

LIBERIA TREE and TRADING CORPORATION

GBI – DORU and DOEDAIN COMMUNITIES FOREST (CFMC)
Nimba and Rivercess Counties



ENVIRONMENTAL AUDIT RREPORT

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1.0 INTRODUCTION

1.1 GENERAL BACKGROUND

This instrument comes as an Environmental Audit Report to certify the application for the renewal of Environmental Permit which expired this year. The work of the company was concentrated in the Gbi & Doru Administrative District, Nimba County, as dictated by the New Forestry Laws of 2006.

Liberia Tree and Trading Corporation (L TTC) were awarded a Community forest blocks in Nimba County by the people of the Gbi and Doru communities and by the people of Doedain District River Cess County. These blocks of forest are expected to be managed in an environmentally friendly manner.

The project was planned for the harvesting of Logs from these blocks of forest. L TTC activities in the Gbi & Doru and Doedain communities cover a land space of 31,155ha. The Nimba County portion that is found in the Gbi & Doru Community covers 24,788ha, while the River Cess portion covers 6,367ha

During the management of the Gbi & Doru forest, the company mandated to employ modern logging method to minimize the impact on the environment in which they would work.

The area under consideration is situated in Tapita Statutory District, Gbi and Doru Administrative District, Nimba County about 30km away from Tipata City.

The overall objective of the company undertaking in the Gbi & Doru Communities was to carry out logging operations that



would lead to the supply of wood/timber for both the local and international markets.

Pertinent to the sustainable Management of the Environment is the Environmental Protection and Management Laws of Liberia (EPML) which provides the condition or performance for standard for social and environmental impact assessment and sustainability. This audit is concentrated in the Gbi&Doru District, Nimba County where the Company's operation was active.

1.2 Audit Scope

This Audit Report includes an assessment of the potential environmental and special consequences of logging and timber processing operation as of the date of commencement of the Company's operation over the period.

The Audit covers solid waste management, workers health and safety, air, noise, water and petroleum product management.

1.3 Audit Objectives

The objective of this Audit Report is to assess the level of compliance of the EMP and all other related guidelines submitted to the EPA and other related Agencies by the concessions which necessitated the issuance of operational license or certificate by the EPA.

2.0 AUDIT PROCESS

2.1 Document Review

The company's environmental document and other relevant documents were reviewed to key out major environment indicators that could have an adverse impact on the environment during its operation in the Gbi – Doru and Doedain Community Forest.

2.1.2 Policy of LTTC

The policy of LTTC is in consonance with the National Environmental Policy and its objectives are anchored on the following:

A. Occupational Health and Safety

LTTC is committed to the principles of sustainable development and continual improvement throughout all phases of its activities, from initial development, construction, operation and decommissioning and post closure.

The company is also committed to developing a culture and management system that supports its Safety and Health Values by encouraging behaviors and implementing processes that ensure the safety and health of all employees, contractors, customers and communities associated with its operations. Further, LTTC is committed to working closely with the local community to promote independent sustainable economic development.

B. Employees Housing and Recreation

The employees shall be well housed with adequate utility and service that will guard against environmental degradation. Appropriate infrastructure for recreation and relaxation shall be provided.

C. Hazardous Waste Management

"Hazardous Waste" is a solid or liquid waste exhibiting one or more of the following characteristics: Flammability, corrosiveness; reactivity, and toxicity. Waste oil and solvents are included in this definition.

This Policy is designed to ensure that every effort is made to minimize the generation of hazardous waste and that all hazardous waste are properly managed and disposed.

This policy is applied to all LTTC employees and contractors who may generate hazardous wastes including personnel in the harvesting operations and transportation of goods and services.

The Office of Environment (OE) has oversight responsibility for the hazardous waste management program, including waste pickup, segregation, labeling, storage, disposal, inspection, road keeping and training. This department is responsible for properly managing its area. The department accumulation area must be carefully maintained and inspected weekly. Each area must be equipped with a containment tray or tub to separate incompatible waste streams.

Hazardous waste will be collected by the OE and stored at central accumulation area. This area must be secured, marked with signs and inspected weekly. In the event of a spill or



accidental release, spill kits will be kept on site to facilitate a timely response and cleaning.

The OE shall conduct hazardous waste training for all LTTC employees and contractors who may generate work with/or near hazardous waste. Each employee covered by this program must be trained annually.

Record will be kept for all permits, licenses, hazardous waste shipping document, inspection logs, training documentation and agency correspondence. These documents will be kept on file for at least three years.

