

HSE

HEALTH, SAFETY & ENVIRONMENTAL PLAN

Prepared by:



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LIST OF ACRONYMS

Env	Environment
FIBC	Flexible Intermediate Bulk Containers
GNFS	Ghana National Fire Service
GPHA	Ghana Ports and Harbours Authority
HR	Human Resource
HSE	Health, Safety and Environment
IMS	Integrated Management System
IT	Information Technology
JHA	Job Hazard Analysis
LI	Legislative Instrument
LPG	Liquefied Petroleum Gas
LTI	Lost Time Injuries
m	meters
MEWP	Mobile Elevation Work Platform
mm	millimetres
MSDS	Material Safety Data Sheet
MTI	Medical Treatment Injuries
PPE	Personal Protective Equipment
SDS	Safety Data Sheet
SSE	Security, Safety and Environment
TACOTEL	Takoradi Container Terminal
TMP	Traffic Management Plan

DEFINITION OF TERMS

- **Accident:** Any event that results in injury, and/or damage and/or loss.
- **Audit:** Systematic and independent examination to determine whether or not activities and related results comply with planned arrangements and whether not these arrangements are implemented effectively and are suitable to achieve objectives.
- **Block:** Rectangular marked and identified storage area within a stacking area for stacking designate groups of containers; divided into aisles.
- **Container handling area:** Entire area in which containerised cargo is handled or stacked.
- **Critical:** Qualifies an item of equipment, a product, a service or an operation having the potential to give rise, directly or indirectly, to risks of ill-health or injury, damage to property, plant or the environment.
- **Hazard:** Source of potential harm or damage.
- **HSE Committee:** The committee at the site in charge of monitoring all HSE matters, especially the HSE Plan.
- **Incident:** An event or a chain of events that has caused or could have caused human injury/ illness and/ or damage (loss) to assets, the environment or third parties.
- **Lost-Time Injury:** An occurrence that resulted in a fatality, permanent disability or time lost from work of one day/shift or more.
- **Medical Treatment Injury (MTI):** An injury or disease that resulted in a certain level of treatment (*not First Aid Treatment*) given by a physician or other medical personnel under standing orders of a physician.
- **Near miss:** Any event which had the potential to cause injury and/or damage and/or loss, but which was avoided by some circumstance.
- **Risk:** The combination of the likelihood and the consequence of a specified hazard.
- **Site:** Defined area where an activity takes place.
- **Specification:** All internal rules and regulations adopted by TACOTEL.
- **Stacking area:** Storage area of the terminal, in which containers are stacked to await onward movement.

- **System:** Organization structure, responsibilities, procedures, processes and resources needed to implement HSE management.
- **Top Management:** Sometimes referred to as "*Management*", is the most senior staff of TACOTEL, including the heads of the various operational units.
- **Vehicle sheeting:** Covering and securing of loads on road haulage vehicles.

HEALTH, SAFETY AND ENVIRONMENTAL POLICY

This Health, Safety and Environmental (HSE) Policy has been developed to steer the activities of the Takoradi Container Terminal (TACOTEL). The overall goal of the Policy is to eliminate accidents, prevent environmental pollution and to reduce the risks associated with health, safety and environment during operation of the container terminal.

POLICY STATEMENT

TACOTEL is committed to operating the container terminal in a manner that protects the health and safety of people and preserves the local environment in compliance with the relevant legal and regulatory requirements.

At TACOTEL, health, safety and environmental issues are shared responsibilities between management, employees and subcontractors involved in running the container terminal.

In line with our commitment, TACOTEL will adopt the following operating practices:

- Adopting best designs, solutions and working practices that satisfy the terminal HSE requirements.
- Taking proactive measures to prevent accidents and pollution by assessing and controlling HSE risks and environmental impacts.
- Complying with relevant Ghanaian legal and other requirements.
- Enhancing HSE awareness among all employees.
- Establishing HSE objectives, periodically monitoring and recording of HSE performance for continuous improvement.
- Implementing effective communication concerning HSE matters throughout TACOTEL.

This HSE policy shall be communicated to all workers and sub-contractors and made available to all stakeholders.

.....
Terminal Manager

EXECUTIVE SUMMARY

TACOTEL in conjunction with Ghana Ports and Harbours Authority (GPHA) is implementing a terminal for inland container handling and clearing. This aims at decongesting the Port of Takoradi to pave way for expansion project by moving containers to a separate terminal for devanning and further cargo movement.

This Health, Safety and Environmental (HSE) Plan has therefore been developed to eliminate accidents, prevent environmental pollution and to reduce the risks associated with health, safety and environmental management during operation of the container terminal. The implementation of this HSE Plan will allow TACOTEL to proactively manage these aspects of its terminal operations. Top Management has documented their commitment to ensuring optimal HSE performance through the formulation of this policy statement.

The HSE Plan also identifies key health and safety hazards peculiar to the handling of containerised cargo. Strategies have also been outlined to mitigate harmful occurrences by laying down procedures to follow and giving staff Personal Protective Equipment as a defence in case of failure of key controls. Training of staff on the use and handling of machinery, equipment, hazardous substances will also be vigorously implemented.

HSE goals have been set to serve as a benchmark for measuring HSE performance. Monthly, weekly and toolbox meetings (*emergency meeting that need immediate action*) have been included to deliberate on implementation of the HSE Plan as part of all operational activities.

Top Management of TACOTEL recognises that successful implementation of the HSE Plan is the responsibility of all workers. Therefore, roles and responsibilities have been assigned to ensure effective implementation of the Plan.

Health and safety measures incorporated in the HSE Plan cover terminal infrastructure, plants and equipment that will be used during operation. Environmental strategies include waste, water quality, air quality and noise level, traffic, hazardous materials as well as flora and fauna management. A holistic implementation of these HSE management strategies will facilitate realisation of the HSE policy commitments of TACOTEL.

To support management review and continual improvement of TACOTEL's HSE performance, implementation of the HSE Plan will be proactively monitored and reported. This will facilitate compliance to the HSE Policy, the IMS requirements of GPHA and other industry specific compliance obligations. The HSE Plan is a working document and will be continually reviewed to adequately address risks and impacts that emerge during operation of the container terminal.

1.0 BACKGROUND

The Management of TACOTEL in collaboration with Ghana Ports and Harbours Authority (GPHA) is implementing the Takoradi Container Terminal (TACOTEL) Project, which will see the Takoradi Port transfer all its containerized cargo to the new terminal. This will decongest the port environment to pave way for ongoing port expansion project. TACOTEL has been appointed by GPHA as the terminal managers responsible for the day-to-day operations at the terminal.

This Health, Safety and Environment (HSE) Plan has been developed to promote a safe and healthy working environment for all personnel working at the container terminal. It details the health, safety and environmental objectives for the terminal and outlines the method of implementation and responsibilities of all personnel involved.

TACOTEL and GPHA are jointly committed to implementing "World's Best Practice" for the container terminal by the application of integrated management system approach as a minimum for all its business activities. At TACOTEL, health, safety and environmental matters are the responsibility of each person at the terminal and each individual is expected to be fully committed and accountable in playing an integral part in the promotion and implementation of this HSE Plan at the terminal. No matter how comprehensive the HSE Plan, it will not work without the total dedication and effort of every individual.

Contractors are responsible to manage their own HSE programs, whilst the Security, Safety and Environment Manager has a responsibility to monitor and audit Contractors at the terminal to ensure adherence to the HSE standards outlined in this Plan.

Injuries are always unacceptable; not only in view of the hardship they cause to the injured person and in view of the disruption that incidents cause to the injured family; but also because good safety performance is associated with high efficiency, good quality and healthy working relationships. Safety is not an issue for management alone. It requires the active involvement and commitment of all parties working together to create a healthy and safe working environment.

1.1 INTRODUCTION

The Management of TACOTEL, a Ghanaian owned company, in partnership with the Ghana Ports and Harbours Authority (GPHA) has established an inland container-clearing terminal known as Takoradi Container Terminal (TACOTEL). The project seeks to decongest the port of Takoradi by providing an alternative container storage and handling terminal, the first of its kind in the Sekondi-Takoradi Metropolis.

This Health, Safety and Environmental (HSE) Plan is a project specific plan developed to outline TACOTEL Health, Safety and Environmental (HSE) management processes. The implementation of this HSE Plan allows TACOTEL to effectively manage these aspects of its terminal operations from the planning stage through to delivery. This HSE Plan shall be made available to any authority or worker upon request and shall form part of the new employee induction programmes. This HSE Plan details the health, safety and environmental requirements for the container terminal and shall be implemented and managed by TACOTEL. This HSE Plan will be monitored, reviewed and updated whenever changes in conditions or requirements occur.

1.2 DESCRIPTION OF TACOTEL OPERATIONS

The project is located at Takoradi. A plan showing the extent of the site and surrounding areas is shown in *Appendix One*. The container terminal operated by TACOTEL is intended to ease congestion at the Port of Takoradi by receiving and handling containerised cargo transported from the Port by approved contractors to the terminal.

Operation of the terminal will involve the use of reach stackers, forklifts, trucks and other mobile machinery. Exhaust fumes and lubricants or fuel spills from any of the equipment can cause environmental pollution. Other environmental aspects likely to emanate from TACOTEL's operations relate to the management of sanitary waste generated from the washrooms as well as runoff mixed with spilt hazardous chemicals.

Operation of the container terminal will also involve the movement of pedestrians, trucks and other machinery within the same space. There is the hazard of pedestrians been knocked down or run over by any of the equipment in use. Handling of hazardous cargo without the implementation of proper HSE management practices can also result in health and safety risks.

1.3 CONTEXT OF HEALTH, SAFETY AND ENVIRONMENTAL PLAN

The HSE Plan that TACOTEL adopts is based on best industry, HSE requirements of GPHA, legal and other requirements pertaining to the operation of container terminals in Ghana. It defines the integration of HSE into the work practices and systems during operation of the Takoradi Container Terminal.

The entire Plan is based a Plan – Do – Check – Act Cycle that will facilitate continual improvement of TACOTEL’s operations and ultimate achievement of commitments outlined in the HSE Policy Statement (*see figure 1-1*).

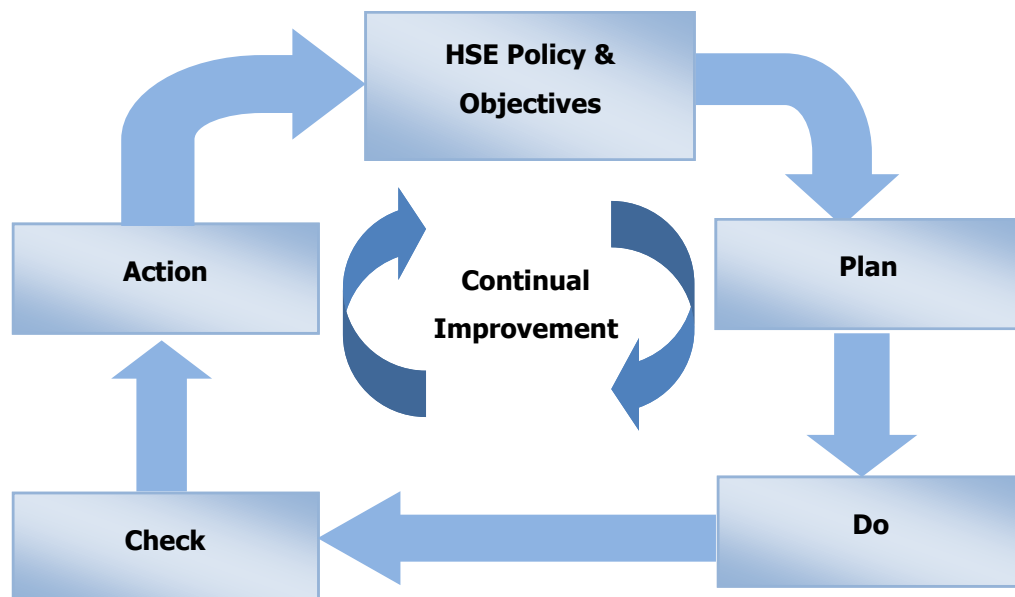


Figure 1-1: HSE Plan Processes

1.3.1 LEGAL AND OTHER REQUIREMENTS

The HSE Plan identifies requirements relating to HSE and provides the framework for terminal operation in compliance with the Health, Safety and Environment Management Systems requirements prescribed by GPHA. HSE management of the Container Terminal shall comply with all applicable Ghanaian and international requirements. TACOTEL shall ensure that all persons working at the container terminal, including employees, subcontractors and visitors comply with the applicable legal and regulatory requirements that pertain to their activities and the commitments defined in this HSE Management Plan.

Table 1-1: Summary of applicable legal and other requirements of TACOTEL's operations

Requirement	Applicability	License/ Documents required
Constitution of the 4th Republic of Ghana, 1992	Relates to the work environment and safety of TACOTEL workers.	-
Driver and Vehicle Licensing Authority Act, 1999 (Act 569)	All drivers must be properly trained and have the required license to operate. Trucks and vehicles accessing the facility must have passed DVLA transport inspection test.	Driving license Road Worthy Certificate Vehicle Registration Certificate
National Road Safety Commission Act, 1999 (Act 567)	Observance of road safety signs by TACOTEL drivers	Driving license
Road Traffic Regulations, 2012 (LI 2180)	Safety on the roads and use of safety gadgets/equipment (eg. Seat belts) in motor vehicles by drivers. Clearance and transportation of hazardous cargo.	Road Worthy Certificate
Road Safety Act, 2004 (Act 683)	Observance of traffic regulations by TACOTEL drivers as well as other drivers accessing the facility	Road Worthy Certificate
Environmental Protection Agency Act, 1994 (Act 490)	Protection of the environment by TACOTEL.	EPA permit
Fire Precaution Premises Regulation, 2003 (LI 1724)	Availability of firefighting equipment such as fire extinguishers, hydrant, etc.	Fire Certificate
Ghana National Fire Service Act, 1997 (Act 537)	Training of workers on firefighting	Fire Certificate
Factories, Offices and Shops Act 1970 (Act 328)	Management of health and safety risk of all workers	Certificates for lifting equipment, Inspection Documentation
Labour Act, 2003 (Act 651)	Relates to work environment of TACOTEL. Workers have to work under satisfactory, safe and healthy conditions	Employee contracts
Workmen's Compensation Act, 1987 (PNDCL 187)	Payment of compensation or medical bills of work related injured/accident employees.	Insurance and Compensation Payment documentations
Ghana Aids Commission Act, 2002 (Act 613)	HIV/AIDS awareness creation for all staff by TACOTEL	Training records
Hours of Work (Commerce and Offices) Convention, 1930 (No. 30)	Relates to the operations of the Human Resource Unit.	Employee Contracts, Log book

Requirement	Applicability	License/ Documents required
Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148)	Relates to the activities of TACOTEL that can pollute the environment such as exhaust emissions	Environmental Certificate and Permits
Public Health Act, 2012 (Act 851)	Cleaning of the environment and appropriate disposal of solid and liquid waste	Waste Disposal records

1.3.1.1 Relevant Stakeholders

Competent authorities are involved in the implementation of the legal and other applicable requirements of TACOTEL, including law enforcement authorities. Some of these authorities identified as relevant to the successful implementation of this HSE Plan include:

- Customs Division of the Ghana Revenue Authority;
- Ghana Ports and Harbours Authority;
- Environmental Protection Agency;
- Clearing Agents;
- Truck operators;
- Sub-contractors;
- Terminal users;
- Ghana Highway Authority;
- Ghana Police Service; and
- National Security.

