

If you can't measure it
You can't control it



CK 96/44367/23 (SA)
CC/2005/3576 (NAM)

UPDATED ENVIRONMENTAL MANAGEMENT PLAN

(EMP REPORT)

for

Okapana Service Station CC - Ondangwa

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STATEMENT PAGE

National Environmental Health Consultants CC (NEHC CC) is an Approved Inspection Authority in terms of the Occupational Health and Safety Act (85 of 1993). (Certificate No.: CI 057 0H) SA and A.I.A 23/09 Namibia, **Labour Act, 1992 (Act 6 of 1992)** as amended under the **Labour Act 2007, (Act 11 of 2007)**. And registered at the Allied Health professions Council of Namibia (HPCNA) as an Environmental Health Practitioner Reg. No.: EPH00901 under the **Allied Health Professions Act, 2004 (Act. 7 of 2004)**.

J. Cornelissen, conducted this Environmental Inspection on behalf of **NEHC CC** and hereby declares that the results/findings given in the report are a true reflection of the conditions encountered during the survey/observations on site.

Where relevant published and validated methods exist, they are always used in preference to novel methods. If a novel method is applied, a summary of validation and reference to the internal Standard Operating Procedure(s) is provided.

Whilst recommendations offered in this report are made in good faith and every effort is made to ensure the professional integrity thereof, the final responsibility lies with the client to ensure the correctness and suitability of these recommendations, prior to implementation thereof. **NEHC CC** or its officers shall in no way be liable for any losses suffered by the client as a result of the implementation of such recommendations.

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12th of May 2023
EMP REPORT DATE

Date: 18 th of May 2023	Company: Okapana Service Station CC – Ondangwa	Occupational Hygienist Johan Cornelissen	Project No: 2023/087/D
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Date: 18 th of May 2023	Company: Okapana Service Station CC – Ondangwa	Occupational Hygienist Johan Cornelissen	Project No: 2023/087/D
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EXECUTIVE SUMMARY

National Environmental Health Consultants CC (NEHC CC) was commissioned, and instructed by **Okapana Service Station CC – Ondangwa**, to assist them with the undertaking of, and with the conduction of an Updated Environmental Management Plan, for their existing fuel retail facility in Ondangwa.

It should be noted that the Environmental Impact Assessment and the initial Environmental Management Plan herein, was done, and prepared by NEHC CC, in 2020. Against the current legislative backdrop pertaining to environmental matters, and affairs, framed by the Environmental Management Act, 7 of 2007, the Namibian Environmental Assessment Policy, as well as the Environmental Impact Assessment Regulations of 2012, **Okapana Service Station CC – Ondangwa** was statutorily obliged to apply for an Environmental Clearance Certificate, prior to the commencement of the operation of their existing fuel retail facility in Ondangwa.

The initial Environmental Clearance Certificate was approved, and issued by the Ministry of Environment, Forestry and Tourism in 2020. In keeping with the statutory provisions relating to Environmental Clearance Certificates, **Okapana Service Station CC – Ondangwa** had this updated EMP report drafted, and prepared, in order to assist them with their application for the renewal of their existing Environmental Clearance Certificate.

For detailed findings and recommendations please see 6 monthly environmental inspections reports.

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Glossary and Abbreviations

ACRONYM	DESCRIPTION
CC	Close Corporation
CEs	Consulting Engineers
CO	Contraction Phase
CLO:	Community Liaison Officer
DS	Design & Planning Phase
DE	Decommissioning Phase
ECO	Environmental Control Officer
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
MET	Ministry of Environment and Tourism
MAWF	Ministry of Agriculture, Water and Forestry
OP	Operational Phase
PM	Project Manager (Developer Representative)
RA	<i>Resident Architect</i>
DEA	Directorate of Environmental Affairs
RE	Resident Engineer
ELO	<i>The Environmental Liaison Officer</i>
VOC's	Vapours

Definitions:

Environment: Surroundings in which an organization operates, including air, water, fauna, flora, natural resources, humans, and their interrelations.

General waste: Waste that may be disposed of without prior treatment. May be disposed of at a municipal dumpsite.

Hazardous waste: An inorganic or organic element or compound that, because of its toxicological, physical, chemical or persistency properties may exercise detrimental, acute or chronic impacts on human health and the environment. This can be generated from a variety of activities and may take the form of liquid, sludge, gas or solid. Hazardous waste can also be defined to be any waste that directly or indirectly represents a threat to human health or to the environment.

Recyclable Waste: Hazardous or general waste that has the potential to be recycled.

Waste: Any matter gaseous, liquid and solid or any combination thereof designated as an undesirable or superfluous by-product, emission, residue or remainder of any process or activity.

Waste Stream: The cycle of a specific waste from the point of origin up to disposal (cradle to grave concept).

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1 INTRODUCTION

The project proponent, **Okapana Service Station CC - Ondangwa** has appointed National Environmental Health Consultants CC (NEHC CC) as the independent consultant, to assist them with the completion of, and updating of their Environmental Management Plan (EMP).

The purpose of an EMP is to guide the current operational phase of the existing fuel retail facility. This is done to eliminate or mitigate the various possible risks to the environment and its surrounding inhabitants during this phase. And it will subsequently ensure that minimal damage will occur to these areas during the operational phase of the existing fuel retail facility, based on the mitigation measures identified for inclusion in the EMP, as a result of the Environmental Scoping Process, which was concluded in 2020.

The ultimate goal of the EMP is to meet social, economic, and biophysical objectives to such an extent, that the overall product of the activity, will not result in a net negative impact. The economic benefit of the existing fuel retail facility in Ondangwa, should outweigh the negative environmental impacts addressed during this assessment.

1.1 Locality



Figure 1: Location of the existing fuel retail facility, Okapana Service Station CC. This also shows where in Namibia the fuel retail facility is situated.

1.2 Project Background Information

Okapana Total, in the Oshana Region, is situated on erf numbers: 1336 and 1337, Main Road, Ondangwa. At the time, at which **Okapana Service Station CC – Ondangwa** commenced their

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operations in 1993, they had no neighbours surrounding them. However, presently they are now surrounded by Cashbuild, Namib Mills, and a Professional Pre-Primary School. In July 2013, the existing fuel retail facility, **Okapana Service Station CC – Ondangwa** was renovated and revamped, and now consists of not only a filling station, with fuel being supplied by Total, but also a Bonjour Shop (Café). The **Okapana Service Station CC – Ondangwa** totals an area of 5 681m².

