer, Contractor

PLANNING AND DESIGN PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure(Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
Closure of the construction camp		associated with the closure of the construction camp	To limit potential impacts on the environment for the period for which the construction camp is closed. **Measures:** Should the construction camp be closed for a period of more than one week, a report on compliance will be compiled by the ECO and lodged with the owner (or Engineer/ Project Manager) confirming the following:- • No person is allowed on-site other than authorised workers and Developer employees; • Minimal materials are stored, and store area is secured and locked; • All refuse bins are emptied periodically; • Hazardous materials if any, are stored in leak-proof areas; • Fire extinguishers are serviced and accessible; • Emergency and contact numbers of the Contractor are available and conspicuously displayed on-site; and • If additional chemical toilets are used these must be emptied, kept hygienically clean and secured.	camp in line with the requirements of the EMPr.	
1.5 Construction of site camp	Site buildings materials	Soil pollution and permanent alternation to the natural environment.	**Objective(s):** To ensure that construction material is recycled in order to minimise the impacts of construction of the filling station on the environment. **Measures:** • No permanent structures will be permitted at the Contractor's camp site and Developer will supervise such construction activities.	On site buildings constructed according to the requirements of the EMPr.	Contractor

PLANNING AND DESIGN PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure(Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
			• The filling station should preferably be pre-fabricated or constructed with reusable/recyclable materials. • All temporary structures must be soundly built and not pose a danger to construction workers.		
1.6 Operation of the sanitation system(s)	Sanitation systems	Unpleasant odours on site. Inadequate ablution facilities on-site. Position of ablution facilities. Poor management of waste water.	**Objective(s):** To ensure good sanitation system and management throughout the construction phase. **Measures:** • If necessary, adequate chemical toilets must be provided for all construction workers. Alternatively, existing ablution facilities on-site can be utilised. • If required, chemical toilets must be emptied and serviced on a regular basis to prevent overflowing. Proof of servicing must be kept by the Contractor. • Every contractor shall ensure that there are separate toilet facilities for male and female at a ratio of one facility for every 10 employees.	Adequate toilets will be positioned at the right places as per the EMPr. Absence of odours, erosion and build-up of detergents.	Contractor
1.7 Vehicle parking area. Storage of equipment	Vehicle parking and parking area(s). Storage of equipment.	Pollution of soils by hydrocarbons	**Objective(s):** To ensure vehicles are parked according to the specifications in the EMPr and that pollution prevention equipment is used and handled appropriately. **Measures:** • No storage of vehicles or equipment will be allowed outside of the designated area.	Drip trays must be provided and placed under leaking vehicles and equipment on site.	Contractor

PLANNING AND DESIGN PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure(Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
			• Drip trays or oil spill absorbent material must be used to contain leaks where leakages occur, such leakages should be fixed within 72-hours.		
1.8 Construction activities	Safety of the Public / surrounding landowners	Injuries to Public / landowners Health of Public / landowners	**Objective(s):** To ensure that the general public is not injured or affected negatively due to activities relating to the proposed project. **Measures:** • The Contractor shall recognise that the site is surrounded by commercial and agricultural areas and must take all reasonable measures to ensure the safety of people in the surrounding properties. • Adequate measures must be implemented to prevent unauthorised access to construction work areas.	No injuries or health consequences to neighbouring people. No complaints from neighbouring people.	Contractor and CEO.

2. TABLE 2: PRE-CONSTRUCTION AND CONSTRUCTION PHASES

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
2.1 Construction & Earth works	2.1.1 Topography	Aesthetic	**Objective:** To minimise topographic alterations. **Measure:** • Limit all construction activities to the proposed footprint (on Erf 1251 in Nkandla Town). • Topsoil should be well preserved as prescribed below for use during the rehabilitation phase.	Limited topographical impact	Contractor
	2.1.2 Soil management	Soil erosion or pollution	**Objectives:** To minimise land or soil degradation. **Measures:** • Stormwater management plan or method statement should be developed for the construction phase. • Stormwater should be discharged either on the road hardenings directly into drainage course or to the midblock stormwater control system. • Avoid leaving disturbed surfaces bare for long periods as this will make the site prone to erosion. • Avoid undue stormwater concentration (e.g. construction runoff measures should be done according to soil conservation principles).	No erosion on site	Contractor, CEO