1.3.2 HSE GOALS

The HSE Plan of TACOTEL is established in line with GPHA's Integrated Management System (IMS) requirements and with other commitments defined by TACOTEL for best practice in managing the terminal HSE issues. The overarching terminal specific goals related to HSE issues are:

- Safety of persons is a priority, TACOTEL targets a zero fatality each year;
- Zero lost time accidents within each year (zero severity rate & zero frequency rate);
- Environmental responsibility requires that actions are taken to prevent any major environmental incident; and
- Total compliance to Ghanaian legal and regulatory requirements.

1.3.3 ELEMENTS OF THE HSE PLAN

The terminal HSE Plan elements include the following:

- HSE Policy, objectives, goals and legal requirements;
- Leadership commitment and responsibilities;
- HSE training and communication;
- Hazard and risk management;
- Emergency and accident management;
- HSE inspection and audit;
- HSE implementation; and
- Change control, HSE reporting and record keeping.

1.4 OBJECTIVE OF HEALTH, SAFETY AND ENVIRONMENTAL PLAN

The purpose of this Plan is to establish performance standards for managing health and safety of all personnel involved in running the container terminal to ensure protection of the environment and to assign specific responsibilities for HSE compliance. The HSE Plan will define a consistent and uniform approach for implementing the Takoradi Container Terminal HSE requirements. It also aims at giving guidance on core processes to be followed in such a manner as to minimize any potential health and safety hazards and risks and environment impacts during operation of the Takoradi Container Terminal.

The plan is applicable to all sub-contractors and vendors transacting business with the management of the container terminal.

This HSE Plan shall be subjected to periodic reviews and updates to reflect changes that have occurred during operations.

The Security, Safety and Environment Team of TACOTEL will prepare a monthly progress report against the performance measures and targets tabled herein (*see table 1-2*), including any other internal indicators.

Table 1-2: HSE objectives and KPIs

Key Result Area	Objective	Performance Measures & Targets
Legislative	Compliance with relevant regulations, license or permit conditions.	<ul style="list-style-type: none"> ▪ No breaches of regulations licence or permit conditions.

Key Result Area	Objective	Performance Measures & Targets
Incidents	No workplace injuries occur within the year No incidents occur that result in the damage of plant or property	<ul style="list-style-type: none"> ▪ No lost time injuries (LTI) within each year ▪ No medically treated injuries (MTI) within each year ▪ No incident reports relating to property or plant damage
Communication	The establishment of open and honest communication between all levels of TACOTEL	<ul style="list-style-type: none"> ▪ Toolbox meetings occur weekly ▪ Pre-start meetings occur daily
Hazard Identification and control	Identification of potential hazards associated with operations as well as development, prevention, control and mitigation measures to eliminate or reduce these hazards to an acceptable level	<ul style="list-style-type: none"> ▪ Hazards identified for each work area ▪ Proper controls implemented to each work area
Work environment	Provide a healthy and safe working environment for all employees	<ul style="list-style-type: none"> ▪ PPE's provided ▪ HSE capital expenditure
Participation and Consultation	Develop a positive, proactive and committed HSE culture	<ul style="list-style-type: none"> ▪ Stakeholders actively engaged ▪ Level of stakeholder cooperation in implementing HSE Plan

1.5 MANAGEMENT RESPONSIBILITIES

TACOTEL has established an organisational structure that depicts the hierarchy adopted for implementation of the HSE Plan (*see figure 1-2*).

1.5.1 RESPONSIBILITIES OF TOP MANAGEMENT

- Top Management of TACOTEL will give the necessary authority, resources, training and support to the Security, Safety and Environment Department to put the HSE policies into practice.
- Top Management is ultimately responsible for health, safety and environmental management at the terminal, putting in place appropriate systems of work to ensure a safe working environment.
- Top Management will define roles, allocate responsibilities and accountabilities, and delegate authorities to facilitate effective implementation of the HSE Plan.
- In order to demand compliance from the workers, Top Management needs to set the example and comply with its own rules at all times.

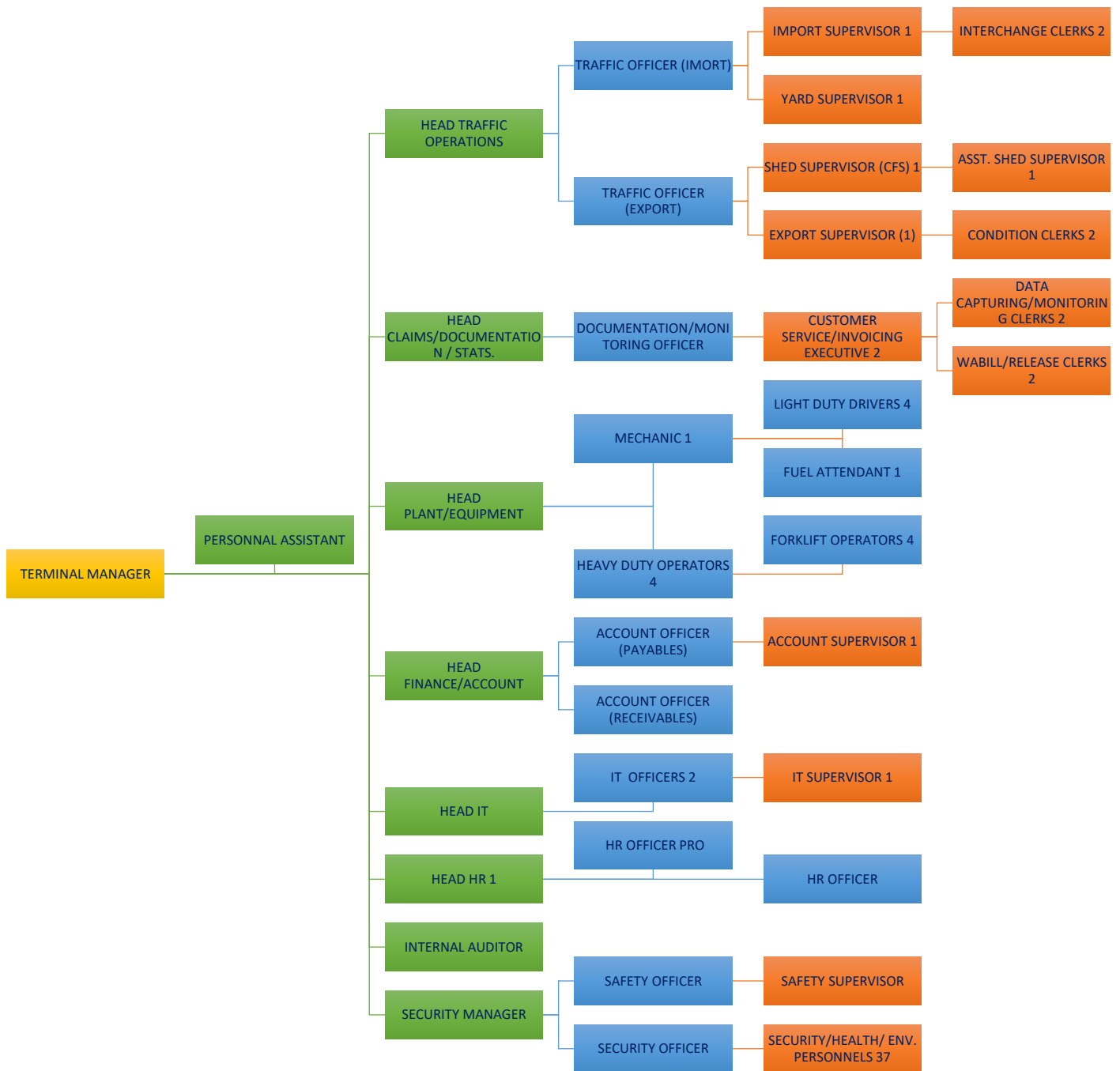


Figure 1-2: Organisational chart of TACOTEL

1.5.2 RESPONSIBILITIES OF TRAFFIC MANAGEMENT

- Control truck operators to ensure they adhere to TACOTEL’s HSE requirements.
- Ensure that only trucks with valid copies of trade certificates and truck operators with valid driving licences are allowed entry into the terminal.
- Control the rate of truck entry and exit from terminal to prevent congestion and introduction of unforeseen hazards.

- Ensure adequate measures are implemented to effectively control all hazards related to traffic management and control.
- Ensure that trucks with excessive exhaust emissions are not permitted into the terminal.

1.5.3 RESPONSIBILITIES OF HEAD CLAIMS/ DOCUMENTATION/ STATISTICS

- Ensure all HSE related documented information are maintained and controlled to meet the internal requirements of TACOTEL.
- Control the generation of paper waste during claims processing.

1.5.4 RESPONSIBILITIES OF PLANT AND EQUIPMENT

- Ensure all equipment in use at the terminal are maintained in accordance with the relevant legal requirements.
- Ensure pneumatic equipment have valid permits.
- Ensure routine maintenance of equipment is carried out as planned and in an environmentally friendly manner.
- Adequately collect and manage waste oil and properly control fuel spills
- Implement controls to ensure that all equipment operators adhere to the HSE requirements of TACOTEL.

1.5.5 RESPONSIBILITIES OF FINANCE AND ACCOUNTS

- Integrate budget for HSE issues into corporate fiscal year budgets
- Ensure timely disbursement of financial resources needed to ensure effective implementation of the HSE Plan.
- Corporate with other departments to facilitate implementation of the HSE Plan.

1.5.6 RESPONSIBILITIES OF INFORMATION TECHNOLOGY

- Implement measures that will reduce the generation of paper waste.
- Implement strategies that will control energy consumption by TACOTEL's IT infrastructure.

1.5.7 RESPONSIBILITIES OF HUMAN RESOURCES

- Ensure that HSE roles responsibilities, accountabilities and authorities are well documented and communicated.
- Organise and facilitate all HSE related trainings

- Ensure that the HSE requirements including the HSE Policy commitments of TACOTEL are incorporated in the induction of new employees.
- Facilitate the implementation of incentive schemes that will promote a robust safety culture among all workers of TACOTEL.

1.5.8 RESPONSIBILITIES OF INTERNAL AUDITOR

- Ensure resources allocated to all departments aimed at facilitating HSE implementation are used appropriately.
- Implement measures to control paper use and reduce paper waste generated.

1.5.9 RESPONSIBILITIES OF SECURITY, SAFETY AND ENVIRONMENT

- The Security, Safety and Environment Manager has the ultimate responsibility for the implementation of the HSE Plan.
- The Security, Safety and Environment Manager will demonstrate contractor commitment to continual improvement of the HSE performance of TACOTEL throughout the duration of the project.
- The Security, Safety and Environment Manager shall ensure that the contractor's commitment is communicated to all relevant stakeholders.
- The Security, Safety and Environment Manager shall provide full support to the Safety Officer and HSE Personnel to ensure that the terminal HSE Plan is fully implemented.
- Supervisors and HSE Personnel will follow guidance of the Security, Safety and Environment Manager, as they are the interface between Management and workers.
- Supervisors and HSE Personnel will know how to carry work safely in theory and practice, especially regarding hazards and risks, personal protective equipment, faulty equipment management and implementation of safe working systems.
- Actively participate in HSE discussions by disseminating information between Management and workers.
- Raise current HSE concerns with specific individuals, if no action was taken or the issue is of general interest.
- Assist Management in policy implementation for a safe and healthy work area.
- Provide advice on HSE matters to Security, Safety and Environment Manager, Supervisors and Workers as appropriate.

- Ensure the validity of all firefighting equipment and periodically test the emergency protocols.
- The Safety Officer will analyse accident rates and trends, presenting safety findings to Management, develop and revise safe systems of work, assist with incidents investigations, peruse safety aspects of proposals for new projects, conduct periodical safety audits, facilitate safety discussions and provide training.

1.5.10 RESPONSIBILITIES OF ALL WORKERS

- Safety at TACOTEL is everyone's responsibility, whether directly or indirectly involved with the terminal operations (*see figure 1-3*).
- Everyone contributes towards HSE practices and a total incident free work environment.
- New operational activities introduced as part of TACOTEL's service scope will require particular health and safety attention.
- A fully inducted TACOTEL worker shall accompany all visitors to the operational areas of the terminal at all times.



Figure 1-3: Safety Responsibility

- All terminal workers will:
 - seek information and training,
 - become acquainted with all health and safety instructions related to their work,
 - comply with safety rules and instructions at all time,

- use PPE's correctly and at all times required,
- abstain from careless or reckless practices,
- notify Management or the immediate supervisor of any faulty equipment or material,
- cooperate towards the training of new workers,
- not interfere with PPS use,
- actively participate in the HSE management system, from development to administration, and
- be aware that their actions can affect others.
- Any person within the terminal will cooperate and comply with all HSE requirements and instructions.

1.5.11 RESPONSIBILITIES OF CONTRACTORS AND SERVICE PROVIDERS

- Contractors and service providers will cooperate with terminal authorities and other competent bodies to maintain the safety and health of all persons that may be affected by their activities and protect the environment.
- Contractors shall produce the following for approval prior to being engaged for works:
 - Health, Safety & Environmental Management Plan, Policies and Procedures
 - Safety Statistics
 - Organizational chart number of prospective employees
 - Current Insurance Certification
 - Weekly Reporting Template
 - Detailed Contract Risk Assessment

1.6 STRUCTURE FOR HSE IMPLEMENTATION

1.6.1 MONTHLY HSE MANAGEMENT REVIEW MEETING

The Security, Safety and Environment Manager will chair a monthly meeting to be attended by the Safety Officer; Safety Supervisor; Security, Health and Environment Personnel; and sub-contractor safety representatives.