This Updated Environmental Management Plan (EMP) addresses the management of environmental Impacts related to the existing fuel retail facility, namely **Okapana Service Station CC – Ondangwa**. The documents should be used for managing, mitigating, and monitoring the environmental impacts associated with the decommissioning of the site as identified during the Environmental Scoping Report conducted on the site, and completed in 2020. The Environmental Scoping Report will be valuable as a reference source for understanding this EMP and for placing it into perspective.

1.3 Objectives of the EMP

The primary objectives of the EMP are as follows:

- To describe action plans for achieving the mitigation measures described in the Environmental Scoping Report; and
- To indicate responsibilities regarding the implementation of these action plans.

NEHC CC completed the Environmental Scoping Report in 2020, where-after **Okapana Service Station CC – Ondangwa** was issued with an Environmental Clearance Certificate (ECC) by the Ministry of Environment, Forestry, and Tourism (MEFT). This updated EMP is for the renewal of **Okapana Service Station CC – Ondangwa's** existing ECC.

1.4 Key Characteristics of the report

Table 1: Shows an overview of the project.

Element	Description
Proponent	Okapana Service Station CC. Mr. Willem Archer
Name of the site	Okapana Service Station CC "Filling Station"
Property Description	Okapana Total, Erf no 1336 and 1337, Main Road Ondangwa, Oshana Region.
Site Coordinates	S17°54'40.2" E15°58'12.0"
Extent of the site	5 681m ²
Current capacity of the site	Existing fuel retail facility
Number of underground storage tanks	3 x Tanks (2 x 46 000 L ULP 95ppm and 1 x 46 000 L 50ppm Diesel)
Number of aboveground fuel pumps	5 x 6 hose pumps (fuel dispensers) and 1 x 4 hose pump (fuel dispenser)
Baseline environment	<ul style="list-style-type: none"> ➤ Limited vegetation on the site; ➤ There are no surface water bodies located within a 500m radius of the site; ➤ Area is characterized as not having a shallow water table.

1.5 COMPLIANCE TO REGULATIONS

Okapana Service Station CC – Ondangwa will need to comply with the following legislation:

- The Constitution of the Republic of Namibia, 1990,
- Namibia's Green Plan,
- Vision 2030: Third National Development Plan of Namibia, 2006/7 – 20011/12,

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- Environmental Assessment Policy, 1995,
- Draft Wetland Policy of 2003,
- The National Environmental Health Policy,
- GOVERNMENT GAZETTE OF THE REPUBLIC OF NAMIBIA, Government NOTICES, dated 06 February 2012 number 4878.
- Environmental Management Act, 7 of 2007,
- The Water Resources Management Act, 24 of 2004,
- Labour Act, 6 of 1992: Regulations for the Health and Safety of Employees at Work,
- Labour Act, 11 of 2007,
- Nature Conservation Ordinance, 4 of 1975, as amended in 1996,
- Atmospheric Pollution Prevention Ordinance, 11 of 1976,
- Petroleum Products and Energy Amendment Act, 3 of 2000,
- Soil Conservation Act, 76 of 1969,
- Legislation related to effluent and waste-water disposal Model Drainage Regulations, 1996,
- Hazardous Substances Ordinance, 14 of 1974, and its amendments,
- Nature Conservation Ordinance Amendment Act, 5 of 1996,
- National Policy on Tourism for Namibia, 2008, and
- National Heritage Act, 27 of 2004.

1.6 Responsible Parties

1.6.1 Phases of the Project

The point of departure for any EMP, is to take a pro-active route by addressing and minimizing any potentially significant problem before it occurs. In particular this EMP deals with the current operational phase of the existing fuel retail facility.

1.6.2 Roles and Responsibilities

Various role players have a range of responsibilities to perform during the operational phase and if any upgrades or construction take place on the existing fuel retail facility:

1.6.2.1 Project Manager (PM) (Developer Representative)

If any upgrades or construction takes place on the existing fuel retail facility, the PM will be responsible for the following:

- The PM will be responsible for ensuring that the development is implemented according to the requirements as set out in the EMP.
- The PM should ensure that sufficient resources are available to the other role players to efficiently perform their tasks in terms of the EMP.
- The PM must appoint an independent Environmental Control Officer (ECO) to ensure strict adherence to the EMP.

1.6.2.2 Resident Architect (RA)

If any upgrades or construction takes place on the existing fuel retail facility, the RA will be responsible for the following:

- Only architects approved by the PM will be allowed to work on the project and will oversee the individual contracts between the owners of the entire site or portions thereof, and the contractors.

1.6.2.3 Environmental Control Officer (ECO)

If any upgrades or construction takes place on the existing fuel retail facility, the ECO will be appointed at the start of the construction, and is mandated to do the following:

- Ensure that all contractors/subcontractors/employees are fully aware of their environmental responsibilities. This will take the form of an initial environmental awareness-training program, in which the requirements of this document will be explained.

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- Any damage to the environment must be repaired as soon as possible after consultation between the ECO, the Consulting Engineer, and the relevant contractors.
- The ECO shall monitor their actions to ensure that the developer and/or contractor are adhering to all stipulations of the EMP.
- The ECO shall be responsible for monitoring the construction activities throughout the project by means of site visits and meetings. This should be documented as part of the site meeting minutes.
- The ECO must sign off, and the PM must certify that all clean-up and rehabilitation, or any remedial action required, are completed prior to transfer of properties.
- A post-construction environmental audit is to be conducted to ensure that all conditions in the EMP have been adhered to.

1.6.2.4 Auditing / Inspections

If any upgrades or construction takes place on the existing fuel retail facility:

- The appointed ECO must on a regular basis should inspect the site where necessary.
- The PM or the contractor's representative will accompany the ECO to on-site inspections.
- The contractor will use the formats presented in this EMP to report to the PM in terms of compliance to this document.
- When, in the opinion of the ECO, a construction activity will result in environmental damage, the ECO will issue instructions to the contractor or the PM, who will in turn order the contractor, to halt the activity. Spot fines or penalties may be levied for non-compliance.

1.6.2.5 Method Statements

If any upgrades or construction takes place on the existing fuel retail facility, construction method statements from the contractor will be required, for specific activities in sensitive environments on request of the Authorities or the ECO. All method statements will form part of the EMP documentation, and is subject to all the terms and conditions, as contained within the EMP document. For each instance wherein it is requested that the contractor submit a method statement to the satisfaction of the ECO, the format should clearly indicate the following:

- What - a brief description of the work to be undertaken;
- How - a detailed description of the process of work, methods, and materials;
- Where - a description / sketch map of the locality of work; and
- When - the sequencing (phases) of actions, with commencement date and completion date estimates.

