ROUTE 7 TRADING 105 CC

Environmental Management Plan

Departmental Ref No: 17/2/3 N-62

December 2012

SHANGONI
Management Services (Pty) Ltd

ENVIRONMENTAL MANAGEMENT PLAN

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Departmental Ref No: 17/2/3 N-62

December 2012

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PROJECT DETAILS

Mpumalanga Department of Economic Development Environment and Tourism (MPDEDET)

Reference No.: 17/2/3 N-62

Project Title: Proposed Proposed construction of Route 7 Truck Depot for the purpose of storage, servicing and washing of Route 7 trucks on Holding 174 and 175 Eloff Small Holdings, Extension I.R., Delmas, Mpumalanga.

Project Number: URS/DEL/24-05-11

Compiled by: Ms. Patricia van der Walt

Date: December 2012

Location: Holding 174 & 175 Eloff Small Holdings, Delmas

Technical Reviewer: Mr. Lourens de Villiers

Signature

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1 INTRODUCTION

This Environmental Management Plan (EMP) document describes mitigation measures to be implemented for activities that take place at the Route 7 truck depot.

The EMP is applicable to the entire truck depot area, to ensure that environmental control measures, for all aspects, are implemented throughout the business area. The responsibility for the implementation of this EMP on site rests with Route 7 Trading 105 CC and the Environmental Control Officer (ECO).

The EMP should also be viewed as a dynamic document. Methods should be updated and improved during implementation, as site conditions become clearer and material or methods improve. The EMP attempts to provide the most practicable methods to promote sound environmental management during the lifespan of the project.

2 SITE DOCUMENTATION

The following documentation must be available at the site office at all times:

- a copy of the Basic Assessment Report,
- a copy of the Environmental Management Plan (EMP),
- a copy of the Environmental Authorisation, and
- a complaints register.

2.1 Environmental management plan

The Environmental Management Plan (EMP) should be kept on file in the office. The mitigation measures indicated in this Environmental Management Plan must be implemented by all the site workers, drivers and contractors.

2.2 Emergency numbers

Emergency numbers (e.g. developer, police, fire department, ambulance, etc.) must be prominently displayed at the site office. Contact details of adjacent landowners or users identified during the basic assessment process should also be kept on file in the office.

2.3 Legislation

2.3.1 Laws of general application

- Constitution of the RSA, 1996 (Act No 108 of 1996)
- National Environmental Management Act, 1998 (Act No 107 of 1998)
- Environment Conservation Act, 1989 (Act No 73 of 1989)
- Promotion of Access to Information Act, 2000 (Act No 2 of 2000)
- Protected Disclosures Act, 2000 (Act No 26 of 2000)

2.3.2 Atmospheric emissions

- Atmospheric Pollution Prevention Act, 1965 (Act No 45 of 1965)
- National Building Regulations and Building Standards Act, 1977 (Act No 103 of 1977)
- Environment Conservation Act, 1989 (Act No 73 of 1989) – Noise Control Regulations in terms of Section 25 of the Environment Conservation Act, 1989
- National Environmental Management Act, 1998 (Act No 107 of 1998)

2.3.3 Water Management

- National Water Act, 1998 (Act No 36 of 1998)

2.3.4 Hazardous Chemicals and Substances

- Hazardous Substances Act, 1973 (Act no. 15 of 1973)
- National Road Traffic Act, 1996 (Act no. 83 of 1986) – GN R225 of 17 March 2000 – National Road Traffic Regulations, 2000
- Occupational Health and Safety Act, 1993 (Act No 85 of 1983) – GN 1179 of 25 August 1995 – Regulations for Hazardous Chemical Substances (HCS)

2.3.5 Waste management

- National Environmental Management: Waste Act (NEMWA) No 59, of 2008
- Environment Conservation Act, 1989 (Act No 73 of 1989)
- National Road Traffic Act, 1996 (Act No 93 of 1996) – GN R225 of 17 March 2000 – National Road Traffic Regulations
- Hazardous Substances Act, 1973 (Act No 15 of 1973)
- Occupational Health and Safety Act, 1993 (Act No 85 of 1993) – GN 1179 of 25 August 1995 – Hazardous Chemical Substance Regulations

2.3.6 Planning of new activities

- Development Facilitation Act, 1995 (Act No 67 of 1995)
- National Environmental Management Act, 1998 (Act No 107 of 1998)

2.3.7 Biodiversity

- National Environmental Management Biodiversity Act, 2004 (Act No 10 of 2004)
- Conservation of Agricultural Resources Act, 1983 (Act No 43 of 1983)
- National Veld and forest fire Act, 1998 (Act No 101 of 1998)
- Agricultural Pest Act, 1983 (Act No 36 of 1983) – GN R276 of 5 March 2004
- Fencing Act, 1963 (Act No 31 of 1963)
- National Forest and Fire Laws Amendment Act (Act No 12 of 2001)

2.3.8 Land and Soil Management

- National Environmental Management Act, 1998 (Act No 107 of 1998)
- Environment Conservation Act, 1989 (Act No 73 of 1989)

2.3.9 Heritage resources

- National Heritage Resources Act No 25 of 1999 (Act No 25 of 1999)

2.3.10 Protected areas

- National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003)

Route 7 Trading 105 CC must comply with all other relevant legislation (including the bylaws of the local municipality).

3 ENVIRONMENTAL MANAGEMENT PLAN

Refer to the tables below for the EMP.

3.1 Biophysical environment

3.1.1 Geology

Table 1: Environmental Management Plan – Geology.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) Minimise the disturbance of the local geology by following proper planning and construction practices. b) To ensure that the geotechnical features of the site are taken into account in order to prevent any impact on structures to be built.	The following reconmendations were extracted from the report titled: Roberts R.A., Geotechnical Investigation Eloff Erf 174 & 175, Vela VKE Consulting Engineers, Delmas, October 2011, which is attached hereto in Annexure D. • A bearing capacity of 50kPa may be taken on the sand at a depth of 0.5m. • Should higher loadings be needed a bearing capacity of 100kPa may be taken for the ferricrete at a depth of 1.0m. • No blasting would be required due to the fact that the material up to 1m can be classified as being soft material according to SABS 1200D Earthworks classification , or as “soft class 2” (Material that can be readily excavated with the aid of a pick) as per the Department of Water Affairs. • As a result of a lack of site specific data on dolomite in the area, it is assumed that the site classifies as D2/D3 and that the precautions listed in SANS 1936 needs to be taken into account: ➢ Stormwater runoff to be in impermeable channels and water from truck wash

	areas to be fed into this; ➢ Water must not be allowed to pool on the surface of the site; ➢ Fuel reticulations shall be above ground.
Operational phase a) To reduce the impact on the geology of the site.	a) Alien and invasive vegetation will be eradicated and controlled by manual removal, chemical application and/or biological control. The regulations in terms of the Conservation of Agricultural Resource Act, 1983 apply. b) Soil conservation measures should be implemented to address any soil erosion that may occur (Refer to Section 3.1.3 Soil, Table 3 Topsoil preservation). c) The storm water management measures (Refer to Section 3.1.6 Surface water, Table 9, Storm water control) shall be inspected on a regular basis in order to ensure that the structures function properly and are not causing soil erosion. d) If soil erosion is noted, appropriate remediation measures shall be implemented.