The meeting will review the adequacy and effectiveness of TACOTEL's HSE performance, to evaluate the status of the HSE implementation and to assess the overall HSE performance based on HSE reporting data.

The review will establish new or updated HSE objectives for the terminal and will consider whether changes are required to any part of the HSE Plan.

1.6.2 WEEKLY HSE MEETING

Weekly HSE meetings will be scheduled to assess and improve the overall HSE performance of the terminal. The meeting will provide a mechanism for aligning implementation of the HSE Plan across the terminal.

The meeting will be chaired by the Safety Officer and will provide a means of measuring HSE performance.

1.6.3 TOOL BOX MEETING

Toolbox meetings will be undertaken daily and prior to starting new work activities. Tool Box meetings will cover HSE topics such as:

- Use of PPE;
- General hazards associated with the site activities;
- Project HSE policy and culture;
- Review of the HSE induction information;
- Specific job-related hazards and environmental aspects; and
- Emergency preparedness.

1.7 COMMUNICATION

1.7.1 INTERNAL COMMUNICATION

Relevant health, safety and environmental information will be available to all workers, in writing or other means. HSE information will include:

- HSE Policy,
- HSE objectives and targets,
- HSE Plan,
- Safe systems of work,
- Material Safety Data Sheets (MSDS),
- Significant environmental aspects and hazards, and
- Relevant health, safety and environmental requirements

1.7.2 EXTERNAL COMMUNICATION

TACOTEL will continually engage external stakeholders via meetings, discussions and formal correspondences. This will be an ongoing consultative forum to encourage the stakeholders to share information as well as undertake risk and hazard identification for work areas under their control. The HSE Policy is made available to all the stakeholders and their commitment to the policy statements confirmed

1.8 TRAINING

1.8.1 SELECTION AND TRAINING

All workers of TACOTEL will only be engaged following an appropriate recruitment process including physical tests, where necessary. When required, workers will receive further training until full competency for work is achieved. The selection method will be based on objective tests, without discrimination while complying with all applicable labour requirements. No person below the age of 18 years will be permitted to work at the terminal. The main resources necessary for training are:

- suitable premises and equipment,
- training material,
- facilitator, and
- appropriate remuneration of trainees.

1.8.2 TRAINING AND INDUCTION

Personnel shall be trained to develop necessary skills to work safely and efficiently in a safe and healthy work environment as well as protect the integrity of the environment. Training methods shall typically include theory and practical demonstrations by qualified and experienced trainers. Training shall include induction training, refresher training and awareness training and best working practices for hazardous activities. No person shall work in the terminal without attending the general induction as a basic requirement for working at the container terminal. General induction shall cover:

- HSE policy, objectives and targets;
- general hazards and environmental aspects,
- key hazards and aspects identification within the Container Terminal
- work area specific hazards and environmental aspects,
- local HSE rules and regulations,

- emergency arrangements,
- Site access controls for workers and contractors;
- vehicle safety;
- container safety management;
- spill control and management;
- forklift safety;
- pedestrian safety;
- waste management; and
- the necessary cooperation with other personnel.

Training materials shall be given to participants to remind them of the crucial issues of the training after the general inductions. People with relevant training may not need to repeat induction, but will receive relevant task specific information in any specific case. Besides, structured job-specific training shall be provided to all TACOTEL personnel on regular basis taking into account their relevant vocational qualifications and certificates to work in hazardous environments.

1.8.3 EVALUATION OF TRAINING

Attendance at a training course does not guarantee achievements of necessary skills; therefore, appropriate means of evaluation of the effectiveness of the training shall be justified after each training programme. Some of these means includes test results and certificates of participation specifying skills and level of achievement acquired. The Head of Human Resources shall retain records of training and competencies acquired by each personnel.

1.9 INCIDENT AND INJURY MANAGEMENT

1.9.1 REPORTING OF INCIDENTS

All injury or illness cases shall be reported to the immediate supervisor for onward reporting to the Security, Safety and Environment Department. All occupational accidents, incidents and dangerous occurrences will be entered in a database and managed. Individuals are encouraged to report incidents and near misses without any consequences. In case of dangerous failure of plant or equipment, it is kept available for inspection by a representative from the Plant and Equipment Department. Written health

and safety records will be maintained by the Head Claims/ Documentation and Statistics department.

1.9.2 INVESTIGATION OF ACCIDENTS

All near misses as well as environmental and safety incidents shall be investigated to determine causes and necessary actions to prevent future occurrences. Direct and underlying causes will be considered, including human factors. The scene of a fatal accident will be left undisturbed until the internal/ statutory authorities have collected adequate evidence. The formality of the investigation shall be proportional to the severity or potential severity of the incident or near miss. Witnesses' names will be recorded and relevant photographs will be identified, captioned and dated. The investigation will consider all relevant evidence, including:

- location,
- equipment/ plant involved,
- affected cargo,
- existing system of work,
- people involved and their routine responsibilities,
- physical and mental conditions of persons involved,
- training and competencies, and
- previous incidents of same or similar nature.

1.9.1 EMERGENCY CONTACTS AND RESPONSE

All work areas have suitable firefighting equipment installed, e.g. fire extinguishers (water, dry powder, carbon dioxide and foam), buckets of sand with scoops, fire hydrants connected to water mains. All fire extinguishers have basic instructions on their use displayed at their locations.

Areas prone to oil/ fuel/ chemical spills have sand, sawdust and other scooping devices for emergency response. Smoke and heat detectors with/ without self-activating sprinklers are installed at the administrative block and some sensitive operational areas where there is a high fire risk. Departmental heads and workers are trained to use fire extinguishers and spill kits during emergencies.

1.9.1.1 Emergency Contacts

The following are some emergency response services that can be contacted during emergencies.

Table 1-3: Emergency response contacts

Service	Contact Details	
Ghana National Fire Service	0312 021 526; 0312 021 942; 0312 022 191; 999	0312 193 521; 0312 193 522; 0299 346 040; 192
Ghana Police Service	0312 046 121;	191
National Ambulance Service	0302 684 201; 193	0302 684 251; 0302 684 259
NADMO	0312 046 676	
Security Manager		
Safety Officer		
HSE Personnel		

1.9.1.2 Response for Oil/ Fuel/ Chemical Spill Incidents

Oil/ fuel/ chemical spills can occur in the workshops, dangerous cargo area, fuel dispensing area, warehouses, de-vanning area and on the road networks. In case of oil, fuel or chemical spillage, the following procedures must be followed:

- Stop spill flow where possible
- Shut down equipment causing spillage if operation will lead to excessive spillage
- Eliminate all sources of ignition
- Do not start any equipment, vehicle or plant
- Raise alarm
- Inform Security, Safety and Environment Department immediately.
- Security, Safety and Environment Department on arrival will assess the situation to identify the type of product involved and may call the any of the emergency response units, as appropriate
- Access to the area will be controlled by the Security, Safety and Environment Department until the incident has been adequately controlled by the emergency response service.
- Mop pads, sawdust or sand will be used to contain spills and to prevent spread of spilled substances
- Seal all drains, if applicable, to prevent the spread of spilled substance

- Contain spilled substance
- Have firefighting equipment ready in case of any fire outbreak
- Absorb/recover substance
- Traffic Management Department coordinates with the Security, Safety and Environment Department to control the movement and inflow of traffic into the terminal and cordon the incident area to prevent intruders
- The action continues until the spillage is recovered.
- Complete incident report is prepared and submitted to the Security, Safety and Environment Manager
- Debrief to correct mishaps

Where fire is involved in oil/ fuel/ chemical spillage:

- Raise alarm
- Shut down equipment and eliminate possible sources of ignition
- Contact Security, Safety and Environment Department and/ or representatives
- Apply appropriate fire extinguisher to fight the fire, only if it is safe to do so and you are trained to use the extinguisher. *Prompt action can stop a big fire from developing.*
- If not possible, evacuate immediately to the nearest Emergency Assembly Point
- The Security, Safety and Environment Department takes control and contacts the appropriate emergency response service to rescue, if persons are involved and/ or combat the fire
- Roll call will be conducted after the incident with the aid of the departmental heads of those working at the time of the incident to ascertain whether someone was trapped or all have been rescued.
- Firefighting precedence should be reported to the Security, Safety and Environment Manager
- After incident is over, the Security, Safety and Environment Manager shall officially announce that, the place is safe for operation.

1.9.1.3 Response for Fire Incidents

Fires can cause serious injury, death and property loss. Note that fires may exist alone or in conjunction with another type of emergency, such as explosion or chemical spill. In case of fire outbreak, the following procedures will be followed:

- Raise alarm by shouting *Fire! Fire! Fire!* and activating the fire alarm system (electric bell) if installed, a mechanical bell or gong.
- In the case of a small fire attempt to put it out by the use of an appropriate extinguisher only if it is safe to do so and you are trained to use it. *Prompt action can stop a big fire from developing.*
- If not possible, evacuate immediately to the Emergency Assembly Point
- Inform Security, Safety and Environment Department
- Inform Security, Safety and Environment Department and Traffic Management Department if there is the need to prevent movement and intruders
- Security, Safety and Environment Department contacts the appropriate emergency response service.
- The emergency response service will dispatch necessary fire equipment and men to the scene immediately.
- The emergency response service will carry out assessment and determine appropriate action.

In case of shed fires, the following procedure will be followed:

- On discovering a fire, shout, *Fire! Fire! Fire!*
- Set off the alarm electric or mechanical bell
- In the case of a small fire attempt to put it out by the use of an appropriate extinguisher only if it is safe to do so and you are trained to use it. *Prompt action can stop a big fire from developing.*
- If not possible, evacuate immediately
- Promptly inform the Security, Safety and Environment Department.
- The Security, Safety and Environment Department contacts the appropriate emergency response service
- When the emergency response service takes over the incident area upon arrival.

- Supervisor in affected work area should give information on type(s) of cargo in the shed.
- Emergency response service inform Security, Safety and Environment Department and traffic Management Department if there is the need to prevent movement and intruders
- Finally, if fire out, the Security, Safety and Environment Department is notified.

1.9.1.4 Response for Explosion Incident

- From a safe location, pull the nearest fire alarm to evacuate the building.
- Call Port Security, Safety and Environment Department to inform them of the location of the explosion and severity, etc.
- Ensure your safety if trapped in building and wait until help arrives.
- Security, Safety and Environment Department contacts appropriate emergency response service
- A representative from the Security, Safety and Environment Department advises emergency personnel deployed by the emergency response service about the explosion and if any person(s) are involved.
- In case of explosive device/ bomb threat, GNFS service will be notified to respond with the rescue team to the threat zone
- The Security, Safety and Environment Manager will be notified when the situation has been adequately controlled.
- Incident will be investigated and records kept.

1.9.1.5 Response for Workplace Accidents/ Injuries

- Raise Alarm and shout for help
- Where there are injured person(s), keep the injured person(s) calm.
- If trained to administer first aid, attempt to assist injured person(s) and call for help, otherwise.
- Inform nearest First Aid personnel and nearest personnel in the Security, Safety and Environment Department
- The contacted personnel informs the appropriate emergency response service.
- First Aid treatment to be administered by trained personnel
- Well-equipped ambulance will convey injured person(s) to hospital

1.9.1.6 Response for Gas Leaks

- Keep clear of area.
- Immediately inform immediate supervisor or Security, Safety and Environment Department.
- Security, Safety and Environment Department informs appropriate emergency response service.
- Emergency response service takes control of the affected area and ensure elimination of possible fires.
- Security, Safety and Environment Department is informed when the work area is safe.

1.9.1.7 Response for Vandalism/ War/ Civil Strife

- Immediately notify Security, Safety and Environment Department and HR Departments
- Security, Safety and Environment Department informs appropriate emergency response service to be on stand by
- Evacuate all staff to safe facilities
- Security, Safety and Environment Department to negotiate for calmness if possible, if not
- The Ghana Police Service will be notified to take over the situation.

1.9.1.8 Evacuation during Emergencies

All office buildings, warehouses and operational areas have designated Emergency Assembly Points for evacuation purposes. These areas are to be kept clear at all times.

Clear emergency exit notices have been displayed on walls to give directions to the emergency assembly points. There are well-labelled emergency exit points to be used only during emergencies.

If an evacuation order is issued by a Head of Department or Security, Safety and Environment Manager, or if it were necessary to evacuate due to an emergency, all affected parties are entreated to follow the procedures outlined below for maximum performance.

- Leave the building immediately using the Emergency Exit signs provided.

- Take only keys, wallets and essential belongings with you if possible.
- If you are the last one to exit your room, close and lock doors.
- Do not investigate the source of the emergency.
- Walk briskly; don't run, to the nearest exit leading to your assigned evacuation assembly point and wait for further instructions
- Do not use elevators, use the nearest stairway
- Assist people with special needs.
- If you are unable to evacuate, alert immediate supervisor or Security, Safety and Environment Department using emergency numbers and report your location.
- As you make your way out, encourage those you encounter to exit as well.
- Follow instructions of the Security, Safety and Environment Manager or other identified emergency personnel.
- Wait for instructions from the Security, Safety and Environment Manager or Departmental Head before returning to your building after an evacuation.
- Roll call will be conducted with the aid of the supervisor of those working at the time of the incident to ascertain whether someone was trapped or all have been rescued.

1.10 MOTIVATION AND INCENTIVE SCHEME

An incentive and motivation scheme will be implemented to motivate HSE participation in line with TACOTEL's HSE requirements. The scheme will provide rewards for good HSE performance, such as workers who regularly carry out their duties in a safe manner.

1.10.1 DISCIPLINARY ACTION

A Disciplinary Committee composed of the Security Manager, Head of Human Resources and sub-contractor Safety Representative shall convene an employee suspension or termination is required. Disciplinary incidents are logged as follows.

1.10.1.1 First Offense – Verbal Warning

A verbal warning is given to the employee who commits first violation against HSE regulations in the presence of his supervisor. This warning must include an explanation of the corrective action expected to avoid a recurrence and the consequence for a second violation.

1.10.1.2 Second Offense – Written Warning

A written warning is given to the employee who commits second violation against HSE regulations and a copy is kept by the Human Resource Department. This warning must include an explanation of the corrective action expected to avoid a recurrence and the consequence for a third violation.