The contractor must submit the method statement before any particular construction activity is due to start. Work may not commence until the method statement has been approved by the ECO.

1.6.2.6 Record Keeping

All records related to the implementation of this management plan must be kept together in an office where it is safe. Records should be kept for two years and must be available for scrutiny by the relevant Authority, at any time.

1.6.2.7 Resident Engineer (RE)

If any upgrades or construction takes place on the existing fuel retail facility, a RE acts as a direct, on-site resource for all technical aspects related to the development. He/she is available on the construction site at all times, overseeing all phases of the construction activities. He/she will liaise with the ECO where required to ensure the effective implementation of the EMP.

1.6.2.8 Consulting Engineers (CEs)

If any upgrades or construction takes place on the existing fuel retail facility, the engineers involved during the planning, design, and construction period. They are not available on site at all times but

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are part of the specialist team during the final design and construction stages to advise on appropriate environmental management and mitigation.

1.6.3 Standards

If any upgrades or construction takes place on the existing fuel retail facility:

- The ECO will keep written and photographic records of the site and its surroundings before, after, and during construction on the site.
- The contractor will keep records of construction activities, instructions received from the ECO and the PM concerning environmental matters.
- The ECO will keep records of cases of non-compliance and remedial actions taken.
- Where no quantitative standards are applicable, visual standards will apply.
- The contractor will rehabilitate the site to a condition acceptable to the ECO and respond timeously to any complaints and instructions regarding construction activities.

1.6.4 EMP Objectives

This EMP must be used during the current operational phase of the existing fuel retail facility.

The objectives of this plan are to:

- Ensure all environmental safeguards are carried out correctly.
- Manage site activities effectively and coordinate with other players in the project.
- Minimize adverse impacts on the environment.
- Ensure that environmental mitigation measures are in place from the start of the project.
- Minimize disruption to fauna and flora and neighbouring landowners / communities.
- Monitor the project.

1.6.5 EMP Context

This EMP fits into the overall planning process of the project and should be implemented by the developer as soon as the Authorities have approved it. A copy of the EMP should always be available on site.

There are at least 2 role players participating in the environmental management of the site, namely:

- **Okapana Service Station CC - Ondangwa**; and
- Service Providers.

This EMP must be attached as an Appendix to service provider tender documents and referred to in the tender documents as *special conditions of tender*.

The ultimate responsibility for the implementation of the EMP lies with **Okapana Service Station CC – Ondangwa**. This responsibility, in some instances may be delegated to contractors in the employ of **Okapana Service Station CC - Ondangwa** for practical purposes, but **Okapana Service Station CC – Ondangwa** will retain legal accountability. In that capacity, **Okapana Service Station CC – Ondangwa** should appoint duly qualified personnel, and delegate the responsibility to ensure the implementation, and management of the EMP, and who will:

- Know the contents and implications of the Environmental Scoping Report, and monitor the implementations of the Environmental Scoping Report's findings, using the EMP.
- Guide, advise, and consult the contractors on environmental issues during the decommissioning of the service station.
- Revise the EMP as required, and inform the relevant parties of the changes.
- Protect the environment.

The responsibility of the Service Providers and Contractors during the decommissioning of the service station is to:

- Ensure that all requirements of the EMP are communicated to, understood, and followed by all persons working on the project who may have an impact on the environment.
- Ensure that a procedure exists for reporting incidents and resolving any problems rapidly.

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- Keep good records relating to the compliance/non-compliance with the conditions of the authorization.
- These records must be made available to the relevant authority within seven days of a written request to do so

2 PHASES OF THE PROJECT

The aim of this Environmental Management Programme (EMPr) is to derive mitigation measures that should be made binding, when additional contraction activities result in the appointment of contractors on site, as well as measures that should be implemented during the current operational phase. The purpose of the EMPr is to provide solutions to problems before they occur. If adhered to, this EMPr should limit corrective measures required during the current operational phase of the existing fuel retail facility.

The EMPr deals with the following phases as detailed below:

2.1 The Planning Phase

This is an existing fuel retail facility, thus there will be no planning phase.

2.2 Pre-construction Phase

This is an existing fuel retail facility, thus there will be no Pre-construction Phase.

2.3 The Construction Phase

This is an existing fuel retail facility, thus there will be no construction phase.

If any upgrades or construction takes place on the existing fuel retail facility, the majority of the impacts during this phase will have a direct and immediate effect (e.g., pollution, noise and dust). Continual monitoring of the site during the construction phase will help in identifying impacts as they occur.

2.4 The Operational Phase

This is an existing fuel retail facility thus, this updated EMP report mainly refers to the current operational phase. Potential environmental impacts arising during the current operational phase can be minimized, if the EMP is followed, and adhered to.

3 ANTICIPATED ENVIRONMENTAL IMPACTS

The anticipated adverse impacts, requiring mitigation relating to the biophysical, and socio-economic environment for the current operational phase of the existing fuel retail facility are listed below.

3.1 Operational Phase - Adverse Impacts

- Visual Intrusion and Light Pollution,
- Traffic,
- Noise,
- Atmospheric Pollution and Odours,
- Safety and Security,
- Soil and Groundwater Contamination (Surface spillage of fuel),
- Subsurface leaks (lines, tanks),
- Risks of Fires and Explosions, and
- Waste Generation and Disposal.

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4 RESPONSIBILITIES

The Environmental Management Programme (EMPr) specifies the responsibilities of the role players, as follows:

- **The Developer/Oil Company:** The Developer remains ultimately responsible for ensuring that the facility is implemented according to the requirements of the EMPr throughout all the phases of the project. This includes the current operational phase, and if any upgrades or construction takes place on the existing fuel retail facility.
- **The Environmental Control Officer (ECO):** The ECO is appointed by the developer as an independent monitor of the implementation and management of the EMPr i.e., independent of the developer and contractor. The ECO is responsible for providing feedback on potential environmental problems associated with the development. The ECO has the right to enter the site, and to do monitoring and auditing at any time, subject to compliance with health and safety requirements applicable to the site (e.g., wearing of protective head gear and safety boots). The ECO will be responsible for a minimum of monthly site audits, followed by an environmental control report, that will detail the status of environmental compliance, and highlight mitigation. The ECO will be responsible for liaising with authorities, such as MEFT. The ECO must submit monthly environmental audit reports to the authorities. The ECO must indicate the necessary corrective action measures to eliminate the cause of the non-conformances. The ECO is also responsible for liaising with contractors, informing them of any decisions that are taken, concerning environmental management during the construction phase. This would also include informing the contractors of the necessary corrective actions to be taken.
- **Site Agent:** The Site Agent is usually a site engineer or project manager who is the developer's most senior representative on site, and who coordinates activities on site. The site agent must follow the advice of the ECO with regards to environmental management, and ensure that the contractor abides by all requirements, as stipulated by the ECO.
- **Contractor:** The contractor as the developer's agent on site, is bound by the Environmental Clearance Certificate, and the EMPr conditions through his/her contract with the developer and is responsible for ensuring that conditions of the EMPr are strictly adhered to, and complied with, at all times. The contractor must comply with all orders (whether verbal or written) as given by the ECO, the project manager or site agent in terms of the EMPr.
- **The Environmental Liaison Officer (ELO):** The Contractor shall submit to the Site Agent a nominated representative of the Contractor as an ELO, to assist with day-to-day monitoring of the construction activities for the contract. Issues raised by the ECO will be routed to the ELO, for the contractor's attention. The ELO shall be permanently on site during the construction phase to ensure daily environmental compliance with the EMPr. The ELO should preferably be a senior, and respected member of the construction crew, as past experience has revealed that ELO's that can relate to the workforce are most effective for information transfer and ensuring compliance with the EMPr. The ELO will report directly to the ECO regarding environmental compliance. The site audits undertaken by the ECO will be undertaken in conjunction with the ELO. The ECO will point out areas of concern, and the ELO will be responsible for ensuring day-to-day compliance with the EMPr. Should any emergencies arise, the ELO will alert the ECO who will take action. There shall be an approved ELO on site at all times. Before the Contractor commences with each construction activity, the ELO shall give to the site agent, a written statement setting out the following:
 - The type of construction activity.
 - Locality where the activity will take place.
 - Identification of impacts that might result from the activity.
 - Identification of activities or aspects that may cause an impact.
 - Methodology for impact prevention for each activity or aspect.
 - Emergency/disaster incident and reaction procedures (need to be demonstrated).
 - Treatment and continued maintenance of impacted environment.

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- **Community Liaison Officer (CLO):** The contractor must appoint a CLO to act as a point of contact between the contracting team, and the community that will be affected by the construction activities. Complaints from the community about construction activities must be channelled through the CLO. The CLO's responsibility is to liaise with the Interested and Affected Parties.

5 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

The following tables form the core of this updated EMPr for the current operational phase of the existing fuel retail facility of **Okapana Service Station CC - Ondangwa**. These tables should be used as a checklist on site. The aim of this EMPr is to derive measures that should be implemented during the current operational phase.

The purpose of the EMPr is to provide solutions to problems before they occur. If adhered to, this EMPr should limit corrective measures required during the current operational phase of the existing fuel retail facility.

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Table 2: OPERATIONAL PHASE - Socio-economic: Job Opportunities and Economic Upliftment

Socio-economic: Job Opportunities and Economic Upliftment	
PHASE:	Operational
IMPACT:	BENEFICIAL
TASK/ENVIRONMENTAL IMPACT:	Job Opportunities and Economic Upliftment
OBJECTIVE:	Advantages for local previously disadvantaged communities in terms of employment, empowerment, and socio-economic upliftment.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➢ Indirectly, jobs are also created in industries that provide goods, materials, and services. ➢ The existing fuel retail facility will increase skills development, as well as local employment in the area. ➢ The development will further lead to the increase in the number of convenience facilities in the primary market area.
TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON:	Record of local workers employed.
RESPONSIBILITY:	Operator.
TIME FRAME:	Current operational phase.

Table 3: OPERATIONAL PHASE - Socio-economic: Contribute to upgrading of existing infrastructure

Socio-economic: Contribute to upgrading of existing infrastructure	
PHASE:	Operational
IMPACT:	BENEFICIAL
TASK/ENVIRONMENTAL IMPACT:	Contribute to upgrading of existing infrastructure
OBJECTIVE:	Improved municipal services.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➢ All recommendations made by the civil, traffic, and electrical engineer, and approved by the Municipality must be installed as per standard specifications.
TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON:	Implementation of infrastructure as per approved engineering plans.
RESPONSIBILITY:	Land Owner, Operator. Traffic Engineer, Engineer, and ECO.
TIME FRAME:	Current operational phase, and if any upgrades or construction take place on the existing fuel retail facility.

Table 4: OPERATIONAL PHASE – Bio-Physical: Exotic plant species

Bio-physical: Exotic plant species	
PHASE:	Operational
IMPACT:	BENEFICIAL
TASK/ENVIRONMENTAL IMPACT:	Removal of exotic plant species and establishment of indigenous vegetation

Bio-physical: Exotic plant species	
OBJECTIVE:	The removal of exotic plant species, and the planting of indigenous vegetation within the landscaped areas will increase biodiversity.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➤ All classified Invader Species in terms of the Nature Conservation Ordinance Amendment Act, 5 of 1996 to be identified, eradicated, and controlled. ➤ The Landscape Development Plan must as far as possible, make use of indigenous trees and plants. The use of exotic species must be limited.
TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON:	Landscape Development Plan.
RESPONSIBILITY:	Contractor, Operator. Landscape Architect, Environmental consultant, and ECO.
TIME FRAME:	If any upgrades or construction takes place on the existing fuel retail facility: Design, planning, and construction phases.

Table 5: OPERATIONAL PHASE – Socio- economic: Visual Intrusion and Light Pollution

Socio- economic: Visual Intrusion and Light Pollution	
PHASE:	Operational
IMPACT:	ADVERSE
TASK/ENVIRONMENTAL IMPACT:	Visual Intrusion and Light Pollution
OBJECTIVE:	To mitigate the potential negative impact on " <i>genius loci</i> " and visual impacts, should architecture not be in line with natural character of the area, through the appropriate application of form, scale, materials, and finishes.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➤ Light pollution should be minimized. ➤ Lighting on site is to be sufficient for safety and security purposes but shall not disturb the occupants of the shopping centre, the neighbouring residents, the wildlife, or interfere with road traffic. ➤ Littering, rubbish, and illegal dumping on the site is NOT allowed. ➤ Refuse must be contained and disposed of at the Municipal land fill site. ➤ Refuse bins must be provided. These must be sufficient in number and must be easily accessible. ➤ The buildings may not be visually intrusive. ➤ The buildings must be regularly painted. ➤ All lights used for non-security purposes should be energy efficient for example compact fluorescent lights (CFL). Fluorescent lamps give five times the light and lasts up to 10 times as long as ordinary bulbs. ➤ Outside lights will have to be downward shining (eyelid type), low wattage, and should not be positioned higher than 1 m above the ground surface.
TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON:	No complaints from surrounding property owners.
RESPONSIBILITY:	Land Owner, Operator, Architect, and Landscape Architect.
TIME FRAME:	Planning and current operational phases.