3.1.2 Topography

Table 2: Environmental Management Plan – Topography.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) To ensure that the impact on the topography is limited to the construction phase.	a) Before any construction takes place the proposed area for the expansion will be pegged out. All construction activities will be limited to these areas. b) Reduce the need for stockpiling of material e.g. topsoil removed during the construction operations.
Operational phase a) To reduce the impact on the topography of the site.	a) Alien and invasive vegetation will be eradicated and controlled by manual removal, chemical application and/or biological control. The regulations in terms of the Conservation of Agricultural Resource Act, 1983 apply.

	b) The storm water management measures (Refer to 3.1.6 Surface water, Table 9, Storm water control) shall be inspected on a regular basis in order to ensure that the structures function properly and are not causing soil erosion. c) If soil erosion is noted, appropriate remediation measures shall be implemented.

3.1.3 Soil

Table 3: Environmental Management Plan – Topsoil preservation.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) Retain topsoil quality by implementing effective soil management practices.	a) Before any construction takes place the proposed area for expansion will be pegged out. All construction activities will be limited to these areas. b) Topsoil (top 150mm) is to be stockpiled in discrete areas and retained for future landscaping efforts. c) Topsoil stockpiles shall not exceed 1m in height and 2m in width and shall be protected from wind, erosion and runoff by covering with a suitable fabric approved by the ECO. d) Cleared indigenous vegetation should be used as a brush pack on topsoil stockpiles for erosion prevention. e) If sterilization of the topsoil during stockpiling has occurred inorganic fertilizers will be used to supplement the soils before seeding of the area takes place..

Table 4: Environmental Management Plan – Soil erosion.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) Prevent soil erosion.	a) The contractor is to ensure that all reasonable measures be taken to limit erosion and sedimentation from construction activities. Erosion protection measures include cut-off drains and/or berms.

	b) Cleared indigenous vegetation can be stockpiled for possible re-use as a brush pack for erosion prevention. c) Should construction in areas that have been stripped not commence within a short period of time, the exposed areas shall be re-vegetated or stabilised. Soil stabilising measures could include rotovating in straw bales (at a rate of 1 bale/20m²), applying mulching or brush packing, or creating windbreaks using brush or bales. d) Once the construction activities have been completed, the remaining disturbed area must be covered with topsoil, sloped and re-vegetated as soon as possible using suitable grass species. This re-vegetation will assist in reducing the potential for erosion. e) If sterilisation of the topsoil during stockpiling has occurred, inorganic fertilizers should be used to supplement the soil before seeding of the area takes place. Compacted soil should be ripped to ensure effective re-vegetation. f) Effective storm water measures will be implemented to minimise soil erosion (Refer to Section 3.1.6 Surface water, Table 10, Storm water Control).
Operational phase a) Prevent sheet, rill and gully erosion from potentially impacting infrastructure and roads. b) Prevent the degradation of soil characteristics such as, quality, structure, stability, texture, water-holding capacity, etc.	a) Monitoring and remediation of soil erosion shall be undertaken. Compacted soil should be ripped to ensure rapid vegetation establishment. b) Effective storm water measures shall be implemented to minimise soil erosion (Refer to Section 3.1.6 Surface water, Table 10, Storm water control).

Table 5: Environmental Management Plan – Soil pollution prevention

OBJECTIVES	MITIGATION MEASURES
Construction and operational phase a) Minimise the pollution of the soil through effective and proper; ➢ Waste management. ➢ Handling, storage and disposal of substances and hazardous chemicals. ➢ Maintenance of ablution facilities. ➢ Traffic and vehicle control.	a) Correct waste management measures (Refer to Section 3.2. Waste management) will be implemented. No dumping of any kind of waste (general, construction, hazardous waste, etc.) will take place on site. b) Proper handling, storage and disposal of hazardous chemicals (Refer to 3.3.2 Handling, Storage and Disposal of Substances and Hazardous Chemicals). c) Sufficient ablution facilities should be provided during the construction phase and these facilities should be maintained (Refer to Section 3.2.5 Ablution Facilities). d) Appropriate management of increased traffic (Refer to 3.3.3 Vehicles, equipment and transportation of goods) and proper onsite vehicle control. e) During the washing process, the use of bio-degradable products that break down easily in the environment must be used. f) Wastewater generated from the washing of vehicles will be collected into a conservancy tank. Spillage of contaminated wastewater into the surrounding environment is not allowed

3.1.4 Land use and capability

Table 6: Environmental Management Plan - Land use and capability.

OBJECTIVES	MITIGATION MEASURES
Construction and Operational phase a) To reduce the potential impact of the proposed activity on the surrounding interested and affected parties.	a) Proper use of the truck depot to optimise the land use (The applicant is in the process of rezoning current land use). b) The requirements of this Environmental Management Plan will be implemented

	by all the workers.

3.1.5 Fauna and flora

Table 7: Environmental Management Plan – Vegetation.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) Minimise the destruction of indigenous vegetation. b) Control of alien invasive plant species.	a) Site clearing is to be limited to only the area necessary for carrying out the specified work. b) The building contractor is to draw up a plan for submission to the ECO and the depot manager indicating the locations of construction infrastructure including the mixing and storage areas during construction phase. c) The site boundary is to be clearly demarcated and screened from the commencement of works. The erection of the final boundary fence or wall is preferable. d) All demarcation is to be regularly maintained. e) No unauthorised entry, stockpiling, dumping or storage of equipment outside the site boundary is permitted. f) All construction activities, plant, labour and materials are to be restricted within the site boundary. g) Removal of vegetation is to be avoided until such time as soil stripping is required.
Operational phase a) Control of alien invasive plant species.	a) Alien and invasive vegetation must be eradicated and controlled by manual removal, chemical application and biological control. The regulations in terms of the Conservation of Agricultural Resource Act, 1983 apply.