1.10.1.3 Third Offense – Disciplinary action

Disciplinary action is given to the employee who commits third violation against HSE regulation or serious violation. The action can include suspension, termination or any other measures.

Suspension or termination is possible for serious breaches of HSE regulations without going through First and Second Offense procedures. These violations are for unsafe actions, which can lead an accident such as:

- Working at height without a body harness
- Operating construction equipment without a license
- Entering confined space without a permit, etc.

2.0 HEALTH AND SAFETY MANAGEMENT

Terminals are traditionally considered as high risk work areas since workers face many hazards particularly during loading and unloading of cargoes and the movement and operation of vehicles. The dynamic nature of terminal operations and the unique circumstances and challenges that every terminal faces makes it essential to have a system in place to protect the health, safety and welfare of all workers and other terminal users. Due to the number of personnel and machinery involved in terminal operations, the management of health and safety requires good cooperation and coordination between all foot workers, machine operators and terminal users.

Management of health and safety issues will be based on risk assessment, and will rely upon:

- the HSE Policy involving workers at all levels,
- TACOTEL's transparent organisational structure specifying competencies, training requirements, responsibilities and accountability,
- planning based on latest information, identifying needs for hazard control and setting clear objectives,
- evaluation of current performance, investigation of accidents, periodic audits and reviews, and
- necessary action to achieve continuous improvement of health and safety.

2.1 RISK ASSESSMENT

A risk-based system requires identification of key activities and their interconnectedness. The quantitative means of risk assessment, which is based on the probability and severity of a hazard's outcome (*using a matrix*) will be preferred. The hierarchy of controls shall be used when determining the most effective controls for hazards within a specific work area (*see figure 2-1 for details*).

A risk assessment matrix shall be used to rate hazards prior to the proposed controls. The controls are rated for effectiveness by a residual risk ranking until risks are as low as reasonably practicable. Risk assessment is not a concise science and will therefore not replace common sense when a hazard is obvious. A team including any combination of the following will conduct the risk assessment.

- Responsible managers,
- Supervisors,
- Health and Safety officer,
- Health and Safety personnel, and
- Worker representatives.

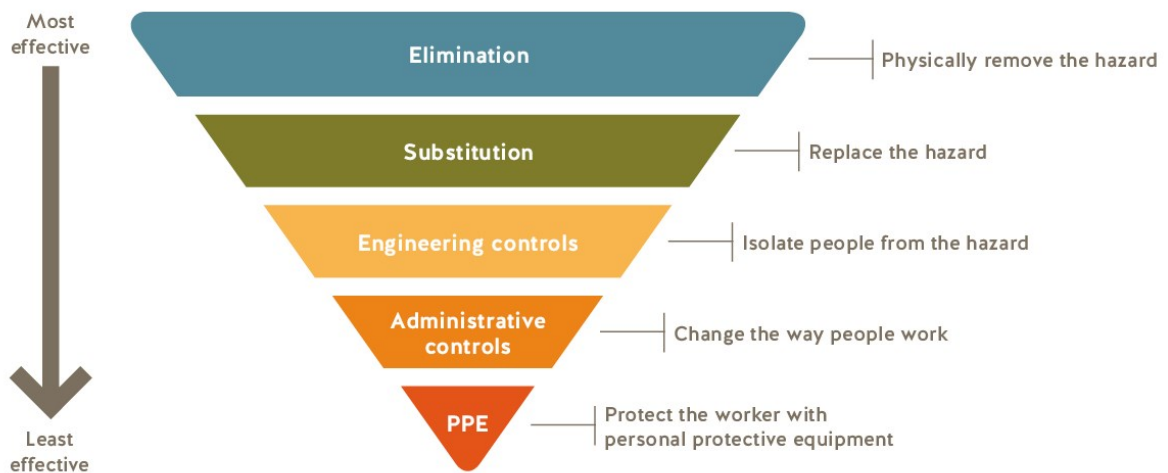


Figure 2-1: Hierarchy of controls

Any necessary action will be implemented within an agreed timeframe prior to verification.

A Job Hazard Analysis (JHA) shall be required for non-routine tasks. This is to identify hazards associated with the task and consider whether the task requires additional work method statements or is it safe to proceed. Whenever a JHA is required, the *gang* deployed to perform the task prior to commencement of the task shall conduct it. JHA's will be reviewed regularly on a daily basis and appropriate additions/ deletions made to control measures where changes to the task occur that have the potential to impact on the overall risk. The *gang* supervisor shall endorse such alterations. JHA's will be conducted and acknowledged with signatures by all *gang* members prior to performing each new task.

All hazard/ risk management controls will be evaluated for effectiveness after implementation. Where it is recognised that controls can be improved, the *gang* together with the *gang* supervisor shall make the changes.

All JHA's shall be maintained and retained by the Safety Officer. Site-specific safety actions will be communicated to employees by posting on the work area notice board or any other appropriate means.

2.2 HEALTH & SAFETY HAZARDS

All workers will be fit for duty and will be protected from health hazards that may arise from their occupation. Competent personnel or authorities will regularly check health and fitness of workers. Health hazards will be identified, the risks consciously evaluated, the dangers to health understood and effective preventive measures will be arranged. The main terminal hazards include:

- noise,
- fatigue,
- fumes,
- vibrations,
- collisions; and
- exposure to hazardous substances.

Exposure of workers to particle hazardous substances will be kept under required occupational exposure levels. Port workers exposed to hazardous materials will be trained and provided with Material Safety Data Sheets (MSDS) as part of implementation of the HSE Plan.

2.3 PERSONAL PROTECTIVE EQUIPMENT (PPE)

The Security, Safety and Environment Manager, Safety Officer and SSE Personnel will ensure that appropriate PPE is used by all workers according to instructions, and show the example.

- Loose clothing will not be tolerated.
- PPE will never be used as a substitute for eliminating or controlling a hazard at the source, it is the last measure of control in the hierarchy.
- All PPE will comply with legal requirements, be comfortable to wear, and be available in a range of sizes.
- General PPE will be used in most cases; specialised PPE will be used when required.

- The need for PPE will be determined according to legal requirements, the type of work and the nature of the hazards involved following a risk assessment.
- General terminal workers PPE may include (*see figure 2-2*):
 - high visibility clothing,
 - head protection,
 - ear/hearing protection,
 - eye protection,
 - fall prevention and arrest equipment,
 - foot and ankle protection,
 - hand and arm protection,
 - knee and leg protection,
 - respiratory protection,
 - masks and respirators,
 - restraints,
 - shoulder protection, and
 - weather resistant clothing.



Figure 2-2: Some PPEs needed for terminal operations

- Glass lens spectacles will need to be replaced by plastic lenses or covered with safety glasses.
- PPE needs to be as comfortable as practicable for the users; workers shall be trained in the use, care and maintenance of the PPE.
- All PPE will be cleaned regularly; maintained in an efficient, hygienic condition in accordance with manufacturer's recommendations, and replaced when necessary.

- All PPE will be stored in suitable facilities, separated from personal clothing.

2.4 HOUSEKEEPING AND CLEANLINESS

- All areas will be kept in a clean and orderly condition.
- All access routes and working areas will be kept free of obstructions, all unused equipment and rubbish will be removed as soon as possible.
- Spillages of a hazardous nature will be cleaned up by trained personnel and reported to a supervisor as soon as possible.
- All plant and equipment should be parked in appropriate designated areas when not used.

2.5 FIRE PRECAUTIONS

- Fire precautions will consist of:
 - fire protection,
 - fire alarms,
 - firefighting equipment,
 - fire emergency strategy and exits.
- Where possible, warehousing infrastructure will be built using inflammable materials, including fire separation walls resisting at least two hours, with fire-resistant doors where necessary.
- The terminal will use an effective fire alarm system including fire-extinguishing appliances, a fire authority alert, using a system based on work areas.
- Large warehouses will be partitioned into fire-resistant compartments of maximum 9000 m² in area.
- Sources of ignition will be closely monitored.
- Portable and fixed firefighting systems will be selected and used according to legal requirements (*see figure 2-3*).
- The fire alarm in any building will be audible throughout the entire building. The fire alarm system will be operational at any time.
- Readily available portable equipment will be grouped at clearly marked and signed fire points, visible at all times.
- The firefighting agents (*water, foam, carbon dioxide and powder*) will be determined according to the type of fire and the nature of the materials likely to be involved.

- Water will be used for general fires; the main intake will be checked to ensure water is available at all times.
- Firefighting equipment shelf life will be monitored and the stock periodically renewed.
- The equipment will be regularly tested.
- Carbon dioxide extinguishers will not be used in confined or unventilated places.
- The port will provide adequate means of escape leading to safe external places.
- Fire escape will involve at least two routes, and lead to clearly identified assembly points.
- Clearly signed, unobstructed, suitable access routes for emergency services will be provided throughout the terminal.
- GNFS and specialised insurance companies will provide technical advice on fire matters.



Figure 2-3: Fire hydrants been installed at TACOTEL

2.6 TERMINAL INFRASTRUCTURE, PLANT, MATERIAL AND EQUIPMENT

Vehicles and mobile plants are main elements of fatalities and serious accidents; therefore segregation of people and vehicles is essential.

Plant, material and equipment will be assessed for design, construction and installation risks prior to purchase. Subsequently, it will be appropriately used and properly maintained to suit duty requirements.

2.6.1 SURFACES

- Surfaces will be:
 - of adequate strength to support loads,
 - levelled or with minor slope,
 - free from depressions or raised objects,
 - continuous, and
 - skid-resistant in all weather conditions.
- Spillages will be cleaned immediately and future repair considered.
- All surfaces will be as levelled as possible while providing adequate drainage; any slope will not exceed 1%.
- Drainage systems will include appropriate filtering systems.

2.6.2 LIGHTING

- Adequate lighting will be provided during darkness and reduced visibility. Lighting will be minimum 10 lux on site, 50 lux or more in operational areas.
- Hazardous areas will require higher levels of lighting, temporarily or permanently, as necessary.
- Lighting will be as uniform as possible.
- Lighting choice and positioning will be determined case by case, taking into account work or environmental requirements and lightening maintenance.
- Monochromatic lighting will be restricted to non-operational areas, daylight-like lighting will be used for operational areas.
- Container areas will require lamps of minimum 12 m high (*see figure 2-4*).
- Shades and diffusers will prevent light pollution and glare, including reflection on water.



Figure 2-4: Some lighting fixtures in container area

2.6.3 TRAFFIC ROUTES

2.6.3.1 Roadways

- Suitable roadways (*minimum 5 m wide*) will provide access to vehicles to all parts of the terminal, taking into consideration manoeuvrability and weight of the loaded vehicles.
- Vehicles and pedestrians will be separated whenever possible. There will be a minimum of 1.5 m clearance along all routes within the terminal.
- Evidently marked, unidirectional roadways will be minimum 1 m away from fixed obstacles and will permit clear visibility.
- Roadways will be standardised throughout the terminal, particular attention will be dedicated to intersections.
- Appropriate warning signs will be placed according to LI 2180. Safe parking lots will be available to the north of the terminal.

2.6.3.2 Walkways

- Safe adequate walkways will be provided to all parts of the terminal, cleared from vehicle traffic where practicable.
- The walkways (*and any obstruction*) will be clearly delineated, signed, and wide enough for the expected number of people using them (*see figure 2-5*).
- Signage will be fitting where walkways cross roadways, according to LI 2180.



Figure 2-5: Sample of walkway markings

2.6.3.3 Other Matters

- Permanent or temporary obstructions will be visible day and night, fenced, and clearly signed
- Temporary covering of a hole or trench will be:
 - of adequate strength,
 - having sufficient overlap at the edge,
 - suitably anchored,
 - of sufficient width,
 - provided with a ramp where necessary,
 - fenced where necessary,
 - accompanied by 'give way to vehicle traffic' and 'no overtaking' signs,
 - advised of the entry barrier in place by information tags. Overhead obstructions will be clearly marked.

2.6.4 CARGO HANDLING AREAS

- Cargo handling areas will be well surfaced and lit (see figure 2-6).
- Lighting structures are to be physically protected against cargo, equipment and vehicles.



Figure 2-6: Well surfaced cargo handling area (foreground) and lighting (background)

2.6.5 FENCING

- Permanent fencing will be robust, including metal railings and concrete.
- The type of fencing will depend on the nature of the hazard to be protected, the general layout of the immediate area, and its infrastructure.
- Arrangement of containers will be such that they serve as barricades to control movement of trucks and pedestrians.

2.6.6 ACCESS TO TERMINAL BUILDINGS, STRUCTURES AND PLANT

- Workers and visitors will require safe access to all parts of buildings, structures and mobile plant.
- Permanent fixed accesses will provide access to regular work, including cabs of mobile plants.
- Special access and facilities for disabled persons are implemented, if required after risk assessment.
- All workers of TACOTEL and visitors shall comply with site access requirements (see Appendix Two).
- Supervisors shall be given a 72-hour notice prior to the introduction of a new worker to their work area.

- All trucks accessing the terminal shall provide copies of trade certificates and driving licences prior to entry.
- In the event of an emergency work requirement or short-term worker being required, the Security Manager shall be notified of the scope of works, certifications and personnel required. An induction shall be arranged (*see Section 1.8.2 for details on induction*).
- All persons accessing a work area shall wear the minimum PPE requirements of the work area at all times while within the work area

2.6.7 STAIRWAYS, STEPS, LADDERS, LIFTS AND WALKWAYS

- All stairways, steps, ladders, lifts, and walkways will meet industry standards; their open sides will be suitably fenced, a handrail provided, and the surfaces slip resistant.

2.6.8 TERMINAL PLANT AND EQUIPMENT

- All terminal plant and equipment will comply with legal requirements, will be clearly marked, will be suitable for the intended use, and will be maintained in safe and efficient condition on a proactive basis.
- Special consideration will be placed on lights, braking system, tyres, steering, warning signals and general safety of mobile equipment.

2.6.9 INTERNAL MOVEMENTS OF VEHICLES AND MOBILE EQUIPMENT

- Cargo-handling vehicles will maintain stability at all times during working conditions.
- Safe access to and from the vehicles will be available when necessary, exposed dangerous parts will be guarded.
- Corner fittings or other suitable parts will support containers during transport, not their side rails.
- Speed limiters may be necessary for large cargo or container handling.

2.6.10 VISUAL DISPLAY SCREENS

- Visual display screens will provide minimum distraction to the driver and require minimum interaction.