D. Petroleum Product Management

This policy is designed to ensure that Petroleum storage tanks maintained by the Management of LTTC are managed to protect the environment and the people of the Gbi-Doru & Doedain Communities. This policy applies to all underground and above ground petroleum storage tanks.

The Administrative Manager is responsible for tank installation, modification closure and removal of out-of-service terms in collaboration with the OE. He/ She is also responsible for the operation of all tanks including maintenance, repairs, annual inspections and record keeping. The office of the Environment is responsible for spill prevention and notifying the County Coordinator of the Environmental Protection Agency. The OE shall periodically conduct accident prevention briefing.

E. Air Quality Control

This policy is designed to ensure that LTTC air emission Sources are operated to protect the environment and control its air pollution. The Policy applies to all emission sources including:



Generators, heavy-duty machineries, vehicle and other auxiliary activities.

The management shall take steps necessary for the effective management of the natural environment. The intent of this action is to ensure the sustainability of the environment and to promote the participation of the members of the public in the process of integrating environmental concerns in the planning operations as well as to ensure that any activity which may cause an adverse effect on the natural environment be assessed before such activity is commenced and that such adverse effect be taken into account in deciding whether or not such activity should be implemented.

The policy of LTTC embodies principles of environmental management such as:

- ❖ The "Precautionary Principle" where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation.
- ❖ The "Avoidance Principle" is preferable to avoid environmental damage, as it can be impossible or more expensive to repair rather than prevent damage.
- ❖ The "State of Technology Principle" measures protecting the environment are restricted by what is technologically feasible and as technology improve, the improved technology shall be used to prevent and repairs environmental damage.



F. Environmental Education

The objective of this policy is to deliver effective and integrated environmental education that will build the capacity of people in the employ of LTTC and the communities within its Contract area to move towards more sustainable behaviors; having an informed, aware and motivated staff with sufficient training to perform their duties in a way which minimizes risks to the environment and work place.

G. Biodiversity

The policy objective here is to have integrity and diversity of the flora and fauna and the natural landscape of the LTTC project Area sustainably managed.

2.1.3 Concerns of Key Stakeholders

Views and concerns of key stakeholders were assessed in the Gbi/Doru District with special emphasis to communities within and around the project area which probably could be affected directly or indirectly by the project. The stakeholders' concerns in the implementation of the project are about ensuring community participation, employment opportunity priority for unemployed local community members, assisting local community with supply of basic social services and infrastructures to include the following: safe drinking water for home consumption ,schools, clinics, markets, roads, Concrete bridges , the protection of Cultural heritage, etc. within the project area.

2.1.4 Environmental Management Plan

Environmental management is concerned with implementation of the measures necessary to minimize or offset adverse

impacts and to enhance beneficial impacts. Unless the mitigation and benefit enhancement measures identified in the ESIA are fully implemented, the prime function of ESIA, which is to provide a basis for shaping the project so that overall environmental performance is enhanced, cannot be achieved.

In order to be effective, environmental management must be fully integrated with the overall project management effort at all levels, which itself should be aimed at providing a high level of quality control, leading to a project which has been properly designed and constructed and functions efficiently throughout its life. Hence, the overall goal of the Environmental Management Plan (EMP) of LTTC logging project is to minimize adverse impacts resulting from its activities by implementing and monitoring the proposed mitigation and enhancement measures.

Under this section, the way specific mitigation and enhancement measures will be implemented and monitored at the pre-felling and operation phases to overcome possible impacts of the project are outlined.

2.1.5 Pre-felling Phase

Prior to the cutting of blocks, boundary lines, construction and installation of equipment, plant, etc, environmental management plan should take into considerations the following recommendations:

- ❖ Ensuring that all government and concerned agency requirements and procedures related to EIA are complete with;

- ❖ Selecting of technologies, equipment and processes that minimizing adverse impacts and enhancing beneficial impacts;
- ❖ Preparation of detail forest management plan taking into consideration the number of blocks and annual coup to be approved by the FDA. The plan will incorporate specific features aimed at minimizing adverse impacts and enhancing beneficial impacts, and
- ❖ Preparation of contract documents which contain appropriate clause to allow control of impacts arising from the project implementation.



The implementation of above recommendations will be monitored by the Environmental Protection Agency of Liberia and other stakeholders. As the promoter and responsible organ of managing and minimizing environmental impacts due to the proposed project, LTTC will be responsible for handling of the recommendations during the implementation of the project.