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• The run-off from the exposed construction ground should be controlled with the careful placement of flow retarding barriers. • Topsoil should be removed and stockpiled for later use in rehabilitation. • The soil that is excavated during construction should be stock-piled in layers and protected by berms to prevent erosion. • On-site drainage shall be accomplished through gravity flow. The surface drainage system shall consist of mild overland slopes, ditches and culverts. • The removal of plant material should be kept to a minimum. • Progressive rehabilitation of erosion must be undertaken. • Re-establishment of indigenous plant cover on disturbed areas must take place as soon as possible once activities in that area have ceased.		
	2.1.3 Dust management	Increased dust	**Objectives:** To prevent airborne dust emission during construction. **Measures:** • Dust suppression is to be conducted during construction if necessary, or as complaints from adjacent landowner and landusers are received. • The use of enclosures, screens and sheeting should be considered to contain dust. • The Contractor is to take appropriate measures to minimise the generation of dust as a result of excavation works. Such measures include frequent spraying during low rainfall periods. • Speed limits must be enforced in all areas to reduce the generation of dust.	Dust is kept at its lowest level on site.	Contractor.

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• Re-vegetate disturbed areas as soon as possible after disturbance. • No burning of vegetation should be allowed on-site. • Stockpiles if any, should not be higher than two (2) metres to avoid compaction, single handling is recommended. • Dust suppression must be undertaken for stockpiles older than a month – with either water or a biodegradable chemical binding agent.		
	2.1.4 Soil management	Soil pollution and degrdation.	**Objectives:** To prevent pollution and degradation of top soil. **Measures:** • Workers must be inducted/ trained to be able to prevent chemical and hydrocarbon spills. • Combat chemical pollution in order to avoid toxic substances entering stormwater channels. • Spill kits must be available on-site at all times in order to ensure rapid deployment of corrective measures following spill incidents. • Workers must be suitably trained in the use of spill kits. • Topsoils stockpilesif any, should not be in heaps exceeding two (2) metres in height. • Topsoil stockpiles must be kept as small as possible in order to minimise compaction, wind erosion and the formation of anaerobic conditions. • Topsoil must be stockpiled for the shortest possible timeframes in order to ensure that the quality of the topsoil is not impaired.	No top soil pollution or degradation	Contractor

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• Topsoil stockpiles must be kept separate from subsoils. • Excavated and stockpiled soil material are to be stored and bermed on the higher lying areas of the footprint area and not in any stormwater run-off channels or any other areas where it is likely to cause erosion, or where water would naturally accumulate. • The topsoil should be replaced as soon as possible on any backfilled areas, thereby allowing for the regrowth of the seed bank contained within the topsoil. • Refuelling of machinery and equipment shall take place in demarcated areas and over suitable drip trays to prevent soil pollution. • Spill kits to clean up accidental spills from earthmoving machinery must be well-marked and available on site. • Workers shall undergo induction to ensure that they are prepared for rapid clean-up procedures.		
	2.1.5 Water management	Water pollution and wastage	**Objetives:** To prevent surface water pollution and improve water use efficiency. **Mesaures:** • Clearing of vegetation must be kept to a minimum • Only existing access roads to the site must be used. • All leaking pipes to be repaired immediately. • No equipment must be used which may cause excessive oil spills or pollution on site. • Construction vehicles and equipment must be maintained in good working order, to reduce the probability of leakage of fuels and lubricants.	No water pollution and construction in wet area	Contractor

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• Potable water must be sourced from site and must be adequate and appropriate quality for human use. • A walled concrete platform, dedicated store with adequate flooring or bermed area should be used to accommodate chemicals such as fuel, oil, paint, herbicide and insecticides, as appropriate, in well-ventilated areas. • Surface water draining off contaminated areas containing oil and petrol should be channelled towards a sump, which will separate these chemicals and oils. • All chemical toilets (if any) must be serviced, no sewage spillage is allowed on-site. • Under no circumstances may ablutions occur outside of the provided facilities. • Oil residue shall be treated with oil absorbents and this material removed to an approved waste site. Spill kits must be easily accessible and workers must undergo induction regarding the use thereof.		
	2.1.6 Waste management – General waste	Soil, surface and ground water pollution, & occupational and public health and safety.	**Objective(s):** To ensure that waste is correctly stored and disposed of, decreasing the visual and environmental impacts during the construction and post-construction period. To keep the construction site neat and clean. Spoil, building rubble and refuse should be done in a responsible manner. **Measures:** • No material must be left on-site that could be of harm to people and animals. • Surplus concrete must not be dumped indiscriminately on-site.	Construction waste stored, collected and disposed of as per the requirements of this EMPr.	Contractor