2.6.11 HAND TRUCKS AND TROLLEYS

- Hand trucks and trolleys used on slopes will be provided with effective breaks, when left standing there will be provided with effective handbrakes, chains, or similar devices.
- Hand trucks will be provided with spring clips or other locking devices securable in an upright position, protecting hands with knuckle-guards.
- All hand tools will be well designed, appropriately maintained and periodically inspected and faulty material removed.

2.6.12 CARGO PLATFORMS

- Cargo platforms will be robustly constructed of metal resistant to the load or workers weight, focusing on dynamic loads.
- Cargo platforms will be:
 - adequately supported and fastened,
 - of adequate size for cargo and people,
 - equipped with safe means of access (ladders, steps),
 - adequately fenced if the platform is more than 1.5 m high,
 - without hatch covers for cargo use,
 - well maintained.

2.6.13 ELECTRICAL EQUIPMENT

- All electrical equipment and circuits will be designed, constructed, installed, protected and maintained as required.
- All metallic parts of electrical equipment will be earthed.
- All conductors will be suitably in sleeves and installed to be protected from moving loads and vehicles.
- Outdoor electrical equipment will be resistant to all weather conditions (*see figure 2-7*).
- Electrical equipment in a potentially explosive atmosphere will be designed to avoid ignition or explosion.
- Portable floodlights, and hand lamps will be positioned as far as possible from low-voltage circuits.



Figure 2-7: Outdoor generator with weather resistant coating

2.6.14 MACHINERY

- All dangerous parts of machinery (motors, gears, chains, wheels and shafts) will be securely guarded where appropriate with guards of rigid metal or other suitable corrosive-resistant material (but not wood).
- Retrievable guards will be securely fastened, with automatic stopping safety systems in place as well as manual stop switches next to the operator's control.
- Pipes likely to reach more than 50°C will be insulated.

2.6.15 VEHICLE SHEETING AREAS

- Suitable off-ground facilities will be provided where necessary to sheet or unsheet vehicles.
- The fenced platforms (*permanent or dismantable*) will be of the same height as most freight vehicles' bed, with steps at each end.

2.6.16 OTHER EQUIPMENT

- All storage racks should be firmly secured to immovable infrastructure and appropriate for their use with an obvious maximum load marking.
- The height/base ratio of the racks should determine the design, weights and the nature of the storage goods.
- If loading and unloading of the goods is mechanically based, exposed upright rackings will be protected, especially at the corners.

2.7 OPERATIONS

- Only workers who are appropriately trained and supervised will carry out all terminal operational activities.
- Operations will immediately cease when there is a risk to safety or health.
- All plant and equipment will be:
 - of good design and construction,
 - of adequate strength for the intended purpose,
 - of sound material and free from defects,
 - inspected at appropriate intervals,
 - properly maintained in a safe and efficient condition.
- Routine fire inspections will be carried out, emergency escapes will be kept clear and flammable materials will never be kept under stairways.
- Smoking will be prohibited within the terminal.

2.7.1 WAREHOUSES

- Pedestrians and vehicles will be separated, their respective routes clearly signed and marked.
- All goods storing areas and buildings will be designed and constructed taking into consideration best industry designs, safety and climatic factors.
- All floors will be suitably designed for the equipment and goods used on them, taking into consideration static and dynamic forces during handling; limitations will be clearly signed.
- Storage areas will be laid out with suitable traffic lanes and adequate clearance for handling equipment, hazards and limitations will be clearly marked.
- Aisles will be clearly marked off with continuous yellow lines.
- Whenever possible, stairs and lifts in warehouses will be located alongside a wall.
- All openings will be securely fenced, with fixed openings suitably constructed and lined with handholds when necessary.
- Appropriate ventilation will be provided to storage areas for dangerous goods and combustion engine vehicles.
- Bare crane conductor wires will not be installed in warehouses and transit sheds; instead, fully insulated power supply systems will be used.

- All refrigeration chambers will be openable from the inside, and a simple emergency system (*e.g. bell*) provided.
- Loading bays of low temperature goods' warehouses will be equipped with particular intermediate doors.

2.7.2 ACCESS ARRANGEMENTS

- All work areas will be provided with safe means of access.
- Pedestrians will be separated from vehicles whenever possible. Pedestrian walkways will not be used for other purposes.
- All equipment will be used according to manufacturer's instructions.
- Mobile access equipment will be preferred over portable ladders. If a portable ladder must be used:
 - the top of the ladder should trace at least 1 m above the landing place,
 - the styles of the latter will stand firm and levelled footing,
 - the ladder will be secured; preferably at its upper resting place,
 - a ladder more than 6 m high will also be secured at one thirds of its length from the grounds,
 - ladders will follow a 4:1 ratio; 4 m high for 1 m out.
- Workers using a ladder will:
 - have both hands free for climbing up and down,
 - face the ladder when climbing up and down,
 - wear suitable footwear that is not likely to slip,
 - use carrying devices for the equipment.
- Personnel and equipment shall avoid the vicinity of live electric equipment.

2.7.3 STACKING AND STOWING GOODS

- Goods and materials that are not in containers or vehicles will be kept in stable and orderly stacks or piles on grounds or floor that is firm and levelled.
- Factors to consider include:
 - maximum permissible loading on floors,
 - the presence of underground sewers or culverts,
 - the type of handling equipment available and the area,
 - the type of goods,
 - the shape and mechanical strength of the goods and their packaging,

- the duration of the storage,
 - the natural angle of ripples of bulk material.
- Stacks will remain stable at all times, including during high winds.

2.7.4 GENERAL CARGO OPERATIONS

- General cargo operations will be planned to avoid pedestrians and vehicles to work in the same area.
- General cargo handlers PPE will include:
- protective footwear,
 - safety helmets,
 - safety glasses,
 - overalls,
 - foul-weather clothing,
 - high visibility outer garments,
 - gloves.
- Whenever possible, cargo will be kept on pallets.
- Walkways will preferably be located at the edges of cargo-handling areas.
- Drums, casks and similar cylindrical cargo that can roll will be kept under control at all times.
- Cargo storage will be determined by:
- the handling equipment available,
 - the location and size of the available space,
 - the length of time in storage,
 - the subsequent operation.

2.7.5 CARGO

- All cargo can be identified (*nature, quantity and location*) at all times.
- Cargo in transit will be stored safely and securely; separating dangerous goods and keeping clear access for emergency services.
- Workers will be made aware of the general hazards and precautions associated with the cargo before handling operations begin.

2.7.6 MANUAL HANDLING

- Manual handling includes all forms of lifting, lowering, pulling and pushing of loads by authorised, properly trained and supervised workers.
- Workers will not be required or permitted to manually handle loads that are hazardous to their health or safety.
- Manual handling will be avoided whenever possible.
- Maximum weight to carry will be determined by the worker's judgement and will never be physically demanding; trial lifts may be necessary.
- Workers' fitness will be examined before manually handling loads regularly; PPE will include footwear and gloves.
- Manual loads will preferably be compact and packaged to avoid injuries.

2.7.7 PALLET HANDLING

- All pallets will be inspected before being used; and will be suitable for the intended load and method of handling.
- Loads will be as compact and stable as possible on the pallet, using an appropriate pattern.
- Over-tension will be avoided when strapping loads securely to pallets.
- The height of the load on a pallet will not exceed its longest base dimension. Pallets shall not be loaded over their rated load.
- Stack of pallets will be maximum four high.
- Dangerous goods will be stacked over a pallet with clear markings and signage.
- Unused pallets will be handled with care, not dragged or thrown and will be placed in an appropriate sheltered area.
- Pallets will never be used as an improvised platform on a forklift truck.

2.7.8 MACHINERY

- All machinery will be regularly maintained and cleaned for safe and efficient condition.
- All unserviceable machinery will be isolated or immobilised, signed or marked and brought to service or repairs.
- Safety guards will not be removed during machinery motion.

- Machines will be serviced, cleaned, lubricated, adjusted or repaired when the machine is stopped; if it is impossible to stop, a specialised work will operate according to an approved safe system of work.
- Only authorised personnel will be permitted to remove guarding from dangerous machinery.
- Audible warning system will operate before starting large or complex machinery. Hot fluids over 50°C will be suitably insulated or protected.

2.7.9 MOBILE EQUIPMENT

- All safety-critical items of mobile equipment will be maintained in a safe and efficient condition.
- Vehicles will be driven by workers who are competent and authorised to do so. Authorisations will require minimum 18 years of age, medical fitness and appropriate training for the vehicle and the operations to perform.
- Seat belts and other appropriate restraints will be provided and worn where necessary (*see figure 2-8*).
- Passengers will be only permitted in vehicles designed for that purpose and must wear a seatbelt while the vehicle is in motion.
- Speed limits will depend on the vehicle, its load and the site speed limits.
- The braking capacity will be sufficient to control and stop safely when carrying the maximum payload on a loading ramp.
- Drivers will:
 - drive at the appropriate speed;
 - not cut corners;
 - allow sufficient clearance when passing people, vehicles and objects;
 - avoid reversing and seek assistance if necessary,
 - not reverse with more than one trailer,
 - drive slower when trailers are loaded;
 - avoid breaking brutally.
- Dusty material in open trucks or carriages will be covered to avoid dust propagation.



Figure 2-8: Operator of mobile equipment in reflective vest

2.7.10 REFUELLING

- Vehicles will be refuelled at fixed installations, in a well-ventilated area in the open air. During refuelling:
 - the engine is stopped and the handbrake on,
 - the operator is out of the cab of the vehicle and on the ground,
 - sources of ignition excluded from the area,
 - hot surfaces are protected from spillage,
 - spillage and over filling are prevented,
 - spillage is cleared up before restarting,
 - filler caps are securely replaced,
 - all ground earthing tools will be placed on the ground.
- LPG containers will only be changed in the open air by trained workers.
- All LPG containers unused will be kept in a secured, well-ventilated store with their relief valves at the top.

2.7.11 OPERATIONAL MAINTENANCE

- All plant and equipment (*including emergency and personal protective equipment*) will regularly be maintained in a safe and efficient condition, in accordance with the

manufacturer's or supplier's recommendations, relevant legal requirements and operational experience.

- All unusable equipment or plant will be tagged and brought to a suitable area for repairs or discard (see figure 2-9).



Figure 2-9: Mechanical shop (equipment repair area) under construction

- Only trained and authorized personnel (engineering personnel, operators or users) will carry out maintenance and inspections.
- Safe permanent means of access will be provided to all places where maintenance personnel need to go.
- All plant will be isolated before maintenance starts (lock or permit to work systems).

2.7.12 FOREST PRODUCTS

- All forest products will be protected from extreme weather. Product weights will only be regarded as indicators.
- Storage areas will be clean, dry and levelled; considering prevailing winds when stacking timber.
- Stacks will be stable, uniform and well-spaced; stacked on suitable bearers with timber of even length.
- Round or insufficiently banded packs will not be stacked.
- Stacked heights will be limited to 3 times the width of the packs. Large packs will always be below smaller packs.
- Workers will never climb up the sides of the stacks. Pulp will never be exposed to moisture.

2.7.13 CONFINED SPACE

- Workers are allowed to work in a confined space if:
 - Personnel is specially trained,
 - specialised (breathing) equipment is fitted,
 - the confined space entry permits for the task is approved,
 - the atmosphere tested safe,
 - under the supervision of a supervisor, and
 - emergency arrangements are standing by.

2.7.14 DANGEROUS GOODS

- Dangerous goods will be handled according to applicable requirements.
- Adequate controls at all stages of the handling of dangerous goods will ensure safety of the workers.
- All personnel involved with the handling of dangerous goods will be appropriately trained for their specific duties; training will be regularly reviewed.
- The entry of dangerous goods in the terminal will be controlled by applying restrictions on:
 - the classes or quantities of dangerous goods allowed in the terminal,
 - the conditions under which dangerous goods may be present or handled.
- Dangerous goods will:
 - be identified and declared,
 - be kept at an appropriate location,
 - follow special arrangements,
 - be monitored.

2.7.15 HOT WORK

- Hot work will be carried out according to standard requirements and will require permission before starting.
- A hot work permits will specify:
 - the location and nature of the work,
 - the proposed time and duration of the work,
 - the period for which the permit is valid,
 - necessary precautions associated with the work,
 - the person directly controlling the work,

- the identity of the person authorising the work
 - a "sign off" when the work is completed.
- Necessary precautions will ensure that:
- the work area is free from any flammables,
 - no flammables will enter the area during the work,
 - the atmosphere is and will remain safe during the work,
 - appropriate PPE (overalls, gloves and eye protection) is used,
 - a trained person can use the available firefighting equipment,
 - any explosive or flammable equipment in the vicinity is retrieved,
 - periodic checks for smouldering are made in the area after the work is finished.
- If the work involves firefighting systems, a substitute system will be readily available.

2.7.16 CONTAINER OPERATIONS

- Container terminals will be laid out and organised to separate pedestrians from vehicles whenever possible, priority will be given to vehicles.
- Traffic will be controlled to avoid congestion, allowing one vehicle per slot.
- Containers will be handled according to International Standards ISO 3874 Series 1 Freight Containers - Handling and Securing or other relevant standards.
- Runways of gantry cranes will be clearly marked on the ground without possible confusion with safe walkways.
- Pedestrian personnel will be authorised under exceptional circumstances and under constant supervision, using safe walkways.
- Personnel permitted to enter a container area (*pedestrian or driver*) will be instructed on the procedures to follow while in the area.
- Containers will only be moved with suitable vehicles and equipment.
- Container securing devices will be released and locked in a designated safe place.
- Straddle carriers with approach, load and unload vehicles from the rear.
- Oversized or problematic containers will be moved to a suitable designated area.
- Containers exceeding the maximum gross weight on the safety approval plate or the capacity of the handling equipment will not be handled.

2.7.16.1 Segregation

- Operational areas of the container handling area will be fenced at least 2 m high.

- Safe walkways will be clearly marked and signed for pedestrians, away from the stacking areas and vehicular routes.
- Traffic routes should be one way and may involve traffic lights, reversing will be averted whenever possible.
- Haulers' vehicles will remain outside container stacking areas whenever possible, potentially by using exchange grids.
- Container blocks and rows will be clearly identified by markings intended for vehicles and crane operators.
- Obstructions in container stacking and handling areas will be kept to a minimum; unavoidable obstructions such as lamps will be protected by clearly visible fencing.