Table 8: Environmental Management Plan – Fire control

OBJECTIVES	MITIGATION MEASURES
Construction phase a) Minimise the destruction of natural indigenous vegetation. b) To prevent or minimise the impact of a potential fire outbreak	a) Appropriate equipment to deal with fire is to be readily available on site and maintained. b) Safety signage including “No Smoking”, “No Naked Lights” and “Danger”, and product identification signs, should be clearly displayed on fuel stores and tanks. c) Proper management of activities that may result in a fire, such as; ➢ Handling, storage and disposal of hazardous chemicals and flammable materials (Refer to 3.3.2 Handling, Storage and Disposal of Substances and Hazardous Chemicals). ➢ Hot work activities (Refer to Section 3.5.3 Environmental preparedness and response). ➢ Smoking and cooking (Refer to Section 3.5.3 Environmental preparedness and response).
Operational phase a) Minimise the destruction of natural indigenous vegetation. b) To prevent or minimise the impact of a potential fire outbreak	a) Appropriate equipment to deal with fire is to be readily available on site and maintained (e.g. fire extinguishers and firefighting equipment) together with appropriate management practices (Refer to Section 3.5.3 Environmental preparedness and response).

3.1.6 Surface water

Table 9: Environmental Management Plan – Surface water use

OBJECTIVES	MITIGATION MEASURES
Construction and Operational phases a) Prevent unlawful use of water, by registering and licensing appropriate water use activities. b) Prevent water wastage.	a) No surface water will be abstracted for use at the truck depot. Water used at the depot will be supplied by the municipality. b) No water use license application is necessary as no water use activities listed under Section 21 of the National Water Act, 1998 (Act No. 36 of 1998) take place on site. c) The wetland study imposed a 30 meter no development buffer from the boundary of the specified wetland area. d) Prevent water wastage though educating all employees on the importance of water and possible means to prevent water wastage.

Table 10: Environmental Management Plan – Stormwater control

OBJECTIVES	MITIGATION MEASURES
Construction phases To prevent the contamination of 'clean' rain water by 'dirty' areas through control of storm water runoff.	a) Clean storm water runoff from the surrounding environment must be channeled away from 'dirty' areas. These 'dirty' areas include the; washbay, chemical storage areas and all waste storage areas. b) Clean storm water should be diverted and kept in the environment surrounding the site. c) Storm water measures should be inspected on a regular basis in order to ensure that the structures are functional and not causing soil erosion. d) No construction may take place within the 30m no development buffer surrounding the wetland.

Operational phases To prevent the contamination of 'clean' rain water by 'dirty' areas through control of storm water runoff.	a) Clean storm water runoff from the surrounding environment must be channeled away from 'dirty' areas. These 'dirty' areas include the washbay, chemical storage areas and all waste storage areas. b) Clean storm water should be diverted and kept in the environment surrounding the site. c) Storm water measures should be inspected on a regular basis in order to ensure that the structures are functional and not causing soil erosion. d) All reasonable measures must be taken to prevent the dirty water (e.g. wash water) from contaminating the watercourse (wetland).

Table 11: Environmental Management Plan – Surface water pollution

OBJECTIVES	MITIGATION MEASURES
Construction and Operational phases a) Preventing or minimising the potential pollution of surface water as a result of incorrect waste management. b) Preventing or minimising the potential of surface water pollution as a result of improper handling, storage and disposal of substances and hazardous chemicals. c) Preventing or minimising the potential pollution of surface water as a result of insufficient and poorly maintained ablution facilities. d) Preventing or minimising the potential pollution of surface water as a result of traffic.	a) Correct waste management measures (Refer to Section 3.2. Waste management) will be implemented. No dumping of any kind of waste (general, construction, hazardous waste, etc.) will take place on site. b) Proper handling, storage and disposal of hazardous chemicals (Refer to 3.3.2 Handling, Storage and Disposal of Substances and Hazardous Chemicals). c) Sufficient ablution facilities should be provided during the construction phase and these facilities should be maintained (Refer to Section 3.2.6 Ablution Facilities). d) Appropriate management of increased traffic (Refer to 3.3.3 Equipment and vehicle maintenance) and proper onsite vehicle control. e) During the washing process, the use of bio-degradable products that break down easily in the environment must be used.

	f) Spillage of contaminated wash water into the environment should be prevented (Refer to 3.2.5 wastewater generated by washing activities). Refer to Carter-Brown S.,September 2011 in Annexure D for more reconmendations on preventing contamination and sedimentation of the wetland during construction activities.

3.1.7 Groundwater

Table 12: Environmental Management Plan – Unlawful groundwater use.

OBJECTIVES	MITIGATION MEASURES
Construction and operational phase a) Prevent unlawful use of water, by registering and licensing appropriate water use activities. b) Prevent water wastage.	a) No groundwater water will be abstracted for use at the truck depot. Water used at the depot will be supplied by the municipality. b) No water use license application is necessary as no water use activities listed under Section 21 of the National Water Act, 1998 (Act No. 36 of 1998) take place on site. c) Prevent water wastage though e.g.: ➢ Monitor water usage, and ➢ Educate all employees on the importance of water and possible means to prevent water wastage

Table 13: Environmental Management Plan – Groundwater pollution.

OBJECTIVES	MITIGATION MEASURES
Construction and operational phase a) Preventing or minimising the potential pollution of	a) Correct waste management measures (Refer to Section 3.2. Waste management) will be implemented. No dumping of any kind of waste (general,

groundwater as a result of incorrect waste management. b) Preventing or minimising the potential of groundwater pollution as a result of improper handling, storage and disposal of substances and hazardous chemicals. c) Preventing or minimising the potential pollution of groundwater as a result of insufficient and poorly maintained ablution facilities.	construction, hazardous waste, etc.) will take place on site. b) Proper handling, storage and disposal of hazardous chemicals (Refer to 3.3.2 Handling, Storage and Disposal of Substances and Hazardous Chemicals). c) Sufficient ablution facilities should be provided during the construction phase and these facilities should be maintained (Refer to Section 3.2.6 Ablution Facilities).

3.1.8 Air quality

Table 14: Environmental Management Plan – Dust control

OBJECTIVES	MITIGATION MEASURES
Construction phase a) To minimise the impact of dust generated by the construction vehicles on the ambient air quality.	a) Make use of the tarred Nr. 10 Road on the western border of the site instead of the dirt road running along the Northern border of the property. b) Use water as dust suppression agent during the clearance of the area for development.breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions.
Operational phase a) To prevent or minimise the potential impact of air pollution caused by vehicles and other activities onsite.	a) The trucks must make use of Road No 10 to get access to the depot site. b) The parking area and onsite roads are to consist of gravel-cover that is not dust generating.