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• Concrete trucks must not be washed on site unless adequate washing and concrete collection facilities are available and such washing is controlled. • Bins and containers must be made available by the contractor for the storage of construction and domestic or general waste. • Temporary storage of construction waste shall take place within the site, and within areas designated witht the help of ECO. • The Contractor must ensure the removaland transportation of all spoil and construction waste off site to a registered landfil site.Proof of such disposal shall be maintained on the environmental file on-site. • No burning of waste shall be permitted on-site. • The construction site must be cleaned daily and litter removed. • The Contractor must conduct regular inspection to ensure that no littering occurs on-site.		
	2.1.7 Waste management – Hazardous waste	Soil, surface and ground water pollution, & occupational and public health and safety.	**Objective(s):** To ensure that soil and the rest of the environment surrounding the site is protected from hazardous waste. **Measures:** • All hazardous waste must be stored in sealed and suitably labelled containers for removal to a registered hazardous waste disposal facility. • Hazardous waste shall be stored on-site for a period of no longer than 90 days, where after it shall be disposed of at a registered hazardous waste disposal site.	All mitigation measures with regards to Hazardous waste mentioned in the EMPr are implemented.	Contractor

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• Any oil spillage on-site shall be in-situ remediated using approved hydrocarbon spill absorbent material.		
	2.1.8 Material management – transportation	Traffic congestion. Dust during transportation. Excessive noise.	**Objective(s)** To ensure that material transportation does not negatively affect the surrounding environment. **Measures:** • The Contractor must note that existing access roads are sufficient to facilitate transportation of material to the site. • No access to or activities on privately owned land along the access road to site. • All vehicle drivers must comply to Healthand Safety Plan requirements for thespeed limit and road accidents. • Appropriate response plans must be prepared by Contractors to ensure the fastest possible reaction to spills or accidents • Deliveries must be scheduled for during the working hours and if possible during off-peak hour traffic times (i.e., from (9am – 3pm). • All drivers and operators are to have licences for driving and moving of plant on-site. • All road vehicles to be road worthy.	No public complaints Emergency preparedness & response plan readily available	Contractor
	2.1.9 Material Management – handling, storage and use	Water resource & soil pollution	**Objective(s):** To ensure adequate protection of soil and soil remediation measures in case of hydrocarbon or chemical spills. **Measures:**	Storage of hazardous chemical or material substances in sealed and	Contractor

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• Hazardous materials – such as paint, cement, fuels, oil, herbicides, battery acid or detergents – must be stored in sealed, lockable containers when not in use • A register must be kept of allhazardous substances on-site. • Hazardous storage areas must be monitored for spills and any spills shall be contained, cleaned and rehabilitated immediately • No storage of hazardous substances or decantation into unmarked containers or containers with inappropriate labeling. • To avoid fire risks, no decanted fuel to be left unattended in the sun. • When handling hazardous materials, manufacturer's specifications must be complied with. The Material Safety Data Sheet (MSDS) must be available on-site for all hazardous substances used. • All reasonable care must be taken to prevent spills of any hazardous material. • Emergency spill response and clean-up procedures as noted in the MSDS must be followed and a designated person must have the necessary training to adequately handle accidental spillages on-site. • The Contractor must ensure that there is enough supply of chemical absorbent spill kit for cleanup of accidental chemical spills. • Compatibility should be born in mind when storing products on-site. • Storage areas must display the required safety signs.	lockable containers. No evidence of spills on site. Absorbent and clean-up material or spill kit readily available on site	

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• All containers on-site must be clearly marked to indicate contents as well as safety requirements.		
	2.1.10 Cement management – use & handling	Contamination of soil and surrounding environment by cement. Decrease in ambient air quality	**Objective(s):** To ensure optimal protection of the environment from concrete batching or cement use on-site. **Measures:** • Cement must be delivered in sound and properly secured bags or in approved bulk containers. • Cement products in bags must be stored in storage containers to be provided at the construction camp and should not be opened long before use. • The storage facility and surrounding area must be kept clean to ensure that cement products do not pollute the surrounding environment. • Empty cement bags are to be collected in larger material bags which, once full, can be disposed of at a registered landfill site. • No cement bags must be burnt on site. • An impermeable cement mixing area will be designated, the area will remain in use for the duration of construction. • Care must be taken to prevent concrete-mix spills. • All concrete-mixmust be cleaned immediately	Cement delivery, storage and use will be in line with the EMPr requirements.	Contractor
	2.1.11	Water resource and soil pollution, and occupational &	**Objective(s):** To minimise impact on water resource and soil (land) or biodiversity, and occupational and public health and safety.	Rehabilitation with naturally occurring species, and	Contractor

