



THE OKOMU OIL PALM COMPANY PLC

SOLID WASTE DUMPSITE ENVIRONMENTAL AUDIT REPORT



FINAL REPORT

May 2025

Environmental Audit Report For Solid Waste Dumpsite at Okomu Oil Palm Company Plc in Ovia South West Local Government Area, Edo State, Nigeria

By

Okomu Oil Palm Company Plc

Submitted to:

Edo State Waste Management Board

Prepared by



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Acronyms and Abbreviations

OOPC Plc	Okomu Oil Palm Company Plc
AGO	Automotive Gas Oil
AAWUN	Agricultural and Allied Workers Union of Nigeria
BOD	Biochemical Oxygen Demand
°C	Degree Celcius
CBD	Convention on Biological Diversity
CFCs	Chlorofluorocarbons
CITES	Convention for prevention of International Trade in Endangered Species
CO	Carbon monoxide
CO ₂	Carbon-dioxide
COD	Chemical Oxygen Demand
CPO	Crude Palm Oil
CSR	Corporate Social Responsibility
DO	Dissolved Oxygen
DMR	Discharge Monitoring Report
dB(A)	Decibel ('A' Weighting)
EAR	Environmental Assessment Report
EAu	Environmental Audit
EAuR	Environmental Audit Report
EHS	Environmental, Health and Safety
FDS	Foremost Development Services Limited
FFB	Fresh Fruit Bunches
EDSWMB	Edo State Waste Management Board
EMS	Environmental Management System
FME _{Env}	Federal Ministry of Environment
GSM	Global System for Mobile Communication
Ha	Hectare
HIV/AIDS	Acquired Immune Deficiency Syndrome
H ₂ S	Hydrogen Sulphide
ICSC	International Chemical Society Card
IPO	Initial Public Offer
IFC	International Finance Corporation
IPM	Integrated Pest Management
ISO	International Standardization Organization
km	Kilometer
PK	Palm Kernel
PKO	Palm Kernel Oil
PKC	Palm Kernel Cake
Mg/l	Milligram per Liter
MT	Metric Tonne
mW	Mega Watt
NO _x	Oxides of Nitrogen
NMHC	Non-Metallic Hydrocarbon
NIFOR	Nigerian Institute for Oil Palm Research
PPE	Personal Protective Equipment

POME	Palm Oil Mill Effluent
PMS	Premium Motor Spirit
QMS	Quality Management System
RSPO	Roundtable on Sustainable Palm Oil
SDS	Safety Data Sheet
SO ₂	Sulphur dioxide
SPM	Suspended Particulate Matter
SPO	Special Palm Oil
SWD	Solid Waste Dumpsite
TSS	Total Suspended Solids
UV	Ultraviolet
UBTH	University of Benin Teaching Hospital
UNFCCC	United Nations Framework Convention on Climate Change
VOC	Volatile Organic Compound
WHO	World Health Organization

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7. National Guidelines for Environmental Audit Report (EAuR) in Nigeria

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Executive Summary

The environmental audit of solid waste dumpsite (SWD) was carried out to assess the environmental performance of The Okomu Oil Palm Company Plc from the point of view of conformance to local, national and international environmental legislation, regulatory standards and industry best practices. The audit covered mainly the solid waste dumpsite facility's operations of the company.

The Okomu Oil Palm Company Plc (OOPC Plc) is an agricultural and food-processing company located at Okomu-Udo, Ovia Southwest Local Government Area, Edo State, Nigeria. The company specializes in plantation development and production of special palm oil, palm kernel oil, palm kernel cake and crumb rubber. It started operation in 1976 as a Federal Government project and was privatized in 1990. The then Bendel State government granted the company a total concession of about 15,000 hectares within the Okomu forest reserve in 1978.

About 13,939 hectares, 3,514 hectares and 11,400 hectares have been developed into oil palm and rubber plantations at the main estate, Extension One estate and Extension Two estate, respectively.

The audit revealed that the company has made some progress in developing its environmental management system. More specifically, the company has an articulated Integrated Management System (IMS) Policy, wherein it expressed its commitment to conformance to legislation, waste reduction and continuous improvement in its environmental obligations. The policy has been signed by the Managing Director and has since been released.

AUDIT FINDINGS AND ITS EVALUATION

Groundwater Quality

The results of laboratory analysis obtained around the solid waste dumpsite show that the groundwater quality is good and free from pollution except for low pH thus making the water to be slightly acidic (4.26 – 5.93), which is below the FMEnv and WHO (2004) drinking water guideline of pH 6.5-8.5

Soil Fertility Indicators

The values of the important soil fertility parameters of the soils of the proposed project site are shown in Tables 3.6 below. The values of the parameters (macro and micronutrients) are discussed relative to their critical levels for crop production in south southern Nigeria.