2.7.16.2 Operations inside Containers

- Sealed containers will be opened only with appropriate customs or other appropriate authority attending, and resealed with an equivalent or higher authority seal.
- No one will enter the container before it has been confirmed safe. Once opened, the doors will be secured in the fully open position. Besides the cargo, additional container hazards include:
 - toxic gases or vapours,
 - fumigants gases or residues, and
 - lack of oxygen.
- Personnel will not rely upon container warning signs and markings for safety.

2.7.16.3 Reception Facilities

- Suitable administrative facilities will be provided at the road entrances and exits of container handling areas (*see figure 2-10*).
- The building design will allow exchange of documents as the vehicle driver remains in the cab.
- Suitable gantries at entrances and exits enabling security verification on all sides of the containers will be present, possibly using mirrors or video systems.
- Passengers in container vehicles will remain in a specified area or room until the return of the vehicle from the container handling area.

- A safe vehicle twist-lock release area will be designated, as well as adequate parking spaces for long waiting vehicles.
- Clearly marked walkways from parking areas to buildings will be provided.



Figure 2-10: Reception facility under construction at entrance of container handling area

2.7.17 LIFTING EQUIPMENT

- Lifting equipment and accessories will be:
 - of adequate design, construction and strength for its intended use and free from any defect,
 - regularly tested, thoroughly examined, marked and inspected,
 - maintained in good working condition.
- Appropriate documentation will include:
 - a driver's instruction manual,
 - a direction manual,
 - a maintenance manual,
 - a spare parts manual,
 - the manufacturers' certification of fitness for use,
 - a certificate of test and thorough examination,
 - examination and maintenance records.

2.7.17.1 Safe Working Load (SWL)

- Safe working load will be based on manufacturer's recommendations and industry requirements.
- Every lifting appliance and item will be marked in kilograms or tonnes with its unambiguous safe working load; charts may be necessary.
- Clear distinction will be made between SWL:
 - below the header/hook of the lifting appliance,
 - of the loose gear,
 - below the loose gear.

2.7.17.2 Operator's Cab

- The cab shall provide a safe, comfortable and reasonably quiet working environment to the operator; it will be constructed with fire resistant material and conform to ISO 8566 Cranes-Cabins or other relevant standards.
- Cranes will require:
 - an unrestricted view of the area of operation,
 - adequate weather protection,
 - windows that can be readily and safely cleaned inside and out,
 - windscreen wipers,
 - a comfortable seat,
 - a sliding or inward-opening door,
 - an emergency escape,
 - adequate fire extinguishers.

2.7.17.3 Maintenance

- All lifting equipment will be maintained in efficient working condition.
- Maintenance, replacement and repairs will be regularly (or when necessary) carried out according to manufacturer's recommendations and operational experience.
- Accurate records of maintenance and repairs shall be kept.

2.7.17.4 Marking

- All appliances and gear will be legibly and durably marked with their safe working load clearly visible and easily accessible; the markings will not interfere with the safe use of the material.

- Where appropriate, the marking will include:
 - the safe working load,
 - an alphanumeric identification referring to test records,
 - the manufacturing material grade.
- On long equipment, several markings are required.
- Heavy equipment will have markings with their own weight clearly visible from a distance.

2.7.17.5 Lift Trucks

- Lift trucks in use at the terminal will be designed according to industry requirements and tested before use, after repair or modification.
- Lift trucks equipped with internal combustion engines carry flammable fuel, emit exhaust gases with toxic components and can create noise nuisance. These trucks will have an efficient exhaust system fitted with a silencer and gas cleaner and carry an appropriate fire extinguisher.
- Lift trucks used in confined spaces will be an electrically driven.
- If possible, all terminal trucks will be fitted with a standard reversing warning alarm.
- All trucks shall be provided with:
 - a plate detailing the authorised gross laden weight, the machine type and the manufacturer's name and address;
 - a plate detailing the owner's name and address as well as the servicing dates.
- No additional counterweight shall be placed to increase the lifting capacity.
- Battery electrolyte spillage will be avoided using minimum quantity of distilled water, shock absorbers and drip trays during maintenance.
- Whenever possible, the wheels will be positioned within the truck body. Appropriate attachments will be used to handle particular types of cargo.
- A special attachment (*frame fitted to fork anchoring frame with conventional hook*) will only be used if:
 - the safe working load is marked on it,
 - the maximum height of the hook lift is clearly marked on the mast off the truck.
 - the swing of the suspended load is controlled when the truck is travelling.
- Oil spills will be cleaned as soon as possible.

- Flashing orange lights will be operated when in motion.
- Trucks will be driven at an appropriate safe speed not exceeding the site speed limit.
- Seat belts will be worn when appropriate.
- Inclines and obstructed vision will be avoided.
- Horns or klaxons will be used to alert pedestrians in sensitive areas.
- Load attachments will be fully lowered when the truck is parked; the parking brake will be on.
- Lift trucks will not be:
 - driven;
 - without permission,
 - on unapproved routes,
 - with unsafe loads,
 - braked unnecessarily sharply,
 - taking bends at high speed,
 - driving dangerously,
 - used to;
 - lift a load exceeding the truck's capacity,
 - lift a poorly balanced load,
 - lift a load on only one arm,
 - travel with the forks below 150 mm,
 - carry personnel on trucks, trailers, couplings or forks,
 - push a vehicle with a truck not specially designed the purpose (unless prior approval by management),
 - deposit metal goods where they might fall onto the batteries of electric trucks.
 - used with an additional weight on the counterweight,
 - left in traffic,
 - left unattended with the keys on the ignition. Special care will be taken when a truck is driven:
 - on slippery grounds,
 - in loose areas,

- where waste is present,
 - near doorways used by personnel,
 - around corners,
 - where overhead clearance is limited,
 - near gaps or openings.
- During stacking and unstacking operations with a counter-balanced lift truck, forks should penetrate at least three quarters of the length in the load.

2.7.17.6 Reach Trucks

- Will put the brakes on before using the reach mechanism.
- Will not be driven with the reach mechanism extended.
- Personnel will be forbidden to step over the reach legs when the trucks in use.
- Will check that the load is raised above the reach legs before retracting them.

2.7.17.7 Batteries

- Batteries will be handled in a specially designed location, under the supervision of an experienced person.

2.7.17.8 Pedestrian Controlled Pallet Trucks

- The operator will always walk with it and not try to ride on it.
- The operator will walk on one side of the control handled and clear of the truck, preferably preceding the truck.
- When approaching an obstacle, the operator should be behind the truck.

2.7.17.9 Other Lifting Appliances

- Mobile Elevating Work Platforms (MEWP) will only be used with fully guarded platforms; if used as a means of access, the manufacturer will be consulted.
- When in use, the stability of the MEWP will be paramount. Before use, the operator will ensure that:
 - the appliance is suitable for the intended operation,
 - the grounds and outriggers can support the load,
 - the outriggers are fully extended, and supported if necessary.
 - wheel locks are applied, if fitted, and
 - the carriage is levelled.

- Two lifting appliances in tandem is a hazardous operation that can only be performed in exceptional circumstances after detailed planning and under the supervision of a competent person; focusing on:
 - identical appliances shall be used,
 - the load will not exceed 75% of the safe working for either appliance,
 - movements will be slow and strictly controlled,
 - only one motion will be used at a time,
 - as far as possible, cranes will not slew with the load.

2.7.17.10 Flexible Intermediate Bulk Containers (FIBCs)

- Single-trips FIBCs will never be reused.
- The lifting straps the corners of FIBCs will always be lifted vertically.
- Before lifting, FIBC bags will be inspected, the certificate of conformity and a recent (*less than 12 months*) thorough examination certification will be checked.

2.7.17.11 Pallets

- Pallets will be free from visible defects; their decks minimum 35 mm thick.

2.7.18 LIFTING OPERATIONS

- Controlling lifting operations require that:
 - all lifting equipment is suitable for the operation and environment,
 - the integrity of the equipment can be demonstrated,
 - all personnel are appropriately trained and supervised,
 - lifting operations are properly planned and managed,
 - safe systems of work are followed,
 - the equipment is regularly maintained.

2.7.18.1 Planning and Control of Lifting Operations

- All operations will be planned and carried out under the control of a responsible person. Operators will be competent to control routine operations under the general control of management, but specialised or complex operations will be carried out under the direct control of a person with the necessary knowledge and experience.
- Lifting operations planners shall consider:
 - type and size of the ship and the cargo,

- type of loads to be lifted and their specific hazards,
- handling symbols marked on the cargo,
- attachment of the load to the lifting appliance,
- frequency of the lifting operation,
- where the loads are to be lifted from and to,
- selection of appropriate lifting appliances and their positions,
- proximity hazards,
- requirements for safe erection of the lifting appliance,
- ground loadings applied by the lifting appliance and any necessary spreading equipment,
- provision of competent staff,
- safe systems of work,
- emergency procedures including at elevated positions,
- reporting systems,
- provision and maintenance of appropriate safety equipment.

2.7.18.2 Weather Conditions

- Lifting operations will consider weather conditions as they are carried out according to industry requirements.
- Lifting operations may need to stop when weather conditions include:
 - high winds,
 - lightning,
 - strong visibility impairment.
- Weather warning will rely on weather forecasts, anemometers and other weather indicators.
- Operating instructions will include actions to be taken by specific personnel in the events of adverse weather.
- Lifting operations shall stop when load movements become difficult to control.
- If there is a possibility of lightning striking a lifting equipment, lifting operations will be stopped and all personnel retrieved from the equipment's vicinity.
- An approved person will meticulously examine all equipment struck by lightning before being returned to service.

2.7.18.3 Inspections

- All lifting appliances will be regularly visually inspected for safety before and during their use.
- The inspection extent and depth of the equipment shall depend on the length of the period that the appliance is out of use and its location during that period.
- Inspection is separate from maintenance, carried out by conscientious responsible personnel.
- Operators will be checked for competency to carry out the inspections.

3.0 ENVIRONMENTAL MANAGEMENT

Environmental management planning is an indispensable component of overall planning and implementation of mega-projects like container terminals. It guides management and provides the option to prevent or minimize environmental impacts arising from such projects.

3.1 ENVIRONMENTAL MANAGEMENT ACTIVITIES AND CONTROLS

This section focusses on environmental management strategies put in place to sustainably manage environmental issues resulting from the activities of TACOTEL. The environmental management plans that has been proposed contain a list of proactive measures that will address the potential prior to their occurrence. The management strategies are based on the following hierarchy of control principles listed below:

- Elimination (*avoid the activities that generate the environmental aspects*),
- Substitution (*with a lower aspect/impact activity or services*),
- Engineering controls (*to reduce the impact of the activity or services*),
- Implementation of administrative procedures (*to control the activity or services*),
and
- Clean up or remediation measures (*to mitigate impacts after an activity*),

Based on the aspect/impact sources identified, the following mitigations / control measures are proposed to control or avert environmental pollution.

3.1.1 AIR QUALITY AND NOISE

3.1.1.1 Purpose

This section provides a plan for TACOTEL to adopt in reducing the quantities of air pollutants and noise levels emanating from their operations at the Takoradi Location in Ghana that is likely to pollute the ambient air.

3.1.1.2 Scope

The scope of the air quality and noise management plan is applicable to activities undertaken at TACOTEL's container terminal at Takoradi in the Western Region of Ghana.

Table 3-1: Details of air quality management plan

Activity	Aspect	Impact	Significance	Management Strategy	Responsibility
Movement of trucks	Exhaust emission	Air pollution		<ul style="list-style-type: none"> Periodic maintenance for trucks to help reduce the emission of exhaust gases. Ensure all truck engines are switched off when stationary 	<ul style="list-style-type: none"> Head of plant and equipment Heavy duty operators Light duty drivers Mechanic
	Noise generation	Noise pollution		<ul style="list-style-type: none"> Ensure all truck engines are switch off when stationary 	<ul style="list-style-type: none"> Heavy duty operators Light duty drivers Mechanic
	Dust generation	Air pollution		<ul style="list-style-type: none"> Untarred/ unpaved roads must be tarred or paved. Exposed surface areas should be landscaped using lawns or bricks to reduce dust particles being stirred up in windy conditions. Apply water sprays to unpaved surfaces as required to minimise the discharge of wind-blown dust particles 	<ul style="list-style-type: none"> Head, finance and Account Security, Health and environmental personnel
Generator	Noise generation	Hearing impairment		<ul style="list-style-type: none"> Move generators far from operation areas and use noise screening if applicable 	<ul style="list-style-type: none"> Head, Plant and Equipment
	Exhaust emission	Air pollution		<ul style="list-style-type: none"> Regular servicing of generator to reduce exhaust emission 	<ul style="list-style-type: none"> Head, Plant and Equipment
Storage from Organic waste	Odour	Air Pollution		<ul style="list-style-type: none"> Avoid eating in the office or operational area and use the pantry or canteen instead 	<ul style="list-style-type: none"> All Staff
Fumes from hazardous substances when devanning	Fumes	Air pollution		<ul style="list-style-type: none"> A separate area and Priority should be given to hazardous containers being devanned. 	<ul style="list-style-type: none"> Security Manager. Traffic officer (Import)

3.1.2 WATER QUALITY

3.1.2.1 Purpose

This section provides a plan for TACOTEL to adopt in managing water loss from all departments of its operation.

3.1.2.2 Scope

This management plan is applicable to all departments of TACOTEL operating at the container terminal located at Takoradi in the Western Region of Ghana.

3.1.2.3 Details of Water Management Strategy

- Management should see to the installation of water closets that use less water in washrooms throughout the terminal.
- Proper drainage systems would have to be constructed; gutters and elevations to guide runoffs move through guided channels.
- Sceptic tanks should be constructed to ensure biodegradable solids are decomposed before they are finally disposed off through soakaway.
- Fuelling and maintenance areas will be floored with concrete and have secondary containment to control spills.
- Underground fuel storage tanks will be double walled and periodically inspected by certified authorities to prevent leakage that can pollute ground water.
- Maintenance activities will only be carried out at designated places.
- Spilled fuel, oil and hazardous materials will be quickly contained and cleaned to prevent seepage into the ground.
- Ensure separate drainage systems for storm water and effluent.

3.1.2.4 Responsibilities

- Top Management should ensure the resources to implement the water management plan are provided on a timely basis.
- All staff will be educated on water conservation practices and usage by the Human Resource Unit.
- All staff are required to adhere to the water quality management plan.