The company shall create an Environmental Health and Safety (EHS) Department and shall be headed by a Manager. Thus, the EHS Manager shall be responsible to oversee implementation of all of company's environmental and occupational health and safety programs.

The Region Environmental Protection organ as a regulatory body will ensure participation of affected bodies in the project design/plan and monitor that the project is designed in line with the national and regional environmental laws.

2.1.6 Construction Phase

During construction phase of the project, environmental management plan should take into account the following recommendations:

- ❖ Maintaining trees of ecological importance while clearing lands for the commencement of logging purposes.
- ❖ Top soil removed during building construction will be reused for landscaping.
- ❖ Creating awareness on the value of conserving biodiversity in general and plant species in particular among the workers engaged in logging activities.
- ❖ Proper handling wastes generated from camps and other sites,



- ❖ Reduction of vehicular speed, creation of speed break, regular maintenance of equipment to reduce dust and other emissions,
- ❖ All wastes generated from the project area will be managed properly. Solid wastes will be disposed of in designated area.
- ❖ The construction activities are the major source of dust emission and air pollution. However, it can be managed by:
- ❖ Discarding construction wastes in an appropriate or authorized waste management manner.
- ❖ Preventing the generation of air pollution during the project period.
- ❖ Health and risk management should be done to avoid unnecessary impact on human health. First aid service will be provided on site, in case of serious treatment,
- ❖ They will be transported to nearest health facilities or emergency center.
- ❖ The monitoring of recommended measures and ensuring its implementations during the project life span will be carried out by the EPA in collaboration with the Environmental health and safety Department of the company.

2.1.7 Operational phase

During operational phase of the project, environmental management plan should take into account the following recommendation:



- ❖ Material Data Sheet (MDS) will be available for many products to add to the information on the product label about the risks to the environment and how to control them,
- ❖ Replacing dusty toxic chemicals products with liquid or granular products of equivalent effect,
- ❖ Avoid leaks of fuel and drift of spray chemicals during application and preparation,
- ❖ All spray operators must wear suitable and intact personal protective equipment and clothing,
- ❖ Equip storage facilities for fuel oil, etc with secondary containment bonding to contain spills and leaks; and
- ❖ Provide workers safety features such as showers, protective clothing, and spill cleanup kits.
- ❖ Operators, employees and or visitors that work with or get in contact with machinery that produce high noise pollution must be supplied with protective gear gadgets.

The objectives of the environmental management program at this phase of the project are: protection of the environment from environmental degradation and other pollutants, protection of workers from work area health hazard.

Efficient use of ground water sources, waste management, and improve the environmental performance of the company.

The Environmental and Safety officer, will be responsible for regular conducting of internal environmental management and monitoring activities. He/she will monitor all activities of the project against the plan to ensure proper implementation of recommended measures. It is expected that the local EPA's agent may follow up on the implementation of the activities against environmental laws.



2.1.8 Environmental Monitoring Program and Parameters

Environmental monitoring and data collected through it may be used not only as a guide to performance measure, but also as a source of credibility and trustfulness in the relationship with the regulatory authorities. Therefore, conducting monitoring will be of paramount importance. The monitoring targets are:

Effluents: the water quality of the project area should be monitored for potential contaminants.

Soil: Periodical analysis of soils from the fruit and vegetables field should be undertaken to monitor nutrient status.

Workers' safety: Periodic check of the safety of workers is important to prevent on job accidents and employees health hazards.

2.2 Opening Meeting

On Thursday, April 13, 2017 an opening meeting was held with the Management of Liberia Tree & Trading (LTTC) Company's facility in Nimba County. The meeting was aimed at acquainting the LTTC Company with their role toward the Management of the nature. At that meeting, the purpose of the Audit as well as the process involve were also highlighted. During that meeting, the company was represented by the Camp Manager, Mr. Edward D Tarpeh and other Top Management. The Management accepted the team and pledged their fullest cooperation during the audit period in the concession.



2.3 Site Inspection

During the audit process, three major sites of LTTC Logging Company were inspected. They include the Camp facilities in Nimba County, Liberia.