Table 15: Environmental Management Plan – Generators and vehcles.

OBJECTIVES	MITIGATION MEASURES
Construction and operational phase a) To prevent or minimise the potential impact of air pollution caused by vehicles and other activities onsite.	a) Conduct regular maintenance of vehicles to address wear of tires and breaks. Optimal engine combustion will allow for 'cleaner' exhaust emissions. b) Conduct regular maintenance on the generators.

3.1.9 Sites of archaeological and cultural interest

Table 16: Environmental Management Plan - Sites of archaeological and cultural interest.

OBJECTIVES	MITIGATION MEASURES
Construction and operational phase a) To prevent any impact on archaeological or other heritage remains that may be excavated during the construction phase.	a) If any archaeological or other heritage remains are exposed during the construction and/or operational phase, the South African Heritage Resources Agency (SAHRA) must be contacted. In this regard, the applicant must take note of the requirements in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999).

3.1.10 Environmental sensitive areas

Table 17: Environmental Management Plan – Wetland

OBJECTIVES	MITIGATION MEASURES
Construction and Operational phase a) To prevent environmental degradation of biodiversity and its carrying capacity as a result of inadequate precaution to protect sensitive areas.	**Storm water control** a) Clean storm water runoff from the surrounding environment must be channeled away from 'dirty' areas. These 'dirty' areas include the; washbay, chemical storage areas and all waste storage areas. b) Clean storm water should be diverted and kept in the environment surrounding

	the site. c) Storm water measures should be inspected on a regular basis in order to ensure that the structures are functional and not causing soil erosion. d) Where necessary place culvets underneath road foundations. e) All reasonable measures must be taken to prevent the dirty water (e.g. wash water) from contaminating the watercourse (wetland). **Prevention of surface water pollution** a) Correct waste management measures should be implemented. b) Proper handling, storage and disposal of hazardous chemicals and pesticides c) Sufficient ablution facilities should be provided and these facilities should be maintained. d) Appropriate management of traffic. e) During the washing process, the use of bio-degradable products that break down easily in the environment must be used. f) Spillage of contaminated wash water into the environment should be prevented and it must be ensured that wash water is directly captured into the conservancy tank. The following reconmendations were extracted from the report titled: Roberts R.A., Carter-Brown S., Wetland Delineation-Proposed Route 7 Truck Depot portions 174 and 175 Small Holdings Delmas Mpumalanga, AFZELIA Environmental Consultants CC, September 2011, Hilton, which is attached hereto in Annexure D.

	a) A detailed Environmental Management Programme, that ensures all construction activities are to best standards, must be approved by the Competent Authority. b) The EMPr must include a Spill Contingency Plan for both construction and operational phases. c) Petrochemicals and oil must be stored on am impervious surface and within an impermeable bund wall. d) Bunded areas must be able to contain 110% of the volume of liquids being stored; and effective even under high temperature (in case of fire). e) Bund areas must drain to a closable valve or blind collection point / sump for regular, controlled release of bund contents such as rainwater, wash water, or spilled petrochemical products. f) All re-fuelling points must occur on impervious surfaces and within a bunded area or with the use of drip trays. g) Water from the wash bay facility must be reused and recycled through the system. This can be achieved via a series of treatment dams; or via engineered water reclaim systems. h) Only organic, biodegradable soaps, waxes and degreasers must be used in the wash bay facility. i) Recycled water should pass through a retention dam and reed / sedge bed for the breakdown of soaps, waxes, degreasers and petrochemical compounds in the water. Bio-digester products may be added to the retention dams, if required. j) The retention dam should comprise an open body of water to allow for the

	denaturing of pollutants by the sun. Water must flow from the retention dam into a dense reed / sedge bed, consisting of wetland species (such as *Phragmites australis* and *Juncus kraussi).* The rate of flow through the dam and reed-bed should be at least 48 hours. Retention time must be monitored to ensure the system is functioning effectively: the slower the movement through the system, the better. The proposed method of stormwater management involving the digging of trenches at the lower end of the property is unacceptable, as untreated water would flow directly into the wetland. k) Oil and water separation devices must be fitted into the drains of the wash bay, workshop and forecourt areas. Devices must be fitted as close to the source of the contaminant as possible to retain the oil / hydrocarbon in a floatable, non-emulsified form. l) A water sample must be taken from the wetland for chemical analysis prior to the commencement of construction and operation of the proposed Truck Stop. This will serve as the benchmark standard against which further tests can be compared. m) Periodic (at least one per year) chemical analysis of a water sample from the wetland must take place. The results of such tests must be compared to the benchmark standard in order to ascertain whether the operational phase of the development is having a detrimental effect on the wetland water quality. Any detrimental impacts attributed to the Truck Stop must be reported and the cause remedied immediately.

3.1.11 Aesthetic aspects

Table 18: Environmental Management Plan – Noise.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) To ensure that the activities to be undertaken during the construction phase do not impact significantly on the construction personnel and noise levels of the surrounding area.	a) The site workers and contractors will adhere to the requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) regarding hearing protection and noise control measures. b) Regular maintenance of vehicles and equipment. c) All equipment and machinery should be fitted with adequate silencers. d) No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site. e) No noisy work is to be conducted over the weekends or on public holidays.
Operational phase a) To maintain a dB reading of less than 50dB at the site boundary.	a) Create awareness among all employees (including constractors/subcontractors) and drivers on the effects of noise pollution. b) Implement a sound code of conduct wherein all employees (including constractors/subcontractors) and drivers are: ➢ required to plan ahead. ➢ not allowed to whistle or shout to get the attention of the security or any other co-worker. ➢ to use the hooter solely for avoiding a collision with another vehicle, animal or human. Hooters are not to be used to get the attention of the security guard to open the gate. ➢ to avoid allowing engines to idle.

	➢ to turn their radios down or switch them off when on site. ➢ to close doors quietly. c) Make sure the machinery on site is in proper working condition, fitted with the necessary silencing equipment. d) Move noisy equipment (Such as fridges and generators) farther away from the receiver (neighbours). e) Make sure that the workers on site stick to the prescribed working hours. f) Enclose especially noisy activities or stationary equipment. g) Erect noise barriers. The wall, next to Road no 2 on the southern side of the site, will be increased in height to be 2.8m high.