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
	Vegetation management - Clearance	public health and safety	**Measures:** • If necessary, only registered herbicides must be used for weed control on-site. • Empty herbicides containers to be pierced after use to prevent reuse by workers and/or public. • Empty herbicides containers must be treated as hazardous waste and thus stored and disposed off accordingly. • All declared weeds and alien invasive plants to be cleared on-site. • Access roads must be kept to a minimum, and where possible existing public roads and tracks must be used.	measures stipulated in the EMPr adhered to	
	2.1.12 Faunal protection	Biodiverisity impact - Faunal	**Objective(s):** To prevent impact on faunal habitat and/or biodiversity, and mitigate disturbance to fauna. **Measures:** • Careful consideration is required when planning the placement of stockpiles, construction material and topsoil in order to avoid the destruction of habitats and to minimise the overall development footprint. • The extent of the proposed project must be demarcated as per thesite layout plan. • No construction personnel or vehicles may do work outside the demarcated area except those authorised to do so. Those areas surrounding the project site that are not part of the demarcated development area should be considered as “no-go” areas for employees and visitors.	Habitants restored to original state & No impact on fauna	Contractor & ECO

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• All those working on-site must be inducted and educated about the conservation importance of the fauna and flora occurring on-site. • The ECO must ensure that all Contractors and workers undergo Environmental Induction prior to commencing with work on-site. • The Environmental Induction must be conducted in language(s) that the workers understand. Where necessary, the ECO must translate induction material to meet language proficiency of all workers. • Reptiles and amphibians that may be exposed during construction activities must be captured for later release or translocation by a qualified expert. • No trapping or hunting of fauna is to take place. • Access control must be implemented at all times and "no-go" zones observed. • All faunal habitat areas, where disturbed, must be rehabilitated to ensure that faunal ecology is re-instated upon completion of construction works. • As part of the rehabilitation of disturbed areas, only indigenous plant species must be used to restore natural habitat for indigenous faunal species.		
	2.1.13 Noise managment	Ambient noise level impact	**Objective(s):** To minimise the disruption of ambient noise levels and / or increase in continuous noise levels. **Measurses:** • A register of all plant and equipment on-site must be maintained at all times. • All plant and equipment on-site must be in good working condition.	Noise level within regulated levels	Contractor & Safety Officer

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• Maintenance of plant and equipment must be as per manufacturer specification, and records must be produced on demand. • Working hours are to be viewed as 07:00 to 17:00.		
	2.1.14 Fire hazard	Ambient air quility impact, risk to public and private infrastructure assests	**Objective(s):** To prevent fires that can impact on (damage) public and private infrastructure assets in and around the construction site and injure staff. **Measures:** • No fire will be allowed on site. • Fire prevention talks must be held regularly. • Ensure adequate fire fighting equipment on-site and in all major working areas. • Fire fighting equipment to be in good working condition at all times. • Ensure that all workers on-site know the proper procedure in the incidence of fire break. • Smoking is not permitted in those areas considered as fire hazard. • Proper emergency escape routes should be established and clearly marked. • Follow manufacturers' guide for storage and transportation of flammable materials.	No fires outside designated area, fire fighting equipment in order and adequate	Contractor & Safety Officer
	2.1.15 Occupational health & Safety management	Incidents and injuries to workers	**Objective(s):** Prevention of injuries of workers on-site. **Measures:** • Workers must be provided with appropriate Personal Protection Equipment (PPE).	No injuries	Contractor & Safety Officer

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• Respect workers right to refuse to work in unsafe and unhealthy environment. • Provide first aid component and have trained first aid personnel on-site. • All work to be carried out under strict supervision and according to best practices. • Material stockpiles or stacks must be stable and well-secured to prevent collapse of the stockpile and possible injury to workers or local residents. • The owner must comply with the standards set out in the Occupational Health Safety Act. • Workers are not allowed to drink alcohol on duty. • Keep record of injuries on-site.		
2.2 Servicing and washing of vehicles and machinery	Workshop and Equipment Storage Areas	Water contamination. Soil contamination.	**Objective(s):** To prevent pollution of the environment by ensuring that service areas and wash bays for vehicles and machinery are made available and utilised. **Measures:** • During servicing of vehicles or equipment in the approved area, a suitable drip tray shall be used to prevent spills onto the soil, especially where emergency repairs are conducted outside the workshop area. • Leaking equipment must be repaired immediately or taken to the workshop area for storage with adequate pollution prevention equipment.	Evidence of prescribed servicing and washing services.	Contractor