Table 6: OPERATIONAL PHASE – Socio- economic: Traffic

Socio- economic: Traffic	
PHASE:	Operational
IMPACT:	ADVERSE
TASK/ENVIRONMENTAL IMPACT:	Traffic
OBJECTIVE:	Possible increased pedestrian hazard and increased road damage.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➢ Signs must conform to the standards of Manual for Outdoor Advertising Control. ➢ Areas that have been landscaped must be maintained. ➢ It will be a Condition of the Zoning that a solid 3m high boundary wall be erected around the site, thereby screening the activities of the filling station from the adjoining sites. ➢ Access to the site is from B1 Road. The proposed access arrangements are based on the standards contained in the "Guidelines for Access to Filling Stations (BB2 document)" (November 2003 - SA). ➢ Road surfaces in the immediate vicinity of the site should be monitored. If the road is damaged, the relevant authority must be notified. ➢ Advertising boards must not block the visibility of the B1 road to, and from the existing fuel retail facility's access road. ➢ Access to, and from the site must not have a negative impact on the traffic on the B1. ➢ All requirements by the Traffic Engineer and Provincial and Local Traffic Department must be adhered to.
TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON:	No complaints from road users.
RESPONSIBILITY:	Land Owner, Operator and Traffic Engineer.
TIME FRAME:	Planning, design, and current operational phases

Table 7: OPERATIONAL PHASE – Socio- economic: Noise

Socio- economic: Noise	
PHASE:	Operational
IMPACT:	ADVERSE
TASK/ENVIRONMENTAL IMPACT:	Noise
OBJECTIVE:	To minimize the impact of noise on surrounding properties and the environment.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➢ Noise levels shall be kept within acceptable limits, and forecourt staff must abide by National Noise Laws and local by-laws regarding noise. ➢ Equipment such as mechanical equipment, extraction fans, refrigerators that are fitted with noise reduction facilities (e.g., side flaps, silencers etc.) must be used as per operating instructions and maintained properly. ➢ Noise levels should comply with the SANS Code of Practice 10083-2013 (recommended noise levels). SANS 10083:2012 – The Measurement and Assessment of Occupational Noise for Hearing Conservation Purposes.
TARGETS TO MONITOR COMPLIANCE AND	No complaints from surrounding property residents.

Socio- economic: Noise	
REPORTING THERE ON:	
RESPONSIBILITY:	Land Owner, Operator and Contractor Management.
TIME FRAME:	Current operational phases, and if any upgrades or construction takes place on the existing fuel retail facility.

Table 8: OPERATIONAL PHASE – Socio- economic: Atmospheric Pollution and Odours

Socio- economic: Atmospheric Pollution and Odours	
PHASE:	Operational
IMPACT:	ADVERSE
TASK/ENVIRONMENTAL IMPACT:	Atmospheric Pollution and Odours
OBJECTIVE:	Minimize atmospheric pollution and odours.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➢ Research has shown that petrol attendants, exposed to the emissions from an existing fuel retail facility have no additional health risks. ➢ Standard vents fitted to the breather pipes minimizes the loss of vapours. ➢ Emissions from the existing fuel retail facility will be low level and thus, disperse into the atmosphere. ➢ The emissions from the existing fuel retail facility would be dispersed according to the prevailing wind direction, with increased distance, the concentration of the emitted particles will decrease. ➢ All general waste areas are to be maintained in a neat and orderly manner, and bins must have secure lids. ➢ The existing fuel retail facility must fully comply with the No. 5430 Government Gazette 27 March 2014 and No. 35 Regulations under the Tobacco Products Control Act, 2010.
TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON:	No reports of negative health incidents or complaints from surrounding property residents .
RESPONSIBILITY:	Land Owner, Operator, Contractor, and Management.
TIME FRAME:	Current operational phase, and if any upgrades or construction takes place on the existing fuel retail facility.

Table 9: OPERATIONAL PHASE – Socio- economic: Safety and Security

Socio- economic: Safety and Security	
PHASE:	Operational
IMPACT:	ADVERSE
TASK/ENVIRONMENTAL IMPACT:	Safety and Security
OBJECTIVE:	Ensure safety and security of staff and users of the facility.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➢ Appropriate measures should be in place for the correct storage and handling of fuel, as well as the procedures for dealing with dangerous situations. ➢ Staff should be adequately trained with respect to dealing with crime.

Socio- economic: Safety and Security	
	<ul style="list-style-type: none"> ➤ Equipment and materials must be handled by staff that have been supervised and adequately trained. ➤ Staff must be regularly updated about the safety procedures. ➤ Emergency facilities must be available and adequately supplied for use by staff and customers. ➤ Emergency contact details for the police, Security Company, and the fire department must be readily available.
TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON:	Record of regular training for staff.
RESPONSIBILITY:	Land Owner, Operator, Contractor, and Management.
TIME FRAME:	Current operational phase, and if any upgrades or construction takes place on the existing fuel retail facility.