Specifically, the audit process was designed to look at key issues such as:

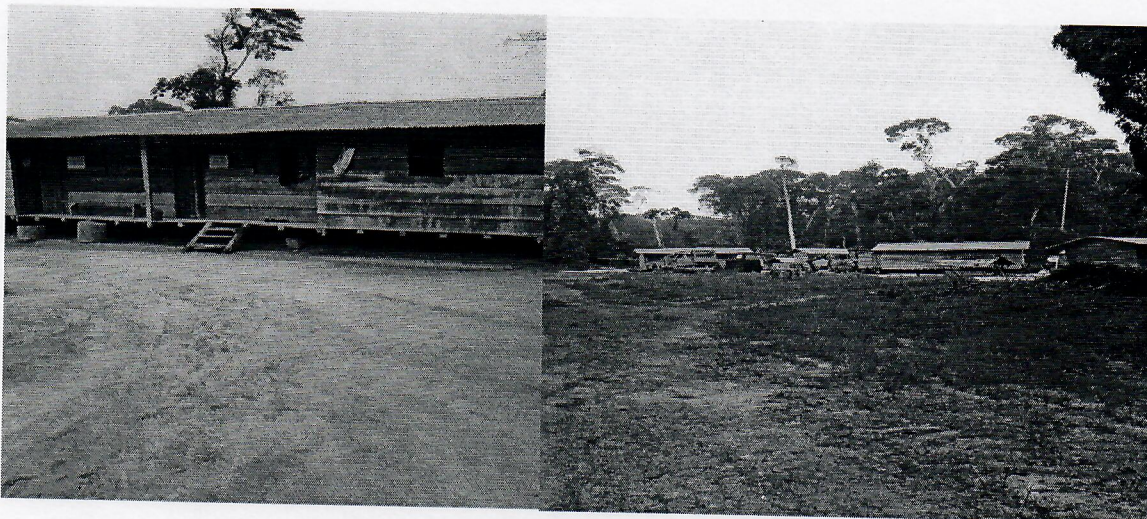
- a. Health and safety
- b. Waste management
- c. Fuel handling, etc.

2.4 Audit Findings

2.4.1 Site Inspection

During the Audit, sites of operation were inspected and primary documents that are related to the project were reviewed to establish the basis for compliance and noncompliance.

2.4.2 Camp Site



At the Camp Site of Liberia Tree & Trading Company (LTTC) the following components of the company's operation were

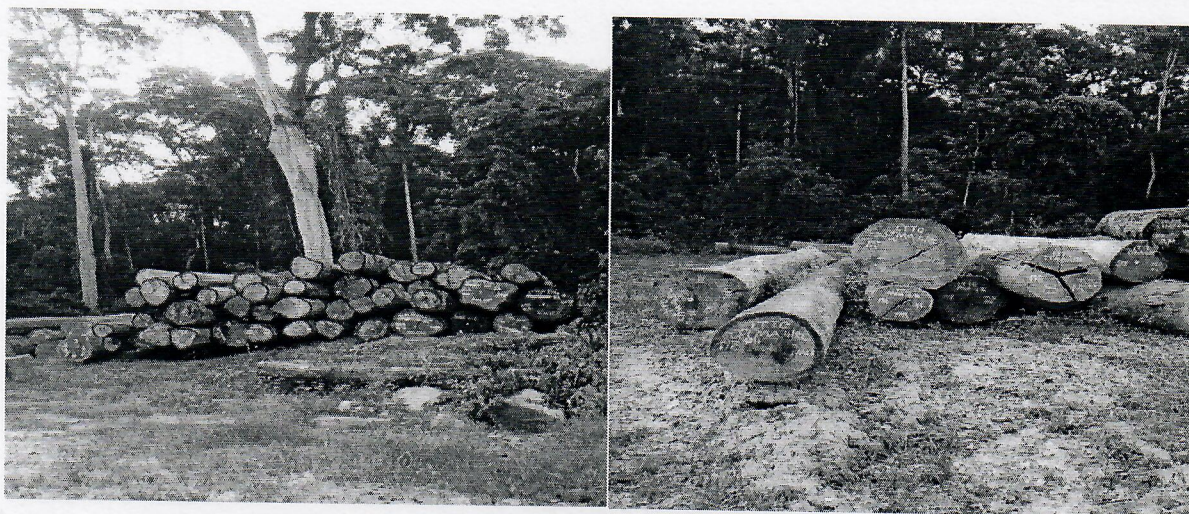
audited. As a result of the audit, the below constitute the findings:

- A. Generator House:** the company has a private portable generator which is the source of electricity for the nine housing unit camp. No generator house has yet been constructed as the company is still organizing.
- B. Fuel Storage:** at the moment the supply of petroleum and lubricants are procured from Monrovia in bulk and transported to the project site in barrels and stored in a building or store room while a fuel tank is been constructed.
- C. Garage:** the company has a plan in the nearest future to relocate the camp and other facilities; temporary maintenance and repair works are carried in the open.
- D. Waste Management:** Domestic wastes are disposed some 100m away from the camp. Other solid and non- biodegradable wastes are recycled by the community.