3.1.3 FLORA AND FAUNA

3.1.3.1 Purpose

TACOTEL has social responsibility to manage fauna in their work environment. This management plan has therefore been prepared to avoid and minimise impacts of TACOTEL operations on fauna and flora habitat within the vicinity of TACOTEL. The plan outlines measures to manage flora and fauna species. Objectives relevant to the Flora and Fauna Management Plan include:

- Prevent adverse impact on native flora and fauna species present at the facility.
- To control the risk of introduction of unwanted, non-indigenous organisms (pests)
- Monitor and control any feral species
- Protect threatened and priority fauna

3.1.3.2 Scope

The scope of the Flora and Fauna Management Plan is applicable to the TACOTEL, Takoradi in Ghana. All stakeholders and contractors working for or on behalf of TACOTEL are expected to comply with the flora and fauna management plan.

3.1.3.3 Details of the Management Plan

Existing Environment and Nature of Native Flora and Fauna

The environment of TACOTEL has no significant vegetative cover except for weeds. Close to the administration block is lawns, interspersed with ornamental plants to add more greenery to the environment (*see figure 3-1*). The facility also has date palm trees to serve as windbreak. Animal species found include common rodents like mice and rats, reptiles like wall geckos and agama lizards, amphibians, birds, arthropods, insects, flies and other feral animals.

Flora and Fauna Management Strategy

To ensure that flora and fauna mitigation measures are implemented, an effective management plan is to be implemented. This will help track the performance of TACOTEL in managing flora and fauna in its environs. A flora and fauna monitoring will also be conducted to ascertain the level of achievement of the management plan. The monitoring methodology considers the following parameters:

- Bushy/ weedy environment;

- Pest infestation at the facilities;
- Pest control strategy, i.e. equipment selection, type of chemicals for fumigation, etc.; and
- Management of feral animals and predators

The Flora and Fauna Management strategy is presented in *table 3-2*.



Figure 3-1: Existing flora at the terminal

3.1.4 COMMUNITY RELATIONS

3.1.4.1 Purpose

TACOTEL will look at ways of engaging in activities that would benefit the community's economy and living standards of the people. Having a positive impact on the people, culture and community, there will be a long-term benefit for TACOTEL, which would include community support, loyalty and goodwill.

3.1.4.2 Details of Management Plan

- Management will give priority to the employment of people in the community before the public.
- Qualified persons within the community will be considered first before external personnel.
- Low-skilled labour job positions in the technical departments such as fuels attendants, light duty drivers, mechanic, assistant shed supervisor, forklift operators, security officers should be considered to qualified people within the Takoradi operational area.

- The recruitment, training and payment of these workers goes a long way to provide a livelihood for the people, increasing their capacity and improve upon the economy of the community.
- In the preliminary stages of the company's operations, petty traders and food vendors would be considered to provide their goods and services to the workers on site to also earn a livelihood.
- TACOTEL will construct a new road lane along the main operational to reduce traffic and road congestion.

3.1.5 TRAFFIC MANAGEMENT

3.1.5.1 Purpose

This Traffic Management Plan (TMP) outlines the traffic control and traffic management procedures to be implemented by TACOTEL to manage potential hazards associated with the traffic environment during its operations.

3.1.5.2 Objectives and Strategies

The objectives of the Traffic Management Plan are:

- To provide protection to workers and the general public from traffic hazards that may arise as a result of TACOTEL's activity.
- To manage potential adverse impacts on traffic flows to ensure network performance is maintained at an acceptable level.
- To minimise adverse impacts on users of the road reserve and adjacent properties and facilities.

3.1.5.3 Scope

The scope of the Traffic Management Plan is applicable to all activities on the adjoining roads of the TACOTEL facility in Takoradi. The roads that are likely to be impacted by the project is the Takoradi-Sekondi Road and the truck road at the northern part of the facility.

Table 3-2: Flora and fauna management strategies

Issue/ Aspect	Objectives	Actions	Monitoring Means	Responsibility
Management of Flora and Fauna	<ul style="list-style-type: none"> ▪ To comply with applicable compliance obligations ▪ To preserve the natural biodiversity ▪ To ensure that workers/ contractors know what to do if new species are sighted ▪ To prevent uncontrolled destruction of flora and fauna species ▪ To preserve the attractiveness and value of the facility 	<ul style="list-style-type: none"> ▪ Ensure strict adherence to the Waste Management Plan to prevent littering of lawn ▪ Ensure the lawn is not used as walkway. ▪ Provide mower to clear lawn ▪ Adopt sustainable strategy in trimming ornamental plants. ▪ Report sighting of rare biodiversity species immediately to supervisors ▪ 	<ul style="list-style-type: none"> ▪ Daily inspections ▪ Reports on sightings of unfamiliar species ▪ Number of injured fauna species reported 	<ul style="list-style-type: none"> ▪ Unit Heads ▪ Health/Environmental personnel ▪ Environmental monitoring consultants/ contractors
Management of Pest infestation	<ul style="list-style-type: none"> ▪ To maintain a clean and beautiful work environment ▪ To prevent property damage and save cost ▪ To prevent disease transmission and other risks associated with pest infestation 	<ul style="list-style-type: none"> ▪ Dispose waste regularly and store in covered waste bins ▪ Trim or remove any undesired vegetation, such as weeds, shrubs and trees, and keep them at a distance (at least two feet) from the buildings. ▪ Fumigate facilities against pest ▪ Find and eliminate sources of moisture in various plumbing areas, such as leaky pipes and clogged drains. ▪ Discourage eating in offices, use the pantries ▪ Keep food sealed and stored properly, particularly in pantries. ▪ Seal cracks and holes on the outside of the buildings, including entry points for utilities and pipes. ▪ Repair decaying exterior wood on buildings 	<ul style="list-style-type: none"> ▪ Daily inspections ▪ Complaints from facility users ▪ Animal droppings sighted ▪ Trapping of animals ▪ Odour 	<ul style="list-style-type: none"> ▪ Unit Heads ▪ Health/Environmental personnel ▪ Environmental monitoring consultants/ contractors
Management of Predators and feral animals	<ul style="list-style-type: none"> ▪ To comply with compliance obligations ▪ To prevent attacks on personnel ▪ To ensure that workers/ contractors 	<ul style="list-style-type: none"> ▪ Occasional screening of areas with plant cover ▪ Restricting access to operational areas using fences and walls ▪ Fumigated predator prone areas to repel the 	<ul style="list-style-type: none"> ▪ Visual Inspections ▪ Records of predators/ feral 	<ul style="list-style-type: none"> ▪ Unit Heads ▪ Health/Environmental personnel ▪ Environmental monitoring

Issue/ Aspect	Objectives	Actions	Monitoring Means	Responsibility
	know what to do if predators and/ or feral animals are sighted	predators <ul style="list-style-type: none"> ▪ Consider trapping animals with cages and avoid killing animals where possible ▪ Where situation cannot be handled internally, engage animal control contractors to manage predators 	animals encountered on TACOTEL premises	consultants/ contractors

3.1.5.4 Roadway Characteristics

The primary road of direct significance to the facility is the Takoradi – Sekondi road. This is an asphalted single lane carriage road without visible markings to demarcate the extent of lanes. Signage at the sides are not enough and the few available ones are partly damaged. There is ample space on both sides of the road to handle safe pedestrian movements. However, walkways and pedestrian crossing points are not clearly delineated.

The road is observed to be mostly packed during the weekdays in the morning between 6:15am and 9:30am and evening between 3:30pm and 8:00pm. During such times, the road is choked with little or no flow of movement. Occasionally, the flow of movement during the non-peak hours could be very slow owing to the increase number of vehicles plying the route. The road is widely accessed by varied road users including private transport, cyclist and public transport such as taxis, trotros, buses, mini buses, tipper trucks, cargo trucks etc.

3.1.5.5 Management Strategies

In an effort to meet the objectives of the traffic management plan, the following strategies will be considered;

- Provision of an extra traffic lane at the frontage of the facility as shown in the figure below to facilitate manoeuvring of trucks and accommodate vehicle volumes.
- Mounting of road signage where necessary as shown in figure 3-2.
- Construction of security check point to aid direct traffic.
- Institution of rapid response strategy to tow or repair damaged or faulty trucks avert build of traffic.
- Ensure delays are minimised.
- Ensure all road users are managed including motorists, pedestrians, cyclists, and people using public transport.
- Provision will be made for works personnel to enter the facility area in a safe manner in accordance with safety procedures.
- All entry and exit movements to and from traffic streams shall be in accordance with the requirements of safe working practices.

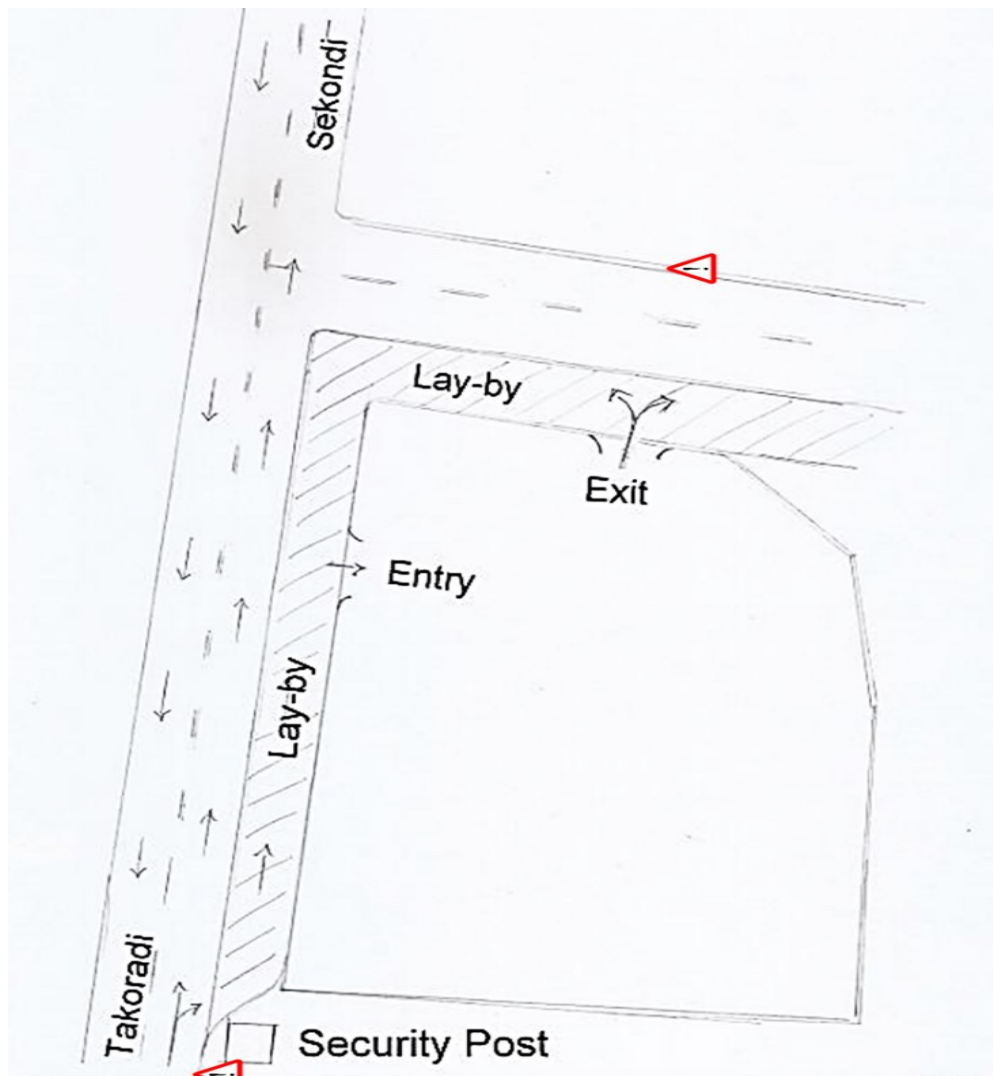


Figure 3-2: Layout for Traffic Management

3.1.6 WASTE MANAGEMENT

3.1.6.1 Purpose

This Waste Management Plan (WMP) has been developed to identify and document potential waste related risks and develop appropriate mitigation measures and procedures to ensure that the environmental objectives of TACOTEL and the relevant statutory requirements are addressed.

3.1.6.2 Scope

This procedure is to provide appropriate guidelines in order to identify, classify, segregate and store waste in appropriately labelled containers at accessible waste storage areas to reduce impacts on land resources. The scope of this plan applies to the TACOTEL container terminal at Takoradi.

3.1.6.3 Procedure for Waste Management Plan

Waste Categories

Waste generated are to be identified, quantified and characterized. Waste management practices will be consequently selected for each waste category. Waste generated is classified in hazardous and non-hazardous waste streams. The Operational Unit Heads will track all disposal of waste from the various operational areas/units.

Basic Guidelines for Waste Management

Waste management aims at environmentally responsible handling and minimizing the wastes generated by the activities of TACOTEL and the associated environmental impact. The principles of waste management employs options of source reduction, waste material reuse in its original form, recycling/ recovery by converting waste into usable materials. The waste minimization process includes a strategy for managing wastes based on the hierarchical principles of:

- Eliminate; (avoid producing waste in the first case)
- Reduction; (Reduce waste generated.)
- Reuse; (Use items as many times as possible)
- Recycle; (Recycle what you can only after using them)
- Disposal (Dispose of what is left in a reasonable way)

All wastes, which cannot be reduced or reused, are recycled by returning the materials to a recycle vendor, e.g. metal scraps and broken glasses. When no market or capability exists for a given recycled waste, the waste will be sent to appropriate waste containers for subsequent disposal by a local authority approved waste management firm.

No waste is allowed to be stored for indefinite periods. The source, classification and management strategy of waste generated is presented in *table 3-3*.