Table 10: OPERATIONAL PHASE – Bio-Physical: Subsurface leaks (lines, tanks)

Bio-Physical: Subsurface leaks (lines, tanks)	
PHASE:	Operational
IMPACT:	ADVERSE
TASK/ENVIRONMENTAL IMPACT:	Subsurface leaks (lines, tanks)
OBJECTIVE:	Prevent soil and groundwater contamination.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➤ Staff must be trained adequately, so as to identify and minimize the impacts of leaks. ➤ Fuel stock must be monitored on a daily basis. ➤ The UST's must comply with the relevant SANS standards with respect to tank manufacture and installation. ➤ UST's must have corrosion protection. ➤ Cathodic protection will prevent corrosion in pipelines. ➤ Leak detectors with automatic cut off valves must be installed. ➤ UST's must be insulated from the soil. ➤ Subsoil cut off drain should be installed in the lower boundary of the site to catch any seepage of fuel. The drain should be deep enough to bed 100 mm into the bedrock and linked to a sump that can be pumped out in the event of a spill. This drain must NOT be connected to the storm water system. ➤ A proper management and monitoring programme should be implemented to ensure that the groundwater resources are protected. This should include: <ul style="list-style-type: none"> ○ Drilling of at least one monitoring borehole downstream of the site, one of the existing boreholes identified can be utilized as a background monitoring point; and ○ Take water samples and analyse for microbiological, macro elements, and TPH/BTEXN at least twice annually. ➤ Dipstick readings of all the fuel tanks must be taken daily. These records must be kept on site. ➤ The occurrence of BTEXN (i.e. Benzene, Toluene, Ethyl-benzene, Xylene and Naphthalene), Sulphur and heavy metals such as Lead (Pb) in soil and groundwater should also be investigated, and the results thereof, are to be included in the records. ➤ If contamination or a leakage is detected, a rehabilitation plan must be compiled and executed. ➤ Fuel stocks must be reconciled on a monthly basis. ➤ The UST's, underground pipes and dispensing pumps should be monitored regularly for leaks. ➤ Inform authorities of any leaks or spillages.

Bio-Physical: Subsurface leaks (lines, tanks)	
	➤ All recommendations within the Hydrogeological Assessment must be adhered to.
TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON:	<ul style="list-style-type: none"> ➤ Tanks, lines, and fittings to be installed and certified as per relevant standards. ➤ Approved Spill Contingency Plan. ➤ Record of regular training of staff. ➤ Record of regular monitoring.
RESPONSIBILITY:	Land Owner, Operator, Engineer, and ECO.
TIME FRAME:	Current operational phase.

Table 11: OPERATIONAL PHASE – Bio-Physical: Risks of Fires and Explosions

Bio-Physical: Risks of Fires and Explosions	
PHASE:	Operational
IMPACT:	ADVERSE
TASK/ENVIRONMENTAL IMPACT:	Risks of Fires and Explosions
OBJECTIVE:	Prevent emergency incidents.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➤ The design of the existing fuel retail facility must conform to the following fire safety standards and legislation: <ul style="list-style-type: none"> ○ SANS 10089 (Building Code). ○ Hazardous Substances Ordinance, 14 of 1974, and its amendments. ○ Labour Act, 11 of 2007. ○ Local Authorities Fire Brigade Services Act, 5 of 2006. ➤ The following signs must be installed in accordance with the Fire Department: <ul style="list-style-type: none"> "NO SMOKING" "NO NAKED FLAME" "NO CELLPHONES" ➤ The UST's, underground pipes, and dispensing pumps should be monitored regularly for leaks. ➤ Staff must be trained adequately, so as to identify and minimize the impacts of leaks, and to deal with fires. ➤ Overfill and spillages during tanker refuelling and fuel dispensing should be prevented by the installation of automatic cut off devices. ➤ 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. ➤ The tanker delivery driver must be present during delivery of fuel, with the emergency cut off switch and a fire extinguisher. ➤ Firefighting facilities must conform to the oil industry standard and has to be regularly inspected. ➤ The existing fuel retail facility management must develop an EMERGENCY PLAN. All staff must be adequately trained in the implementation of this plan.
TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON:	<ul style="list-style-type: none"> ➤ Approved Emergency Response Plan. ➤ Record of regular training of staff. ➤ Record of regular monitoring.
RESPONSIBILITY:	Land Owner, Operator, Engineer, Filling Station Management, and ECO.
TIME FRAME:	Current operational phase, and if any upgrades or construction takes place on the existing fuel retail facility.

Table 12: OPERATIONAL PHASE – Bio-Physical: Waste Generation and Disposal

Bio-Physical: Waste Generation and Disposal	
PHASE:	Operational
IMPACT:	ADVERSE
TASK/ENVIRONMENTAL IMPACT:	Waste Generation and Disposal
OBJECTIVE:	Prevent pollution of ground and surface water, and the environment as a whole.
ACTION REQUIRED:	<ul style="list-style-type: none"> ➤ Solid waste generated needs to be collected at a central point. This waste will be disposed of as normal domestic waste at the closest municipal waste disposal site. ➤ Legislation related to effluent and waste-water disposal Model Drainage Regulations, 1996, covers aspects relating to waste management, and must be adhered to at all times. Any other relevant legislation must also be adhered to. ➤ Waste management at the existing fuel retail facility shall be strictly controlled and monitored. Only approved waste disposal methods shall be allowed. ➤ Management of the existing fuel retail facility shall ensure that all personnel are instructed in the proper disposal of all waste. ➤ The management of the existing fuel retail facility is encouraged to participate in a recycling scheme. In this instance separate receptacles for the disposal of these recyclable materials could be positioned in the waste collection area. Sorting of the waste into organics, recyclable, hazardous, and domestic waste should be undertaken at this point if possible. Staff training should be undertaken every six months to capacitate staff in terms of waste minimization, waste disposal, recycling, and other waste issues. ➤ NO burning, on-site burying, or dumping of waste shall occur. ➤ Hazardous waste will only be produced during emergency situations such as a spill that has been cleaned up with an absorbent material. This will be disposed of at a registered hazardous landfill site. ➤ These materials may be removed by an appropriate hazardous waste Contractor. Proof of appropriate disposal must be obtained by the Contractor.
TARGETS TO MONITOR COMPLIANCE AND REPORTING THERE ON:	Removal of waste to certified land fill sites.
RESPONSIBILITY:	Land Owner, Operator, Waste removal contractor, Engineer, and ECO.
TIME FRAME:	Current operational phase.

6. ADDENDUMS

ADDENDUM A: ENVIRONMENTAL INCIDENT LOG

Date	Incident	Comments (Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)	Mitigation Measure (Give details and attach documentation as far as possible)	ECO Signature

5.1.1.1 ADDENDUM B: COMPLAINTS RECORD SHEET

RECORD OF COMPLAINTS	PAGE OF	DATE: / /
Complainant:		
Capacity of complainant:		
Complaint recorded by:		
Complaint:		
Corrective measure:		
ECO: Date:		
Notes by ECO:		

ADDENDUM C: EMERGENCY RESPONSE

The operation of the existing fuel retail facility requires installation of equipment that will house and contain hazardous substances. At the same time, the transport of dangerous goods will form an integral part of the operation of such a development. Accidents such as fire, explosion, spills, or release of hazardous materials endanger life, property, and the environment.