Table 19: Environmental Management Plan – Visual impact/Lighting.

OBJECTIVES	MITIGATION MEASURES
Construction and operational phase a) To limit the potential visual impact as a result of the development on the surrounding interested and affected parties.	a) Where possible use full cut off light fixtures. b) Use correct light fixtures to direct light into areas as needed. c) Where possible use light timers, sensors and/or other controls, to turn lighting off when not needed. d) Use the appropriate level of light for the task at hand. e) Proper maintenance of lighting fixtures. f) Create awareness among all employees (including constractors/subcontractors) and drivers on the effects of light pollution.

Table 20: Environmental Management Plan – General housekeeping.

OBJECTIVES	MITIGATION MEASURES
Construction and operational phase a) To prevent nuisance, such as odour, to the surrounding interested and affected parties as a result of poor housekeeping.	a) It is the responsibility of the site workers as well as the contractors to ensure that the site is kept neat and tidy. b) Proper waste management measures should be implemented at the site (Refer to Section 3.2 Waste Management). c) All site workers and contractors must comply with the requirements of the Environmental Management Plan. d) Structures on the property should be painted in natural shades as far as practically possible. e) Gardens should be kept tidy.

3.2 Waste management

3.2.1 General/domestic waste

Table 21: Environmental Management Plan – Construction waste.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) To prevent or minimise the contamination of the natural environment by pollutants from general and hazardous waste generated onsite.	a) Building rubble is to be kept separate from other construction waste. Rubble is to be kept clean of brick ties, plastics, papers and cement bags at all times. b) Rubble stockpiles and waste structures shall be positioned to permit easy access by removal trucks. c) Accumulation of large stockpiles of rubble and waste is not permitted. Waste is to be removed at regular intervals, with a minimum frequency of once a week. d) A construction waste collection structure shall be erected on commencement

	of construction work within the boundaries of the site. The minimum requirement is as follows: ➢ 4 Ready-fence panels (3m x 1.8m) covered with shade cloth or hessian, one panel being movable to provide access. The structure shall have a roof (ready fence panel, or similar) to contain waste materials in windy conditions. The floor shall be lined with DPC plastic to prevent ground contamination from leachate such as cement powder residue or empty chemical or paint containers. ➢ Alternatively, waste skips can be used but also need to be covered with shade cloth to ensure the containment of waste. e) All waste is to be disposed of at approved landfill sites. No burning or burying is permitted. f) The contractor shall delegate a specific waste management job description to an individual or team if directed by the ECO.

Table 22: Environmental Management Plan – General/domestic and hazardous waste.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) To prevent soil, surface- and ground water pollution and the nuisance as a result of poor waste management.	a) Installation of sufficient waste bins and skips/bulk containers where necessary. b) All containers (bins and skips/bulk containers) shall be kept in a clean and hygienic manner. c) Containers (bins and skips/bulk containers) utilised for the disposal of general and hazardous waste must be demarcated accordingly. d) Waste material may only be temporarily stored at areas demarcated for such storage practices.

	e) General waste shall be stored in a manner that prevents the harbouring of pests. f) General waste materials should always be stored or disposed of separately from hazardous waste material (e.g. oil, diesel). g) Skips/bulk containers should be removed and emptied at the municipal landfill site on a weekly basis or more as the need arise. h) Oil rags, empty chemical containers and other hazardous waste must be disposed of at the Holfontein Hazardous landfill site (located approximately 15Km from the site).
Operational phase a) To prevent soil, surface- and ground water pollution and the nuisance as a result of poor waste management.	a) Develop a waste management plan. b) The waste management plan should consider the type of waste, description, source, storage, disposal method, disposal facility and responsible person. c) The implementation of the waste management plan should ensure. ➢ Installation of sufficient waste bins and skips/bulk containers where necessary. ➢ All containers (bins and skips/bulk containers) shall be kept in a clean and hygienic manner. ➢ Containers (bins and skips/bulk containers) utilized for the disposal of general and hazardous waste must be demarcated accordingly. ➢ Waste material may only be temporarily stored at areas demarcated for such storage practices. ➢ General waste shall be stored in a manner that prevents the harbouring of pests. ➢ General waste materials should always be stored or disposed of separately

	from hazardous waste material (e.g. oil, diesel). ➢ General and hazardous waste generated during production is to be disposed of in appropriately demarcated bins. ➢ Bins are then emptied into appropriately demarcated skips/bulk containers with every break or more as the need arise. ➢ Skips/bulk containers should be removed to a nearby landfill site on a weekly basis or more as the need arise. ➢ Safe disposal certificates should be requested from general and hazardous landfill sites with every waste dumping. ➢ These safe disposal certificates should be kept on file to illustrate compliance with the cradle to grave principle. ➢ The ECO shall monitor the compliance with the cradle to grave principle. d) No incineration of any kind of waste will be permitted onsite.

3.2.2 Wastewater from washing of vehicles and equipment

Table 23: Environmental Management Plan – Wastewater from washing of vehicles and equipment

OBJECTIVES	MITIGATION MEASURES
Construction phase a) To prevent or minimise the contamination of the natural environment by pollutants from general and hazardous waste generated onsite.	a) No washing of vehicles or equipment is permitted outside washbay area. b) A dedicated temporary cleaning area is to be identified to facilitate washing of all cement and painting equipment.
Operational phase a) To prevent or minimise soil and groundwater contamination	a) All wastewater and cleaning liquids from the washbay will be collected in a conservancy tank and transported off site by a licensed waste

as a result of wash water runoff into the veldt.	removal contractor (municipality). b) The washbay should be regularly swept and kept clean of waste. Ideally the wash bay should be cleaned by sweeping using dry absorbents, which will negate the need to dispose of large volumes of wastewater. c) The washbay should be esigned to exclude rainwater, and to retain, collect, reuse, or dispose of all wastewaters. d) The following features should be included: ➢ The wash bay should be roofed. This will prevent rain from entering the wash bay and thus the contamination of clean rainwater by wash water. ➢ For every three meters in height above the bund, the roof should have a one-metre overhang, to prevent wind-driven rain entering the wash bay. ➢ If the above mentioned overhang is impractical, walls or skirts can be used instead. ➢ The rainwater run-off can be collected in a tank for on-site reuse as wash water or diverted directly to a storm water discharge point. ➢ Bunds (speed humps) should be installed at the wash bay entry and exit points. These humps will contain the contaminated wash water within the wash bay. ➢ To facilitate wastewater collection and reduce absorption of

	chemicals, the floor surface of a wash bay should be paved with material that has a low permeability (e.g. concrete). ➢ Wash bay should be designed in such a manner that all wash water drains to a channel within the wash bay area. The floor should be graded to drain towards a collection point or channel. The wash bay floor and the drainage channel must have a minimum grade of 1:80.