Mechanical Analysis

In Table 3.6, the average sand, silt, and clay contents of the entire farm are 80.0 %, 15.0 % and 6.0 %. The soil textural class shows that the soil is predominantly Sandy loam or its derivatives. This implies that the soil will hold nutrients and will be

susceptible to high percolation and retention of water and applied nutrients. Fertilizers applied on such soil are less prone to leaching losses. They might however need regular infusions of organic matter to maintain its already excellent fertility and structure.

Soil pH

The soil pH of the soil can be classified as almost neutral with values ranging from 6.52 to 7.15. While the range of pH can be considered favourable to most crops, the incorporation of organic wastes and plant debris can also improve the soil pH. Oil palm trees thrive well under the pH range of 4.3 to 6.5, therefore liming will not be required.

Organic C and Total Nitrogen

The distribution of the soil organic matter as shown by the soil organic carbon in the land shows that the average soil organic C across the site ranged from 0.33 % to 1.01% with an average value of 0.64%. The organic C of the sampled soil is at medium level, and this level fairly maintained across board. The total nitrogen on the other hand had values ranging from 0.046% to 0.112% and were therefore considered low. The low N content of the soil is also a reflection of leaching of soluble nitrates beyond the plant root zone and the sampling zone (30 cm). Average nitrogen content of the soil is 0.128%. The result is indicative of the fact that supplemental nitrogen base fertilizer is required for optimum performance of oilpalm to be grown on the soil.

The concentration of organic carbon and by implication total nitrogen in soil is affected by several processes:

- Vegetation type (forest, grassland, tillage crops)
- Cultivation practices (depth and frequency of ploughing, removal or retention of crop residues, amount and frequency of applied fertilizers, control of soil acidity, forest/plantation stand age and clearance policy.
- Biological activity both larger faunae, e.g. worms, beetles, and at the micro-scale e.g. bacteria and fungi
- Application of wastes.
- Climate (temperature, rainfall)

A combination and interaction of the aforementioned, alongside the soil texture which is sandy can lead to low levels of TOC in the soils (Howard and Howard, 1990).

Available P

The Bray-1 available phosphorus is low in the soils. The value for the soil ranged from low, 1.34 mg/kg in SS4, to medium in TS4 (8.35mg/kg) and high in SS1(16.10mg/kg). Phosphorus is a major and essential nutrient needed by crops and its deficiency is indicative of a potential reduction in crop yield and performance. The values observed show that there is moderate need for fertilizer P, liming and P solubilizing microorganisms to increase available P in the soil.

There is also a well-developed program for integrated pest management (IPM). Nevertheless, the approach to pesticides use is well controlled and consistent on the plantation.

The company has obtained some statutory permits and certificates relating to different operations and equipment and quite a number of permits have been obtained and those not yet obtained are in the process. This clearly shows some levels of compliance of the company in this regard.

The quality of the environment around the solid waste dumpsite is high with good housekeeping and sanitation around this facility but needs improvement.

Waste handling operations on the estate are fraught with high hazards and pollution potential. The company has put in place a number of abatement measures including provision of PPE to protect workers against workplace hazards. In similar veins, a number of provisions have been made for waste reduction, waste recycling, and the prevention of pollution. These provisions include the use of fibres and kernel shells to fuel the boiler, mulching with EFB, oil retention trays and oil separation tank. In addition, routine environmental monitoring is undertaken to ensure that the treated effluents and the surface water and groundwater are of acceptable quality.

The waste management system is good. For solid waste, reasonable provisions have been made for collection, transportation, and disposal. In addition, the company has obtained from Edo State Ministry of Environment and Sustainability a permit to operate the solid waste dumpsite/landfill within the estate.

The level of signage relating to safety education and safety warnings is good at all workplaces. But there is still room for improvement.

The ambient air quality measurements undertaken during the audit of the solid waste dumpsite (SWD) facility revealed that the ambient air quality within and around the facility is good. Similarly, the results of laboratory analyses conducted on groundwater sample close to the facility (about 150 meters) revealed that the water quality is good except for low pH (slightly acidic). However, the appropriate recommendation has been made for the correction of the pH of the groundwater.