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			• All potentially hazardous and non-degradable waste must be collected and removed to a registered waste disposal facility. • Workshop areas must be monitored for oil and fuel spills and such spills must be cleaned and re-mediated immediately. • The Contractor must be in possession of an emergency hydrocarbon spill kit that must be complete and available at all times on site. • The contractor must ensure that delivery drivers and plant operators are informed of all relevant procedures and restrictions required ensuring compliance with this document. • All vehicles and equipment must be well maintained to ensure that there are no oil or fuel leakages. • Hazardous waste can be stored on site for a maximum period of 90 days before it must be disposed of at a registered hazardous waste site. • All spills of hazardous substances must be noted in the environmental file by the CEO.		
2.3 Constructions workers' conduct	Personnel	Non-compliance with the EMPr requirements by construction workers	**Objective(s):** To ensure that construction workers are adhering to the EMPr requirements. **Measures:** • The contractor will adhere to all requirements of the EMPr and any other relevant legislation mentioned. • All personnel to undergo Environmental Awareness Training. Such training must include the requirements of the EMPr and	Personnel wearing proper safety uniform. Absence of trespassers on site.	Contractor and labourers.

PRE-CONSTRUCTION AND CONSTRUCTION PHASES					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicators**	**Implementation Responsibility**
			Environmental Autorisation as well as the location of sensitive areas of which the workers must be aware. A signed register of attendance must be kept for proof. • Induction must be attended by all parties involved in the construction. • The contractor, client and all construction employees must comply with the TCP Health and Safety plan. • All environmental incidents should be recorded in the incident book and reported to ECO, investigated, documented and kept on environmental file.		

3. TABLE 3: REHABILITATION

REHABILITATION PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure(Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
3.1 Rehabilitation of construction activity	3.1.1 Topography	Aesthetic	**Objective(s):** To restore the topography to its original condition. **Measures:** • Backfilling of stockpiles must be done in such a way that it will restore the original topography of the area. • Soil erosion measures should be implemented and monitored until topography is restored and stabilised. • Topsoil should be used on areas that are not built-up together with any vegetation that might have grown during storage period. • Construction site to be cleared of all building rubble. • All construction facilities and materials must be removed from the construction camp and rehabilitation carried out, including the removal of concrete and compacted earth platforms, filling station s and chemical toilets.	Restoration to original state	Contractor
	3.1.2 Fauna and Flora	Impact on Fauna and Flora Land management	**Objective(s):** Successful rehabilitation of all construction areas, prevention of erosion and restoration of biodiversity. **Measures:** • Rehabilitation must be carried out as soon as possible after the construction is completed.	No loss of Fauna and Flora due to construction activities. All disturbed areas successfully rehabilitated	Contractor

REHABILITATION PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure(Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
			• Any contaminated material or soil must be removed for disposal at a registered hazardous waste disposal facility and proof of disposal must be provided and kept in the file. The prescribed re-vegetation process must then be followed thereafter. • Soil erosion control structures such as soil berms, mitre drains, sandbags or rock bolsters should be used to control run-off where necessary. • Bare surfaces should be grassed with indigenous grass mix as soon as construction is complete in order to minimise exposure time. • Embankments should be planted with *Cynodon dactylon* which is a locally occurring grass that will help to stabilise the soil. • Alien plants should be continually monitored during and after construction so that re-colonisation does not occur. • Soil compaction should be minimised, the construction team should not interfere with any vegetation outside the site area. • During operation, anti-erosion measure should be followed. This includes the regular inspection of potential erosion on-site and the implementation of corrective measures should the erosion become a problem. Continual alien plant control and removal on site should be performed during construction and operational phases. • During operation, any potential pollution of water or soil by products and chemicals should be avoided by the correct use of pollution control measures set out in the EMPr.	within three months of completion of the Contract. No visible erosion scars three months after completion of the contract.	