3.2.3 Ablution facilities (Conservancy tank)

Table 24: Environmental Management Plan – Ablution facilities (Conservancy tank).

OBJECTIVES	MITIGATION MEASURES
Construction phase a) To prevent or minimise the contamination of the natural environment by pollutants from poor sanitation onsite.	a) Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers. b) The Contractor shall ensure that any chemicals and/or waste from the ablution facilities are not spilled on the ground at any time. c) Ablution facilities are to be serviced weekly or more frequently if required. d) The sewerage conservancy tank that is currently serviced by the municipality shall remain and kept in proper working condition.
Operational phase a) To prevent or minimise the contamination of the natural environment by pollutants from poor sanitation onsite.	a) Sufficient ablution facilities shall be provided – minimum of 1 toilet per 15 workers. b) The location of toilets is to be approved by the ECO prior to site establishment, but shall be located within 100m of any work point. c) Ablution facilities shall be inspected and maintained to prevent or minimize blockage and leakages.

	d) Ablution facilities are to be serviced weekly or more frequently if required. e) Toilets should have properly closing doors and supplied with toilet paper. f) Awareness of the importance of proper hygiene should be created among employees. g) Ablating anywhere other than in the toilets shall not be allowed.

3.3 Resource management

3.3.1 Water, electricity and material usage

Table 25: Environmental Management Plan - Resource management.

OBJECTIVE	MITIGATION MEASURES
Construction phase a) To prevent or minimise the impact of redundant activities and use of material that lead to unnecessary reduction of valuable resources.	a) Proper environmental training and awareness. b) Regular maintenance and inspection of equipment, such as hose pipes, to prevent leaks. c) Regular site inspection by supervisors.
Operational phase a) To prevent or minimise the impact of redundant activities and use of material that lead to unnecessary reduction of valuable resources.	**General** a) Proper environmental training and awareness. b) Monitoring of resource consumption. c) Regular maintenance and inspection of equipment, such as pipes, pumps and fans. d) Regular site inspection by supervisors. **Water** a) Leaking taps and hose pipes are to be repaired immediately.

	b) Running water taps and hosepipes are not to be left unattended. c) Unused standpipes are to be buried to prevent damage and resultant water leaks. d) Taps are to be attached to secured supports and used in preference to standpipes with no valve mechanism to open and close the water supply. All hose and tap connections are to be fitted with correct and appropriate plumbing fittings. **Electricity** a) Save electricity by turning off lights and computers when leaving the office. b) Halogen light bulbs convert approximately 80% of the energy used into heat rather than light. Replace spent light bulbs with energy saving CFLs (compact fluorescent light) or newer and more efficient LEDs (light emitting diode).

3.3.2 Handling, storage and disposal of substances and hazardous chemicals

Table 26: Environmental Management Plan – Concrete and cement.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) To prevent or minimise the potential impacts of construction activities on soil, surface water and/or groundwater.	a) No mixing of concrete or cement directly on the ground is permitted. The mixing of concrete will only be done on mortarboards (dugga-boards). b) Bricklayers and plasterers are to minimise any cement spill or runoff in their work area and are to ensure that the work area is cleaned of all cement spillage at the end of each workday. c) Both used and unused cement bags are to be stored in weatherproof containers so as not to be affected by rain or runoff.

	d) Contaminated soil resulting from concrete or cement spills, including residue produced by the washing of cavities, are to be removed immediately after the spillage has occurred and placed on the appropriate rubble stockpile.

Table 27: Environmental Management Plan – Chemical substances.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) To prevent and minimise soil and water pollution as a result of poor management and accidental spills of hazardous chemical substances including fuel, greases and oils used onsite.	a) Identify all hazardous chemical substances used onsite, including fuel, greases and oils. b) Obtain the material safety data sheet of each of these hazardous chemical substances. c) Ensure that the material safety data sheets have sufficient information to enable the user to take the necessary measures to protect his/her health and safety and that of the environment. d) Material Safety Data Sheets for all hazardous chemical substances must be readily available on site. e) Keep a stock inventory register of all chemicals in the store. f) Powders must be stored above liquids. g) Proper storage of chemicals in a lockable, well ventilated building. h) Ensure adequate access control for the storage area. i) Storage areas for hazardous chemicals are to comply with standard fire safety regulations. j) Safety signage including “No Smoking”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed in areas housing chemicals.

	k) Appropriate equipment to deal with emergency spill incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks, drums or containers for contaminated water. l) Chemicals are to be properly labeled and handled in a safety conscious manner. m) All personnel handling hazardous chemicals and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE). n) Ensure that diesel/ fuel tanks are in a bunded area with capacity of holding 110% of the total storage volume. o) The removal of only the daily-required amount of chemicals to be used from the shed. p) If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense chemicals. q) Use of drip trays during filling of machinery or equipment. Drip trays should be emptied into secondary containers on a regular basis. r) Ensure that any spilled chemical cannot exit the designated storage area by constructing a hump / bump at the exit, or store chemicals in a spill tray. s) Clean all spillage of fuels, lubricants and other petroleum based products immediately. t) The contaminated material must be disposed of in accordance with the waste management procedure. u) No hazardous chemical must be discarded in the sewage or storm water system. v) Train staff on the use of chemicals in accordance with the risks as described

	in the material data sheets. w) Soil contaminated with hazardous chemical substances shall be treated as hazardous waste and removed from site.No hazardous chemical must be discarded in the sewage or storm water system. x) Train staff on the use of chemicals in accordance with the risks as described in the material data sheets. y) Soil contaminated with hazardous chemical substances shall be treated as hazardous waste and removed from site.
Operational phase a) To prevent and minimise soil and water pollution as a result of poor management and accidental spills of chemical substances (fuel, greases, oils, vaccines, detergents etc).	a) Identify all chemical substances used onsite, including fuel, greases, detergents etc. b) Obtain the material safety data sheet of each of these chemical substances. c) Ensure that the material safety data sheets have sufficient information to enable the user to take the necessary measures to protect his/her health and safety and that of the environment. d) Material Safety Data Sheets for all hazardous chemical substances must be readily available on site. e) Develop a dangerous goods management plan based on the material safety data sheets of all identified chemical substances and the 1995 Hazardous Chemical Substances Regulations in terms of the Occupational Health and Safety Act, 1993 (Act no. 85 of 1993). f) Implement a dangerous goods management plan. g) Keep a stock inventory register of all chemicals in the store. h) Powders must be stored above liquids. i) Proper storage of chemicals in a lockable, well ventilated building.