The principal organic contents of leachate are formed during the breakdown process and its organic strength is normally measured in terms of biochemical oxygen demand (BOD), chemical oxygen demand (COD), or total organic carbon (TOC). The characteristics of leachate produced are highly variable depending on the composition of the waste, precipitation rates, site hydrology, compaction, cover design, waste age, sampling procedures and interaction of leachate with the environment and landfill design and operation.

Leachate Quality: Leachate sample was collected during the audit and sample taken to the laboratory to check that the quality parameters are within the regulated limits.

The clinic is functional. The prevalent illnesses are clinical/medical illnesses which include malaria, gastrointestinal tract, respiration problems, muscular-skeletal problems, bacterial and fungi infections, eye problems, hypertension and other minor ailments. The preventive health education programme of the clinic has improved greatly.

The leachate sample conforms to the general FMEnv limits for wastewater discharge on land except for a slight high level of Chemical Oxygen Demand (COD) and chemical oxygen demand (COD)

It is recommended that the recommendations in chapter four of this report are implemented effectively.

CHAPTER ONE

1.0 Introduction

The Okomu Oil Palm Company Plc (OOPC Plc) is a leading agricultural establishment in Nigeria. The company specializes in the establishment and maintenance of oil palm and rubber plantations and has been in operation for over 30years. The company has incorporated very high environmental standards in its operations and is committed to continual improvement in its environmental management system.

The company commissioned Foremost Development Services Limited (independent environmental consultants) to carry out an Environmental Audit of its solid waste dumpsite at its Main estate. The objective is to determine and thereby provide regulatory bodies (such as Edo Ministry of Environment and Sustainability and Edo State Waste Management Board) with a clear indication of the overall environmental performance of the dumpsite as stipulated in the permit granted the company to operate the facility in May 2020.

The audit involved fieldwork including physical inspection of the dumpsite and environs including the nearby residential quarters known as IITA. It also involved examinations and review of records and reports relating to environmental management of the site. In addition, some physical environmental factors were sampled, and the samples collected were later analyzed in the laboratory.

This report is structured to present the description of the solid waste dumpsite (SWD) and provides information on waste sources, waste storage, waste collection, waste transportation and finally waste disposal, followed by analysis and the facility audit in the sequence of topics listed in the Federal Ministry of Environment audit guidelines.

1.1 Regulatory Bodies

1.1.1 Institutions and Regulatory Agencies

- Federal Ministry of Environment
- Edo State Ministry of Environment and Sustainability
- Edo State Waste Management Board
- Edo State Fire Service
- Ministry of Health, Edo State
- Department of Environment, Ovia Southwest Local Government Area of Edo State, Nigeria.

Federal Ministry of Environment

The Federal Ministry of Environment is the apex body with the broad mandate to regulate and protect the environment in Nigeria. The Ministry has enacted a number of environmental laws and regulations. In addition, Nigeria is party to some international agreements; protocols and conventions on Environment and is bound by their provisions and requirements.

Edo State Ministry of Environment and Sustainability

The Edo State Ministry of Environment and Sustainability is the arm of government responsible for regulating the environment in Edo State of Nigeria. Depending on certain peculiarities of the state, the Ministry has made and established its own laws and environmental standards, which are not inconsistent with Federal laws.

Edo State Waste Management Board

This Board is under the Governor's Office with a mandate for waste management and environmental sanitation.

Ovia Southwest Local Government Area

The Department of Environment, Ovia Southwest Local Government Area of Edo State, Nigeria is the tier of government that is responsible for regulating and monitoring the environment at the local level especially the aspects of health and sanitation inspection of business premises to ensure that they conform to set standards.

1.2 Objective

The objective of this audit is to evaluate and determine the environmental performance of OOPC solid waste dumpsite from the point of view of conformance to local, national and international laws and standards, and industry and international best practice (IIBP).

1.3 Period of Audit

The audit was carried out from 1 – 3 May 2025.

1.4 Company Information

1.4.1 History

The Okomu Oil Palm Company Plc (OOPC Plc) is an agricultural and food-processing company located at Okomu-Udo, Ovia Southwest Local Government Area, Edo State, Nigeria. The company specializes in plantation development and production of special palm oil, palm kernel oil and palm kernel cake. It started operation in 1976 as a Federal Government project and was privatized in 1990. The then Bendel State government granted the company a total concession of about 15,000 hectares within the Okomu forest reserve in 1978. About 15,580 hectares of the total concession at the main estate has been developed into oil palm and rubber plantations.