4. TABLE 4: OPERATIONAL PHASE

OPERATIONAL PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
4.1 Operation of vehicle refuelling facility	4.1.1 Refuelling facility – operational environmental management (surface & groundwater, and land pollution)	Nuisance, Odour, Diseases, human and animal health, and management	**Objective(s):** To avoid and minimise damage to the natural environmental during operational phase by aligning the new facility with the Franchisee environmental management system (EMS) of the project proponent. **Measures:** • Environmental operational readiness requirements established during the execution phase must be implemented. • Integrate the new facility within the existing EMS and ensure continued environmental management.	Full compliance with operational requirements in the EA and the EMPr, and own EMS objectives.	Developer Environmental team
	4.1.2 Water Management	Pollution of water	**Objective(s):** To avoid and/or minimize pollution of water by waste and spillages during the operation of the facility. **Measures:** • Sufficient waste spill control measures should be provided to prevent risk of groundwater and surface water pollution. • Precautions should be taken to ensure that surface run-off, potential leaks or spills do not flow into stormwater channels. • Precautionary measures have to be implemented to prevent fuel spillages from flowing into surface run-off	No contaminations of water from fuel spillages.	Site Manager

OPERATIONAL PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
			without first passing through a simple gravity separator /settlement pond or similar protective installation. • Submersible pumps are to be fitted with leak detectors that check the integrity of the pipe-work where necessary. • Where water is supplied for human consumption, guidelines in terms of a water service provider should be adhered to. • Any spill should be cleaned up immediately and contaminated soil should be disposed off at a designated site. • The pump and refueling areas must be located on a hardened surface which drains into a common drain. • Automatic cut-off devices should be installed on pumps to avoid overfill and spillages during refueling. • Tanker delivery driver must be present during delivery of fuel with the emergency cut off switch. • In the event of the pump dispenser or the hoses being knocked over or ripped off, the fuel supply must be cut off by shear off valves. • Strict procedures for the management of the site must be developed and adhered to. • Staff must be trained to prevent spillages during fuel dispensing. • Water quality monitoring plan should be developed and implemented as prescribed by the Department of Water and Sanitation. • Two groundwater monitoring boreholes, one upslope and one downslope the filling stations should be drilled.		
	4.1.3 Fire Risks	Fire	**Objective(s):** Prevention of loss of property and injuries due to fires.	No incidents of fire on-site.	Site Manager

OPERATIONAL PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
			Measures: • Fire extinguishers must be easily accessible and all site operation vehicles are to be fitted with fire extinguishers. • Employees are to be trained on fire safety. • Local emergency fire brigade numbers are to be known to all employees. • The prescribed fire safety precautions in terms of the Occupational Health and Safety Act must be adhered to. • Developer management must develop an Emergency Response Plan. All staff must be adequately trained in the implementation of this plan. • All safety signs must be installed as required in the Health and Safety Plan.	Compliance with Health and Safety Act.	
	4.1.4 Air Quality – (Source: fuels fumes, emissions and odours)	Polluted Air	**Objective(s):** Minimise air pollution from delivery vehicles and refueling vehicles. **Measures:** • Ensure that drivers switch off the trucks once correctly parked, and avoid idling as much as possible • All operators should wear appropriate PPE to minimise exposure to fuel odours (e.g., gas masks).	No excessive smell from the site. No complaints from the public.	Site Manager and All Site Personnel.
	4.1.5 Waste management: – i.e. sludge handling, refinery oil, other hazardous and general wastes generated during maintenance and	Polluted water and soil by waste	**Objective(s):** To handle waste in such a manner that it will not result in pollution or cause nuisance. **Measures:** • To lower the potential for leachate formation, domestic waste is to be placed in a water tight container and disposed of on a regular basis. • Used oil must be disposed of in accordance with the correct procedures.	Refinery oil will be disposed off at the licensed Hazardous waste disposal facility. A specialized waste disposal company will be contracted to	Site Manager

OPERATIONAL PHASE					
Activity	**Aspect**	**Potential Impact**	**Mitigation Measure (Objective and Target)**	**Performance Indicator**	**Implementation Responsibility**
	operational activities		• All equipment that has the potential for spillages or leakages shall be equipped with drip-trays. • Care must be taken to ensure that oil spillages and effluent are limited during maintenance. In the event of a spillage/leakage, the source of the spill or leak must be identified and correctly addressed. • The spillage/leakage must be cleaned immediately and any contaminated soil must be removed and disposed off through appropriate waste disposal method.	ensure the safe handling, storage and transportation of the chemical waste.	