	j) Ensure adequate access control for the storage area. k) Storage areas for hazardous chemicals are to comply with standard fire safety regulations. l) Safety signage including “No Smoking”, “No Naked Lights” and “Danger”, and product identification signs, are to be clearly displayed in areas housing chemicals. m) Appropriate equipment to deal with emergency spill incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks, drums or containers for contaminated water. n) Chemicals are to be properly labeled and handled in a safety conscious manner. o) All personnel handling hazardous chemicals and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE). p) Ensure that diesel/ fuel tanks are in a bunded area with capacity of holding 110% of the total storage volume. q) The removal of only the daily-required amount of chemicals to be used from the shed. r) If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel. s) Use of drip trays during filling of machinery or equipment. Drip trays should be emptied into secondary containers on a regular basis. t) Ensure that any spilled chemical cannot exit the designated storage area by

	constructing a hump / bump at the exit, or store chemicals in a spill tray. u) Clean all spillage of fuels, lubricants and other petroleum based products immediately. v) The contaminated material must be disposed of in accordance with the waste management procedure. w) No hazardous chemical must be discarded in the sewage or storm water system. x) Train staff on the use of chemicals in accordance with the risks as described in the material data sheets. y) Soil contaminated with hazardous chemical substances shall be treated as hazardous waste and removed from site.

3.3.3 Vehicles, equipment and transportation of goods

Table 28: Environmental Management Plan – Road infrastructure

OBJECTIVES	MITIGATION MEASURES
Construction and Operational phase a) To prevent or minimise the potential impacts of the construction activities on the natural environment.	a) Ensure that all construction vehicles and Route 7 vehicles using adjoining roads are roadworthy. b) All loads should be securely fastened when being transported and all vehicles are to adhere to the tonnage limitation and acquire a permit as required. c) All speed limits and other traffic regulations on the public roadways must be adhered to.

Table 29: Environmental Management Plan – Equipment and vehicle maintenance.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) To prevent hydrocarbon pollution of soils, surface- and ground water by spilling of fuel, grease or oil and leaking equipment and vehicles.	a) Equipment and vehicles are to be repaired immediately upon developing leaks. b) Drip trays shall be supplied for all repair work undertaken on machinery on site. c) Drip trays are to be utilised during daily greasing and re-fuelling of trucks and other machinery to contain incidental spills. d) Drip trays are to be inspected daily for leaks and effectiveness and emptied when necessary. e) Appropriate equipment to deal with emergency spill incidents (spill kits) is to be readily available at high risk areas, such as the fuel bay and workshop areas. f) Soil contaminated with hazardous substances, fuel or oil shall be treated as hazardous waste and removed from site. g) Proper oil dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense oil. h) All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids. i) Inspect vehicles for oil leaks on entering the facility to ensure vehicles are in sound condition to reduce the risk of oil or diesel spillages.
Operational phase a) To prevent hydrocarbon pollution of soils, surface- and ground water by spilling of fuel, grease or oil and leaking equipment and vehicles.	a) Inspection and maintenance of equipment, generators and vehicles, owned by Route 7 truck depot, shall take place on a regular basis. b) Security shall inspect vehicles on entering the facility to ensure vehicles are in sound condition to reduce the risk of oil or diesel spillages. c) Equipment, generators and vehicles are to be repaired immediately upon developing leaks.

	d) Generators must be stored on a concrete floor in a bunded area. e) Drip trays shall be supplied for all repair work undertaken on machinery on site. f) Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to contain incidental spills and pollutants. g) Drip trays are to be inspected daily for leaks and effectiveness and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. h) Appropriate equipment to deal with emergency spill incidents is to be readily available on site. This includes fire extinguishers, spill kits for hydrocarbon spills, drip trays for equipment and/or machinery leaks, drums or containers for contaminated water. i) Soil contaminated with hazardous substances, fuel or oil shall be treated as hazardous waste and removed from site. j) If refueling on site or from drums, the ground must be protected and proper dispensing equipment is to be used i.e. hand pumps and funnels. Drums may not be tipped to dispense fuel. k) All liquid fuels (petrol and diesel) are to be stored in tanks or containers with lids.

3.4 Human environment

3.4.1 Interested and affected parties

Table 30: Environmental Management Plan - Interested and affected parties.

OBJECTIVES	MITIGATION MEASURES
Construction and operational phases a) To prevent wear of access roads, potential accidents on access roads, potential unpermitted transport of materials and potential loss of materials being transported on the access roads. b) To ensure good relations with all interested and affected parties by creating open channels of communication to address matters of concern that may arise. c) To ensure environmental compliance as indicated in the Environmental Authorisation issued and reduce potential environmental impacts.	**Compliance** a) The site workers must ensure compliance with the relevant legislation at all times. b) The mitigation measures indicated in this Environmental Management Plan will be implemented by all the site workers and contractors. **Communication** a) Communication between the interested and affected parties and the contractors will be established and maintained. b) In order to provide feedback with regards to complaints received, a complaints register will be kept at the site. The complaints register will record the following: Date when complaint was received, Name of person who reported the complaint and when and how the concern was addressed.

3.4.2 Environmental awareness and training of employees

Table 31: Environmental Management Plan - Environmental awareness and training.

OBJECTIVES	MITIGATION MEASURES
Construction phase a) Uneducated and uninformed choices may result in a variety of wrongful activities that can have potential impacts the surrounding environment. Informing employees of their impacts on the environment and how they can prevent or minimise these impacts will lead to sound environmental practices.	a) The Depot Manager, all current employees as well as future employees are required to attend on-site Environmental Awareness Training to be given by the appointed ECO. Copies of attendance certificates needs to be kept on file. b) Training material must cover all aspects of the EMP and include: 1. The proper useage of spill kits; 2. The interpretation of material safety data sheets (MSDS's) for all chemicals and or hazardous substances used and stored at the depot workshop; 3. Effective separation of clean and dirty water through the utilization of correct drain systems for disposal of effluent; 4. Maintenance of storm water trenches; 5. General housekeeping; 6. Waste separation; 7. Water conservation. c) The Depot Manager and contractors should maintain accurate records of any training undertaken for instance copies of the attendance register or attendance certificates. d) The ECO shall monitor the contractor's compliance with the EMP requirements. e) Environmental signage is to be displayed on the site including – "no smoking", "fire hazards", etc

Operational phase a) Uneducated and uninformed choices may result in a variety of wrongful activities that can have potential impacts the surrounding environment. Informing employees of their impacts on the environment and how they can prevent or minimise these impacts will lead to sound environmental practices.	a) All employees are required to attend onsite Environmental Awareness Training prior to commencing work on site. b) Follow-up Environmental Awareness Training may be required from time to time as new employees commence work or for specific activities that may potentially impact the environment. c) The Depot manager is to maintain accurate records of any training undertaken. d) The ECO shall monitor the facility managers' compliance with the requirement to provide sufficient environmental awareness training to all site staff. e) Training is to cover all aspects of the EMP and procedures to be followed.