Emergency Planning:

- Emergency procedures must be produced and communicated to all the employees on site. This will ensure that accidents are responded to appropriately, and the impacts thereof are minimized. This will also ensure that potential liabilities and damage to life and the environment are avoided.
- Adequate emergency facilities must be provided for the treatment of any emergency on the site.
- The nearest emergency service provider must be identified during all phases of the project, as well as its capacity and the magnitude of accidents it will be able to handle.
- Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site, and the construction crew camps at all times.
- All employees must receive documented initial training and annual refresher training on the facility's Fire Emergency Plan and Evacuation Plan.

Management of Fire Risks:

- "No Smoking" and "No Open Flame" signs to be prominently displayed.
- The Risk Controller is responsible for ensuring that fire risks are surveyed, documented, and assessed. Adequate numbers of the correct equipment have been installed.
- Equipment must comply with the Automatic Sprinkler Inspection Bureau (ASIB), insurance and local Fire Department requirements and recommendations. The Risk Controller must monitor and ensure that the standards are complied with.
- Departmental Managers are responsible for ensuring that the requirements of this standard are adhered to, and complied with, within their respective area of responsibility. They must ensure that equipment is operational, kept clean, not damaged, and is refilled immediately after use.
- The maintenance, repair, or replacement of any item of fire equipment is the responsibility of the Emergency coordinator, in liaison with departmental managers. Risk Controller to assist.

Incident Reporting:

- The contractor shall take corrective action to mitigate an incident, appropriate to the nature and scale of the incident, immediately after the occurrence of the incident.
- Residual environmental damage that remains after having taken corrective action shall be rehabilitated.
- Change operating procedures where necessary to prevent the recurrence of a similar accident, or incident.
- Record all incidents on an Environmental Incident Report, within 24 hours of the incident occurring. Additional documents, including photos shall be appended to the incident report to provide a comprehensive record of the incident, and the corrective and preventative action taken. Failure to do so shall result in a penalty.
- All incidents will be investigated in collaboration with the ECO. The focus of these investigations shall not be to apportion blame to specific employees, but to ascertain the root cause of the incident, and to prevent a recurrence of similar incidents.

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ADDENDUM D: SPILL CONTINGENCY

It is important that the responsible party shall adhere to National emergency response procedures. All officials of the responsible organ are required to adopt these standards that include spill and leak detection and management.

The Material Safety Data Sheets for the material and emergency response will be stored on site. The MSDS indicate the relevant actions to be taken should certain incidents (spills/exposure) occur with raw materials/products.

Customer Spill and Leak Procedure:

The avoidance of spills and leaks is especially important from a safety and legal point of view. Spills or leaks can be dangerous as they can cause a fire or explosion and may involve high cleaning costs when natural resources are contaminated. Installations are designed and built to limit the possibility of product spills and leaks. Within your premises you are responsible for environmental control and must ensure that pollution near tank systems is avoided at all times. If the Stock Monitoring and Control Procedures are used properly, it will be possible to detect a leak at an early stage. Damage to the environment and cleaning costs will then be minimized.

Spill and Leak Prevention:

- All personnel who have anything to do with fuel or oil use and tank systems should know their individual responsibilities for controlling and/or reducing pollution. Employees should be well informed and should apply the appropriate techniques.
- All employees involved in spillages and leaks must be informed about the spill/leak emergency response plan and must know how to act in the event of a spillage or leak.
- Equipment installed or used to avoid pollution should be operated efficiently and must be well maintained.
- Spill clean-up equipment, like absorbing fibres (Drizit), squeegees, sandbags, etc. should be located in a clean, dry, and easily accessible storage facility.
- Spill fighting material should be kept near places where spills and leaks are most likely to occur, i.e., near pumps. Customers should have materials like absorbing fibres (Drizit) and sandbags in place.

The proposed procedure:

- Place two 2 000-liter waste bins at each area.
- One bin to be used for storage of unused fibres (e.g., unused Drizit) and one bin to be used for receiving the used fibres (e.g., used Drizit).
- Apply the fibres (Drizit) as per the instructions as soon as the spill occurs. Used fibers (Drizit) should be disposed of in an environmentally friendly way by either burning or dispatching to a class 1 waste dump, using companies such as Waste-tech.
- Ensure that Emergency Spill/Leak Response Plans and the necessary associated equipment are appropriate for your operation, and are the subject of regular exercises, where possible in conjunction with the industry and/or local authorities.
- Provide regular training for key response employees in dealing with emergencies.

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Spill Response:

It is not possible to give detailed recommendations on how to clean-up specific kinds of spillages as the method and materials used will depend on the type of product handled, the amount involved, the wind, weather, equipment available, etc. However, all spills, minor or major, should be cleaned up as soon as they occur. Whatever the spill, there are five basic steps in dealing with spillages:

- Limit the spillage;
- Contain the spillage;
- Remove the spilled product;
- Final clean-up and soil rehabilitation; and
- Complete spillage report.

Containment of the oil near the point of spillage localizes the problem, minimizes pollution, and makes it easier to remove the pollution. Cleaning of the spill depends on whether there is a major spill and whether there is a spill on paving or on soil. A major spill is any spill where more than 200 litres of product is involved.

Minor Spills

Minor spills (less than 200 litres) should be treated as follows:

Soak up the spill with unused fibres (e.g., unused Drizit) from the waste bin. If the spill has soaked into the ground, the soil should be ploughed to allow aeration. Water can then be used to bring the oil spill to the surface and mopped up immediately with absorbent fibres (Drizit). Collect the used fibres (used Drizit) in the bin for used fibres.

Major Spills

Spills less than 200 litres but threatening to streams, rivers, water supply, etc. and incidents of lesser magnitude that have or might attract public, press or authoritative attention have to be considered as major spills. Major spills of oil or fuel on paving or non-permeable surfaces should be treated as follows:

- Wherever possible, try to limit the spillage by turning off all activities that caused the spill, i.e., closing a valve that has been accidentally opened, plugging the hole where the product is leaking or stop pumping through a ruptured pipeline, hose, or overflowing tank.
- Contain spill immediately with absorbing fibres (e.g., Drizit), sandbags, sand, or soil.
- Prevent any of the spilt oil substances from entering your drain, storm water systems, septic tanks or from contaminating any natural water systems by forming a barrier from soil, sand, sandbags, or absorbing materials. If any of the spill should enter the storm water system, the flow must be intercepted before it can contaminate other environments.
- If natural water systems are contaminated, use straw bales, absorbent booms and sandbag dams for containment and absorption.
- Mop up as much of the spillage as possible by using absorbing materials.
- Contact your field manager and ask for support.