2.4.3 Landings:

The team visited two landings at the company's operational site. There was no active work at these landings, but about two hundred pieces of logs were seeing at these sites. The company planned to take these logs for saw milling in Buchanan.





2.4.4 Accident

No accident or death was recorded during the period under review.

2.4.5 Employment

The company has a total workforce of forty (40) persons including three females and one expatriate. Many of the work forces were drawn from the community.

2.4.6 Water source

Access to safe drinking water is a challenge as the company has not constructed wells due to its plan for relocation; the workers are fetching drinking water from the community hand pumps while domestic water are tied from local wells and creek.

2.4.7 Latrines

The company constructed bath houses with pity latrines which are properly maintained.

2.4.8 Health Post

The company has a functioning health post to attend all emergency that may occur but personnel that need medical attention are transported to River Cess County.

2.5 Company and Community Relations

The company has a Public Relations Officer who is responsible to provide or forward the company policy to the communities. The company has intervened in the community socio-economic development with the provision of jobs, hand pumps building of bridges and reconditioning of roads.

2.6 Grievance mechanism

There is a body set up from each of the affected communities of the three counties known as the CFDCE (Community Forest Development Counsel). The body is the liaison between the community and the company. All complains are channel through the body. This process is fully functional to date.

2.7 Monitoring Reports and Trends

There has been no monitoring carried out on LTTC operations. Hence, this report will serve as a baseline for future audit and monitoring activities.

2.8 Community Complaints

During the time of the Audit, no complaint was registered from the communities visited. This is an indication that there is a harmonious working relation between the company and the communities.

3.0 NON COMPLIANCES AND IMPROVEMENT OPPORTUNITIES

3.1 Noncompliance

During the time of the Audit, few non-compliance were noted as indicated in 3.0 (audit Findings).

3.2 Improvement Opportunities

The Audit has created improvement opportunities for the company environmental performances. The current environmental performance of the company is low but can be improved based on this Audit Report. See the table below

Table 1: Compliances, Noncompliance and Opportunities for improvement

Compliances	Noncompliance	Opportunities for improvement
Power Generation; The power generating plant which is the source of electricity It is working efficiently, produce low noise and well ventilated.	<ul style="list-style-type: none"> Power station not properly bounded, could lead to spillage. Fuel station not bounded. No emergency assembly point at the facility for workers visitors. 	Based on this Audit findings, there are high likelihoods and opportunities for improvement
Workshop, <ul style="list-style-type: none"> The staff on the site were seen wearing PPE and other safety gears 	<ul style="list-style-type: none"> There is one established workshop that is used for both small and heavy duties repair with no fire extinguishers on display. No emergency assembly point at the facility for workers visitors. 	There are opportunities for improvement for all of the non-compliances identified during the audit. This report is the first and will set the basis for continuous development and, training opportunities for the employees aimed at Improving their Environmental performance.
Fuel Storage <ul style="list-style-type: none"> Fuel storage tanks are placed above ground , The staff on the site 	<ul style="list-style-type: none"> Fuel storage area is not bounded. No procedures for fuel handling and spillage management on site\ No emergency assembly point at 	There are opportunities for improvement for all of the non-



was seen wearing PPE and other safety gears.	the facility for workers visitors.	compliances identified during the audit
Sewage & Water Supply: <ul style="list-style-type: none">• LTTC is in full compliance to the management plan of sewage and construct bath house and latrine	<ul style="list-style-type: none">• No hand pump built in the camp	There are opportunities for improvement for all of the non-compliances identified during the audit
Health and Safety <ul style="list-style-type: none">• Housing facilities are provided for employees		



4.0 Conclusion

Conclusively, there is a need for the Forest and Environment Research Institute (FERI) personnel to closely monitor the company's operations to guide them in full compliance of the EMP. These Monitoring Processes should be quarterly for internal review while the EPA carries out its statutory functions.