3.4.3 Employee health, safety and wellness

Table 32: Environmental Management Plan – Employee health, safety and wellness.

OBJECTIVES	MITIGATION MEASURES
Construction and operational phase a) To ensure the health and safety of employees working onsite.	a) All workers working with dangerous and complex equipment must be trained in the correct handling of equipment. b) All accidents or incidents must be reported to management. c) Workers must be trained in basic accident and emergency response. d) Permanent first aid boxes must be located at readily accessible locations. e) The workers have freedom of association. f) Workers have access to running water, sanitation and medical facilities, g) Workers have a right to basic housing if housed on site. h) Workers receive the required minimum wage as stipulated in the labour law. i) No child labour will be utilized.

3.5 Environmental performance guidelines

3.5.1 Self performance assessment

Table 33: Environmental Management Plan – Self performance assessment

OBJECTIVES	MITIGATION MEASURES
Operational phase a) The aim of this guideline is to provide guidance during self performance evaluations of the operation engaged into by the organisation.	a) Compile a checklist applicable to the site, detailing all operational requirements to manage each identified risk. The checklist should typically contain all the identified aspects. b) During the audit/performance evaluation, specific attention should be given to the effectiveness of EMPs and other mitigation measures, c) Self performance assessment should be carried out at least annually, and d) Ensure that all information obtained from changed processes etc. is communicated to all the applicable documents

3.5.2 Record keeping

Table 34: Environmental Management Plan – Record keeping.

OBJECTIVES	MITIGATION MEASURES
Operational phase a) The main aim of this guideline is to ensure record keeping on the truck depot complies with good management practices and to have all records available at any time.	a) All records regarding maintenance of equipment, application of pesticides. financial records, rainfall and any other relevant records will be kept for at least two years. b) All the records will be kept on a central point at the office whilst electronic backups will be kept at an offsite location. c) Any records that need to be kept for longer according to legislation will be kept indefinitely or as long as legislation requires.

3.5.3 Environmental preparedness and response

Table 35: Environmental Management Plan – Fire outbreak

OBJECTIVES	MITIGATION MEASURES
Construction and operational phase a) To prevent the occurrence and spreading of a veldt fire.	**Equipment** a) Basic fire-fighting equipment is to be placed at strategic locations on site and readily available (e.g. at the site office, flammable material store and watchman's container). b) Equipment is to be maintained in good working order to the satisfaction of local fire authorities. c) All personnel handling fuels and hazardous materials are to be issued with the appropriate Personal Protective Equipment (PPE). **Signage** a) Safety signage including "No Smoking", "No Naked Lights" and "Danger", and product identification signs, are to be clearly displayed on fuel storage facilities and tanks. b) Emergency numbers are to be clearly displayed. c) All construction workers shall be issued with ID badges and clearly identifiable uniforms. **Training** a) An emergency procedure, taking into consideration all potential emergencies, such as a fire outbreak, hazardous chemical spill, etc. should be compiled.

	b) The contractor is to ensure that all employees, including sub-contractors and their employees, are trained on the emergency procedure. c) Follow-up emergency training may be required from time to time as new subcontractors or crews commence work. **Flammable materials** a) Flammable materials storage must comply with standard fire safety regulations. b) All flammable materials are to be stored in a suitable, lockable storage area. c) Combustible materials may not accumulate on the construction site. d) Access to fuel and chemical stores should be strictly controlled.

Table 36: Environmental Management Plan – Hazardous substance spillage

OBJECTIVES	MITIGATION MEASURES
Construction and operational phases a) The purpose of this guideline is to provide guidance on how to prevent and manage emergency situations.	a) Contain spillage (immediate area). b) Notify supervisor of spillage. c) Clean-up the spillage and disposed of contaminated material in accordance to the MSDS. d) Remediate the spillage.

Table 37: Environmental Management Plan – External reporting requirents

OBJECTIVES	MITIGATION MEASURES
Construction and operational phases a) The purpose of this guideline is to provide guidance on how to prevent and manage emergency situations.	a) Major emergency incidents which may cause danger to the public or the environment, which includes pollution of a water resource, must be reported as per the requirements of Section 30 of the National Environmental Management Act, 1998 and Section 20 of the National Water Act, 1998.

3.6 Decomissioning phase

3.6.1 Rehabilitation

Table 38: Environmental Management Plan – Rehabilitation

OBJECTIVES	MITIGATION MEASURES
a) Minimise disturbance to local geology, topography and hydrology. b) Restore soil structure & chemistry to a state which approximates the state that it was in prior to disruption and construction activities (Agriculture). c) Control the growth of declared weeds and/or invader plants. d) To ensure good relations with all interested and affected parties by creating open channels of communication to address matters of concern that may arise during decommission phase.	a) Prepare a rehabilitation plan; ➢ Assess the environmental significance of the land. ➢ Identify major limitations to rehabilitation ➢ Set rehabilitation objectives ➢ Define rehabilitation actions ➢ Monitoring, reporting and auditing ➢ Completion targets b) Rehabilitation objectives should consider; ➢ Long-term geological stability ➢ Soil structure & chemistry ➢ Ground & surface water processes ➢ Ecological implications of the altered soils and landforms

	➢ Impact of climatic variability ➢ Nutrient cycling ➢ Impacts of disturbance & fire ➢ Plant diversity & classification ➢ Reproductive capacity & dispersal ➢ Plant genetics & provenance ➢ Plant succession & competition ➢ Ecosystem interactions & services ➢ Weed biology & ecology ➢ Microbial diversity & ecology ➢ Animal diversity & classification ➢ Animal succession & migration c) Implement rehabilitation plan. d) In order to provide feedback with regards to complaints received, a complaints register will be kept at the site. The complaints register will record the following: Date when complaint was received, Name of person who reported the complaint and when and how concern was addressed. e) Complete rehabilitation, signoff and handover of site.