Major spillage of oil or fuel on soil or permeable surface should be treated as follows:

- Wherever possible, limit the spillage by turning off all activities that causes the spill. Close all applicable valves, plug the hole where the product is leaking or stop pumping through a ruptured pipeline, hose, or overflowing tank.

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- Contain the spill and prevent spread of the substance by using sandbags, sand or soil, absorbent booms or planking to divert flow.
- Prevent any of the oil substances from entering your drains, storm water systems or septic tanks, or from contaminating any natural water systems by forming a barrier from soil, sand, sandbags, or absorbing materials.
- Prevent any of the oil substances from contaminating groundwater. It may be necessary to remove contaminated soil for disposal or rehabilitation.
- Remove or mop up as much of the spill as possible by using spill fighting materials. Water the soil to bring oil to the surface and "mop up" with absorbent material such as Drizit.
- Plough soil for aeration and apply fertilizer/suitable neutralizing chemicals if viable (not detergents).
- Contact your field manager and ask for support.
- All contaminated spill prevention material (such as fibres, Drizit, soils, sandbags etc.) have to be disposed of in an environmentally acceptable way, e.g., by using Waste-tech.

Spill Reporting:

The MEFT, external auditor, fuel suppliers and local protection services should be notified whenever:

- A spill in excess of 200 litres occurs. For oil spill incidents of lesser magnitude with impact on water sources, rivers, streams, etc., or that are likely to attract public or press attention, the supplier should be notified.
- For every major spill (over 200 litres of product) that occurs, the Incident Report Form must be completed. Investigate spill cause and implement recommendations for preventing re-occurrence thereof.
- If watercourses and ground water are contaminated, then the MEFT and MAWF must be notified.

Customer Inspection:

Site operating staff should check regularly if the tank system, pipework, and equipment are in good condition. For example, a dirty pump or weathered hose or tube might need maintenance. A spillage resulting from malfunctioning equipment might be prevented. Inform fuel supplier when tank systems, pipework, or equipment need maintenance.

Leak Reporting Procedure:

- Notify the supplier immediately of any suspected leaks in a tank system, or the malfunctioning of equipment.
- Any loss or suspected loss must be confirmed in writing.
- For every suspected leak in aboveground or underground tanks the Incident Report Form has to be completed.
- Investigate leak cause (in co-operation with the supplier) and implement suitable recommendations for preventing reoccurrence.

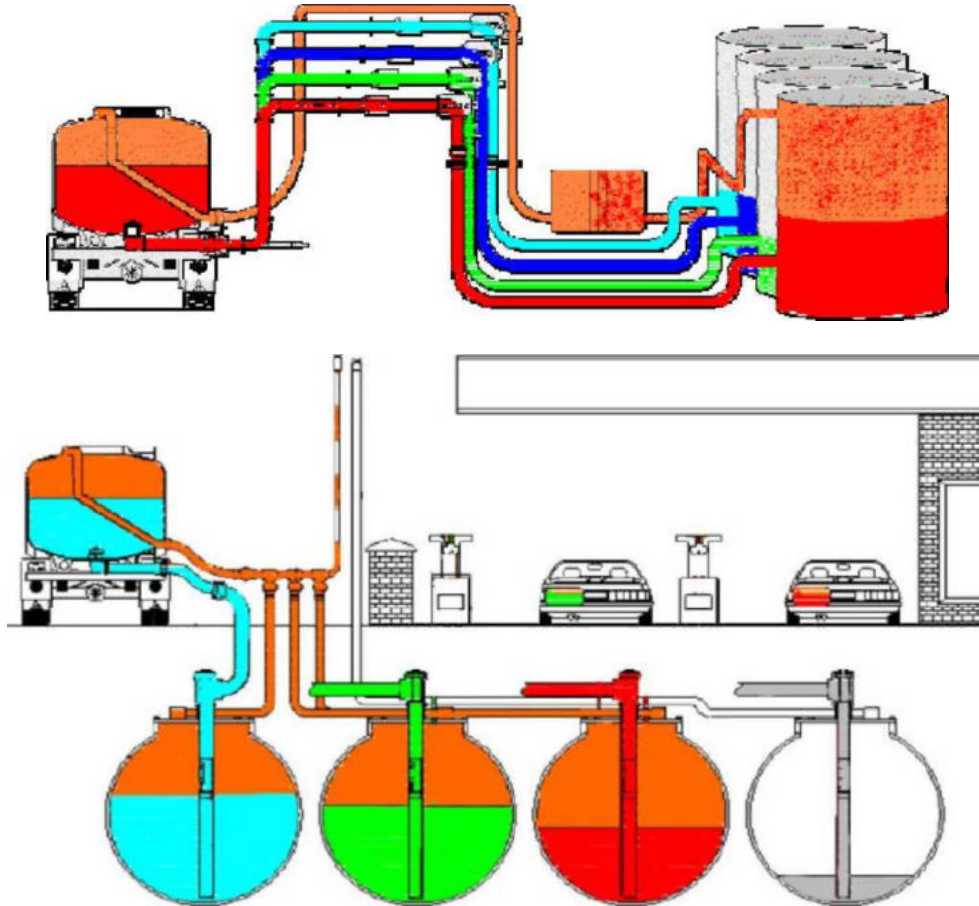
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ADDENDUM E: VAPOUR RECOVERY

Vapour recovery is the process by which vapours (VOC's) displaced during the transfer of fuel at a filling station are collected for processing, rather than expelled into the atmosphere.

There are 3 stages of vapour recovery:

- **Stage 1A:** Vapour recovery during loading of the tanker at the terminal



- **Stage 1B:** Vapour recovery during unloading of the tanker into the service station storage tank.
- **Stage 2:** Vapour recovery during filling of a vehicle fuel tank.

Vapour recovery methods must be implemented as far as possible at the different stages.

Vapour recovery is necessary as the hydrocarbon vapours given off by petroleum products, particularly petrol (gasoline), also known as VOC's (Volatile Organic Compounds), are considered to be pollutants having the following damaging effects:

- As local atmospheric pollutants contributing towards smog and haze that occur over large cities,
- As "greenhouse gases" contributing towards global warming, and
- As toxic and carcinogenic substances, causing human health problems.

Vapour Recovery Methods

Recovery systems generally consist of vapour collection, or balancing systems; using either condensation, absorption, diffusion, and/or absorption technologies to recover vapour emissions.

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