APPENDIX 1

Resume of Key Individuals Performing the Audit



CURRICULUM VITAE (CV)**Name of Staff: Dickson J. Chowolo****Profession:** BSc. General Forestry, Diplomas, Forest Management**Date of Birth:** November 16, 1953

Nationality: Liberian

Membership in Professional Societies:

Society of Liberian Foresters, Society for the Conservation for the Nature, Liberia, SCNL (Board Member)

Key Qualifications:

Bachelor of Science in Forestry, University of Liberia, Diplomas in General Forestry, Certificates in Environmental Impact Studies

Study Tour on: Forestry in Sierra Leone, September, 1978; Community Forestry in Ghana, 2008 & 2009. Seminars on: Trans-boundary Conservation in Sierra Leone, Ivory Coast and Guinea 2007, 2008 and 2009

POSITION HELD	AGENCY / ORGANIZATION	DATE
Executive Director	Forest Cry Liberia, INC. FCL	2004 – Present
Divisional Superintendent (Contract)	Firestone Plantation Rubber Company	2000 – 2001
Coordinator, Urban Forestry	Forestry Development Authority, FDA	1998 -2000
Supervisor, Urban Forestry	Forestry Development Authority, FDA	1988 – 1998
Supervising ranger, Plantation establishment and forest research	Forestry Development Authority, FDA	1979 – 1988

Education:**A .Liberia**

1. University of Liberia: Bachelor of Science in Forestry, 1998
2. Union Forestry Training Institute, UFTI, now FTI in Tubmanburg, Bomi County 1979.

B. Republic of Cyprus

1. Six Month- Post Diploma course in Forestry, 1988 – 1989

Languages:

Language/s	Speak	Write	Read
English	Excellent	Excellent	Excellent



Robert D. Boakai Snr.

NAME	Robert D. Boakai Snr.
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E-mail	rdboakai1@yahoo.com
Contact	+2316551127
NATIONALITY	Liberian
Age	43yrs
MARITAL STATUS	Married with five Children

EDUCATIONAL BACKGROUND

2010	BSc Degree, Civil Engineering Stella Marie Polytechnic Catholic Mission Monrovia, Liberia
1984	Certificate; Aircraft Mechanic Israel Aircraft Industry Ben-Gurion Airport, Israel
1980 - 1983	Associate Degree in Mechanical Engineering Technology in Applied Science, Harper, Maryland County

WORKING EXPERIENCE

2006 Feb- June	Operations and Maintenance Manager P A E- Team Darfur Darfur, Sudan
2001-2005	Safety Health & Environment/Operations Superintendent Mobil Oil Liberia, now Total Liberia Inc. Bushrod Island, Monrovia
1999-2001 Superintendent	Environmental Health & Safety/Terminal Mobil Oil Liberia Bushrod Island, Monrovia
1998-1999	Aviation Supervisor Mobil Oil Liberia Bushrod Island, Monrovia
1986-1995	Generator Mechanic Liberia Electricity Corporation Bushrod Island, Monrovia
1984-1985	Aircraft Mechanics Air Liberia



James Springs Payne's Airport Monrovia, Liberia

YEAR	<u>TRAINING/WORKSHOP DESCRIPTION ATTENDED</u>	<u>VENUE</u>
2009	June E I A Evaluator Licensure Protection	Environmental Agency
	Monrovia, Liberia	
2004	Tank Entry Training Dakar, Senegal	Exxon Mobil
2004	Smith Defensive Driving Training Monrovia, Liberia	Exxon Mobil
2004	Permit to work Monrovia, Liberia	Exxon Mobil
2004	First Aid Training Exxon Mobil	
	Monrovia, Liberia	
2004	Fire Drill Training Liberia	Exxon Mobil Monrovia,
2003	Work Control Training Accra, Ghana	Exxon Mobil
2002	CS Fleet Road show Abidjan Cote D'Ivoire	Exxon Mobil
2002	Product Control Manual Training (PCM) Accra, Ghana	Exxon Mobil
2002	Product Control Manual Training (PCM) La Cote de' Ivories	Exxon Mobil Abidjan,
2002	Fleet Row show OIMS- CS	Exxon Mobil Abidjan, La Cote D'Ivoire



2001	Defensive Driving (Smith Systems)	Exxon Mobil Monrovia, Liberia
2000	Operations Integrity Management Systems Training	Exxon Mobil Abidjan, La Cote de' Ivories
2000	Operations Integrity Management Systems Training	Exxon Mobil Abidjan, Cote de'Ivories
2000	Delegation of Authority Guide Training	Mobil Liberia Monrovia, Liberia
2000	Defensive Driving	Mobil Liberia Monrovia, Liberia
1999	Aviation operations workshop	Mobil Senegal Dakar, Senegal
1999	Environmental Health and Safety Training (EHS)	Mobil Accra, Ghana
1998	EHS-Basic Fuels/Lubes Operations	Mobil Egypt, Cairo, Egypt