Table 3-3: Sources, Classification and Management Strategy for generated waste streams

Waste	Source	Waste Classification	Management Strategy	Responsibilities
Paper	Offices and operational units.	Non Hazardous	<ul style="list-style-type: none"> Encourage paperless transactions (mails, text messages, to reduce the need for printing. Reduce the number of papers used by printing on both sides of paper where possible Recycling waste paper into tissue/toilet roll 	<ul style="list-style-type: none"> Unit Heads All workers
Packaging waste (cardboard, plastic, wooden, metallic)	Container storage areas or devanning area	Non Hazardous	<ul style="list-style-type: none"> Encourage bulk purchase to reduce volume of packaging material Reuse packaging material for other purposes Recycling into packaging boxes, door panels 	<ul style="list-style-type: none"> Unit Heads All workers
Plastics/rubber bottles and wrappers	Offices and operational units	Non Hazardous	<ul style="list-style-type: none"> Recycle where possible Segregate for recycling/disposal 	<ul style="list-style-type: none"> Unit Heads All workers
Empty/ broken glass bottles or containers	Offices and operational units	Non Hazardous	<ul style="list-style-type: none"> Reuse: Empty glass bottles to be collected by bottling company Broken glass to be segregated for disposal 	<ul style="list-style-type: none"> Unit Heads All workers
Food waste and fish residues	Pantries/ Canteen	Hazardous/ Non Hazardous	<ul style="list-style-type: none"> Reduce food wastage by taking only what you can eat where possible Segregate and package for animal farmers Segregate for disposal 	<ul style="list-style-type: none"> All workers
Light bulbs and fluorescent light fittings	All operational units	Hazardous	<ul style="list-style-type: none"> To be segregated from general waste stream and stored in designated bins for disposal by an approved waste contractor 	<ul style="list-style-type: none"> All workers
Empty toners/ cartridges	Offices	Hazardous	<ul style="list-style-type: none"> To be segregated from general waste stream and stored in designated bins for disposal by an approved waste contractor 	<ul style="list-style-type: none"> Unit Heads IT Head All workers

Waste	Source	Waste Classification	Management Strategy	Responsibilities
Electronic and electrical equipment waste	Offices and Information Technology unit	Hazardous	<ul style="list-style-type: none"> To be segregated from general waste stream and stored in designated bins for disposal by an approved waste contractor 	<ul style="list-style-type: none"> IT Head Unit Heads
Batteries	Plant and Equipment unit	Hazardous	<ul style="list-style-type: none"> Repair where possible Recycle Separate from general waste stream. 	<ul style="list-style-type: none"> Mechanic
Lube oil/motor oil	Plant and Equipment unit	Hazardous	<ul style="list-style-type: none"> Recycle To be stored in a sealed secure container within a bunded area Sale to licensed waste oil dealers 	<ul style="list-style-type: none"> Mechanic
Washroom effluents	Offices	Hazardous	<ul style="list-style-type: none"> To be stored in septic tanks with soak away to reduce volumes to be dislodged. 	<ul style="list-style-type: none"> Top Management
Used Personal Protective Equipment (PPE)	Used PPE from all operational areas	Hazardous	<ul style="list-style-type: none"> To be separated from general waste stream and stored in designated bins 	<ul style="list-style-type: none"> All workers
Spilled/used oil, spilled fuel, grease and containers	Stores, mechanical workshops	Hazardous	<ul style="list-style-type: none"> Recover spilled oil/ fuel/grease where possible Residue to be stored in sealed secure waste containers within a bunded area for collection by special waste management firm 	<ul style="list-style-type: none"> Mechanic All drivers

Waste Segregation and Collection in the Operational unit

Strategic locations around the terminal will be designated for collection and segregation of waste. These locations will be as close as reasonably practicable to the area where waste material is generated. Waste containers will be selected to provide secure storage for each waste stream.



Figure 3-3: Colour coded and labelled waste segregation bins

Waste containers will be provided with clear labels and/or colour coding indicating the appropriate waste stream, typically paper, rubber/plastics, metal and food waste to ensure that waste is deposited in the correct container to enable efficient segregation (*see figure 3-3*). All hazardous waste will be separated from the general waste streams and stored separately.

Collections of waste by the appointed waste disposal contractor should be on either a scheduled or 'call-off' basis scheduled by the Head of Human Resource. Removal of waste will be monitored to ensure that waste is removed from site in a timely manner to prevent build up and escape of waste materials.

Hazardous waste (*e.g. spill material and empty chemical containers*) and storage drums (*i.e. aerosols or oil filters*) are to be segregated into closed skips in bunded and shaded areas close to workshops and operating areas for hazardous waste segregation. All hazardous wastes are to be collected in compliance with applicable legal requirements and recommendations of the relevant Material Safety Data Sheets (MSDS), if available. These

will be monitored and emptied into the special hazardous waste storage bins by the waste disposal contractor.

Pollution prevention measures will be considered before these waste storage areas are established. Specifically, they will be located away from drains and other sensitive receptors and where required emergency spillage clean up kit will be provided where appropriate *e.g. where waste oils are stored.*

Storage of Waste

Waste generated at the facility will temporarily be stored at designated areas for a defined period. Such areas may be modified with time, depending on the facility needs, but they will always have to adhere to the following requirements:

- Storage areas of adequate size and capacity should be able to accommodate a number of containers consistent with waste generated in the area/facility;
- Storage areas are to be open to air, but a cover should protect hazardous wastes. When appropriate, sealed drums will be stored in shaded areas to avoid risk of ballooning or pressure build-up;
- Particular care shall be used to storage liquid contaminated/hazardous waste, which shall be stored in secure bunded areas, with an impervious base. These areas shall have a suitable drainage control.
- Containers and storage tanks shall be designed of suitable/compatible material to contain the waste and have an identification label.
- Suitable spill clean-up materials kept should be available at or close to the designated storage area, in order to deal with any accidental spillages/leakages;
- Temporary waste storage areas must be regularly inspected;
- An inventory of stored waste should be regularly maintained.
- The hazardous materials storage area must be fenced, identified, and communicated adequately with signage.

Waste Transportation and Disposal

With the exception of septic tank sludge, all waste will be collected, transported and disposed by an approved/ licensed waste management contractor who is expected to manage waste in an environmentally sustainable manner.

Septic tanks will be dislodged under strict operational controls and disposed of in compliance with the applicable local government regulations for sewage management.

Record Keeping

Records of wastes generated, stored and properly disposed shall be kept by the Head of HR.

Reporting

The Head of HR at the end of every quarter shall prepare environmental statistics/indicators and submit them to the Terminal Manager. Quantity of waste, with details on waste classification (hazardous/non-hazardous), and final fate (recycled/reused, stored, and disposed) are estimated and reported.

Communication and Training

This plan shall be communicated to all Sub-contractors' representatives to explain and describe the contents of this plan. The Staff of each operational unit assigned waste management responsibilities shall be given training in the basic and/or specific information about most significant issues related to waste management.

Staff engaged in the handling and management of hazardous waste shall be given additional training to be more competent. Training activities reports shall be recorded and maintained by the Head of Human Resources.

3.1.7 HAZARDOUS MATERIALS

3.1.7.1 Purpose

This section provides a plan for TACOTEL to adopt in managing hazardous substances from containers during devanning

3.1.7.2 Scope

The hazardous materials management plan is applicable the handling of all hazardous cargo received at the container terminal operated by TACOTEL at Takoradi in the Western Region of Ghana.

3.1.7.3 Details of the Hazard Management Strategy

- Containers with hazardous materials will be handled with priority and at a designated area to curb health concerns.

- All personnel handling goods from hazardous cargo containers will wear appropriate PPEs.
- First aid kits appropriately stocked will be provided and placed at vantage points within the hazardous cargo handling area.
- Fresh water taps will be provided in the vicinity of the hazardous cargo handling area.
- All staff working in the hazardous cargo handling area will be made aware of likely environmental aspects and appropriate mitigation measures.
- All staff working in the hazardous cargo handling area will be made aware of likely health impacts and proper first aid methods to use.
- Staff should handle liquid chemicals very carefully so it does not spill.
- Staff should be educated on the risks and effects of such materials and the proper handling and containment.

4.0 MONITORING AND REVIEW

This section is to facilitate monitoring and measurement of key characteristics of TACOTEL's operations with significant HSE risk, in order to determine the extent to which TACOTEL's HSE objectives are met, including evaluation of compliance with legal and other requirements.

This information is reported internally to support Management Review and continual improvement of TACOTEL's HSE performance. It is also reported to external stakeholders including regulatory authorities and other interested parties, if necessary.

4.1 IMPLEMENTATION AND MONITORING

This section addresses how activities are to be performed and monitored, and how corrective action is to be taken when necessary.

4.1.1 PROCEDURE REQUIREMENT

- HSE performance targets shall be set to ensure progression towards the long-term goals of no harm to people and no damage to the environment.
- Performance indicators shall be established, monitored and results reported in a way that can be externally verified.
- All HSE incidents and near misses with significant actual or potential consequences shall be thoroughly investigated and reported.

4.1.2 PERFORMANCE MONITORING

- Top Management shall ensure that there are systems in place to verify that the tasks and activities are carried out in accordance with these procedures and management strategies.
- The performance indicators of critical activities shall be closely monitored by the responsible unit head and regularly report the performance of their activity(s) using the indicators.
- Proactive measures of performance will be put in place by the Security, Safety and Environment Manager to measure the implementation of the HSE Plan and the evaluation of stakeholder concerns.
- Proactive measures such as '*unsafe act auditing*' and '*site inspections*', shall be in use to monitor performance and identify shortcomings.

- The Security, Safety and Environment Manager shall maintain a documented procedure for the periodic evaluation of compliance with relevant HSE legislation and regulations.
- The Security, Safety and Environment Manager will regularly measure, record, track and report HSE performance against targets set in the HSE Plan and in maintaining control.
- Where monitoring equipment is required for performance measurement and monitoring, the Head of Plant and Equipment shall retain records for the calibration and maintenance of such equipment.
- The progress of individuals in undertaking their HSE critical activities and also in meeting planned HSE targets shall be monitored through a staff appraisal system spearheaded by the Unit Heads.
- All HSE records shall be identified, maintained and retained by the Claims/ Documentation Unit. These should include:
 - Reports of audits and reviews
 - Audit tracking data
 - Register of or a means of identifying and accessing legislation applicable to TACOTEL's activities
 - Situations of non-compliance with HSE policy, and of improvement actions
 - Any incidents and follow-up actions
 - Any complaints and follow-up actions
 - Appropriate sub- contractor information
 - Inspection and maintenance reports of HSE critical equipment i.e. equipment providing a control and recovery function.
 - Data obtained from monitoring as input to performance records
 - Results of emergency drills and exercises
 - Training records which include HSE competency requirements
- HSE records will be legible, identifiable; traceable to the activities involved with retention times defined. They shall be stored and maintained to prevent loss and unintended use by the Claims and Documentation Unit.
- Records supporting the performance data provided to TACOTEL on an annual basis shall be kept in an auditable form by the Security, Safety and Environment Unit.

- Records shall be maintained, as appropriate to the system and to TACOTEL, to demonstrate conformance to the HSE Plan, requirements of GPHA and other industry specific standards and are used in HSE improvement planning.
- The Human Resources Unit of TACOTEL will maintain documentation that demonstrate that responsibilities and authorities have been defined for:
 - the handling and investigating of non-conformances with legislation, regulations, HSE policy and procedures
 - identify root causes and taking action to mitigate any consequences arising from such non-conformances
 - the initiation and completion of corrective and preventative actions
 - confirmation of the effectiveness of corrective and preventative action taken
- Any corrective or preventative action taken to eliminate the causes of actual and potential non-conformances shall be appropriate to the magnitude of problems and commensurate with the HSE risks encountered.
- TACOTEL shall implement and record any changes in this HSE Plan resulting from corrective and preventative action.

4.1.3 INCIDENT REPORTING AND FOLLOW UP

- The Security, Safety and Environment Manager maintains procedures for the reporting and investigation of hazardous situations, near misses and incidents, which are compliant with its policy, this HSE plan and the IMS requirements of GPHA.
- Incidents will be investigated in a timely manner, with accountabilities assigned, and progress on recommended actions monitored until close out. The Security, Safety and Environment Manager and Safety Officer will coordinate incident investigations.
- TACOTEL shall foster a culture of openness in reporting all incidents and near misses.
- All workers of TACOTEL shall be aware of the near miss and incident reporting procedures and participate in incident investigations.
- Any corrective or preventative action taken to eliminate the causes of potential incidents shall be appropriate to the magnitude of problems and commensurate with the HSE risks encountered.

- The Human Resource Unit in collaboration with the Security, Safety and Environment Unit will provide training to appropriate workers on incident investigation.
- TACOTEL shall implement and record any changes in the documented procedures resulting from corrective and preventative action.
- Lessons learnt from accidents and incidents shall be disseminated to relevant personnel, sub-contractors and interested parties through HSE trainings and meetings as well as external communication channels.

4.2 HSE PLAN AUDITING

The Security, Safety and Environment Manager shall put a programme in place to review and verify effectiveness of the HSE Plan implementation. It shall include audits by auditors independent of the work area been audited.

4.2.1 AUDIT PLAN

- The Security, Safety and Environment Manager shall establish and maintain an HSE audit programme and procedure for HSE audits to be carried out in accordance with GPHA IMS requirements, international standards and regulatory requirements.
- The plan shall cover all facilities and operations of TACOTEL on a fixed time scale appropriate to the facility and the risks associated with the activity or the operation.
- Only personnel, who have received adequate training as documented by the Human resource Unit, shall lead HSE audits.
- The Security, Safety and Environment Manager shall maintain an effective control process to ensure that audit findings are recorded, prioritised, corrective actions identified, action parties are assigned and targeted completion dates are identified and findings tracked to final close- out. Best practices and key lessons learned should be shared with all Operational Unit heads, as appropriate.
- Top Management shall periodically review audit findings/trends and follow up action plans.

4.2.2 AUDITOR COMPETENCY

- The Security, Safety and Environment Unit in collaboration with the Human resources Unit shall co-ordinate the appointment of competent HSE auditors.

- The competence of appointed HSE Auditors shall be backed by documented qualifications and trainings.
- A number of staff from different units of TACOTEL shall be competent to carry out HSE audits.

4.3 HSE PLAN REVIEW

- Top Management shall regularly review the suitability and effectiveness of the HSE system.
- A formal process shall be in place for Top Management to review the effectiveness and suitability of the HSE System in managing HSE risks and ensuring continuous improvement in HSE performance.
- The Review shall address but not be limited to:
 - the findings of previous reviews;
 - the need to change HSE policies and objectives;
 - the impact of significant organisational, location or activity changes;
 - the HSE concerns of employees, sub-contractors and external stakeholders;
 - the provision of adequate resources and competent personnel to achieve HSE targets;
 - audit findings;
 - verification of closure of corrective actions resulting from HSE reviews, audits, inspections and incident investigations; and
 - review of legal compliance.
- Management Reviews of the HSE System shall take place on an annual basis.
- Performance against annual HSE objectives shall be reviewed regularly.
- Results of Management Reviews and identified remedial actions shall be documented and monitored until conclusion by the Security, Safety and Environment Manager.

5.0 APPENDICES

APPENDIX ONE

SITE LAYOUT PLAN

APPENDIX TWO

SITE ACCESSIBILITY PLAN