In addition to this, the company acquired the rights and concessions of about 6,116 hectares of land east of the Okomu National Park, inside the Okomu Forest Reserve. This piece of land is called Extension One. The land had been developed into oil palm and rubber plantation. Presently, about 4,775 hectares of Extension One has been developed into oil palm.

Okomu Oil Palm Company Plc has over 15,000 individual and institutional shareholders, both Nigerian (40%) and foreign (60%). The company at both Main and Extension One estates employs about 550 permanent workers including expatriates and Nigerians at management, intermediate, and junior cadres and about 600 fix rate and 3900 daily rated workers.

1.4.2 Location and Access

The company is located at Okomu-Udo, within the Okomu Forest Reserve in Ovia Southwest Local Government Area of Edo State, Nigeria. The company is accessible through a network of roads from Lagos and Benin City. It lies between longitude 5°07' and 5°25' E and latitude 6°18' and 6°26' N.

Within the estate, there is over 600km road network, ensuring that all the features and plantation field are easily accessible.



Figure 1: Map of Nigeria Indicating Edo State

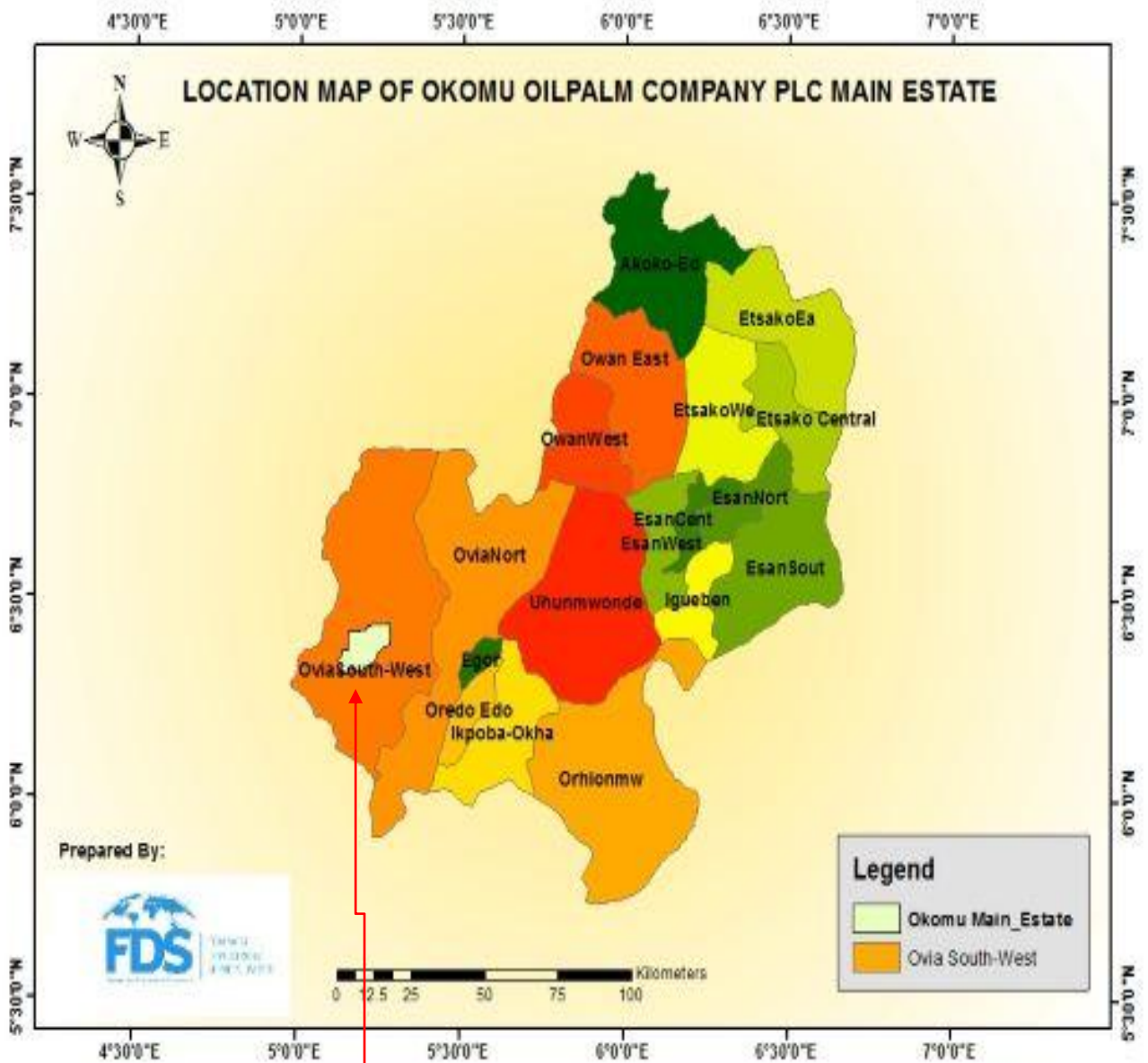


Figure 2: Map of Edo State Indicating Location of Okomu-OPC Plantation in Relation to Ovia Southwest LGA

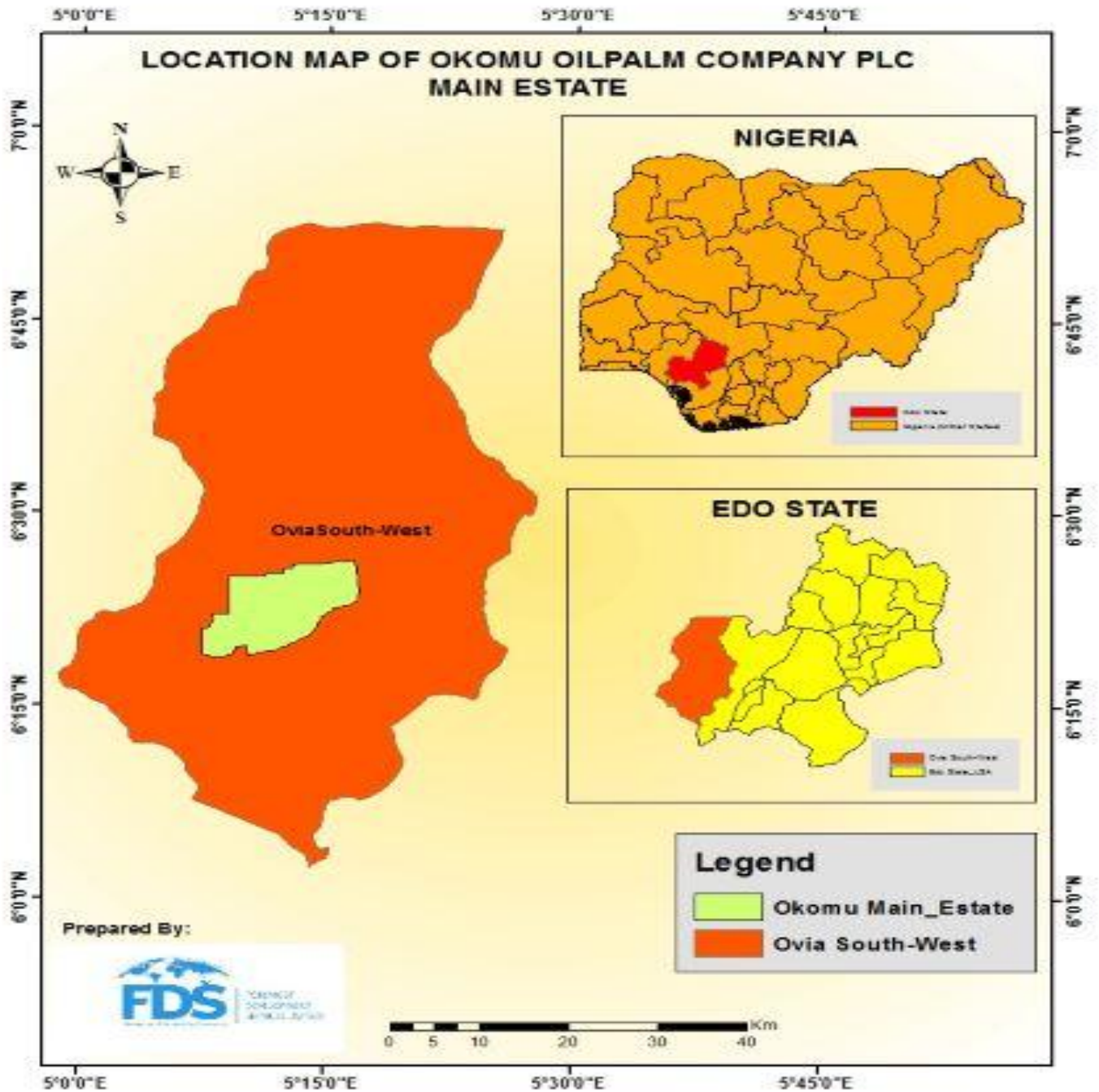


Figure 3: Location of Okomu-OPC in Relation to Ovia Southwest Local Government Area Edo State and Nigeria

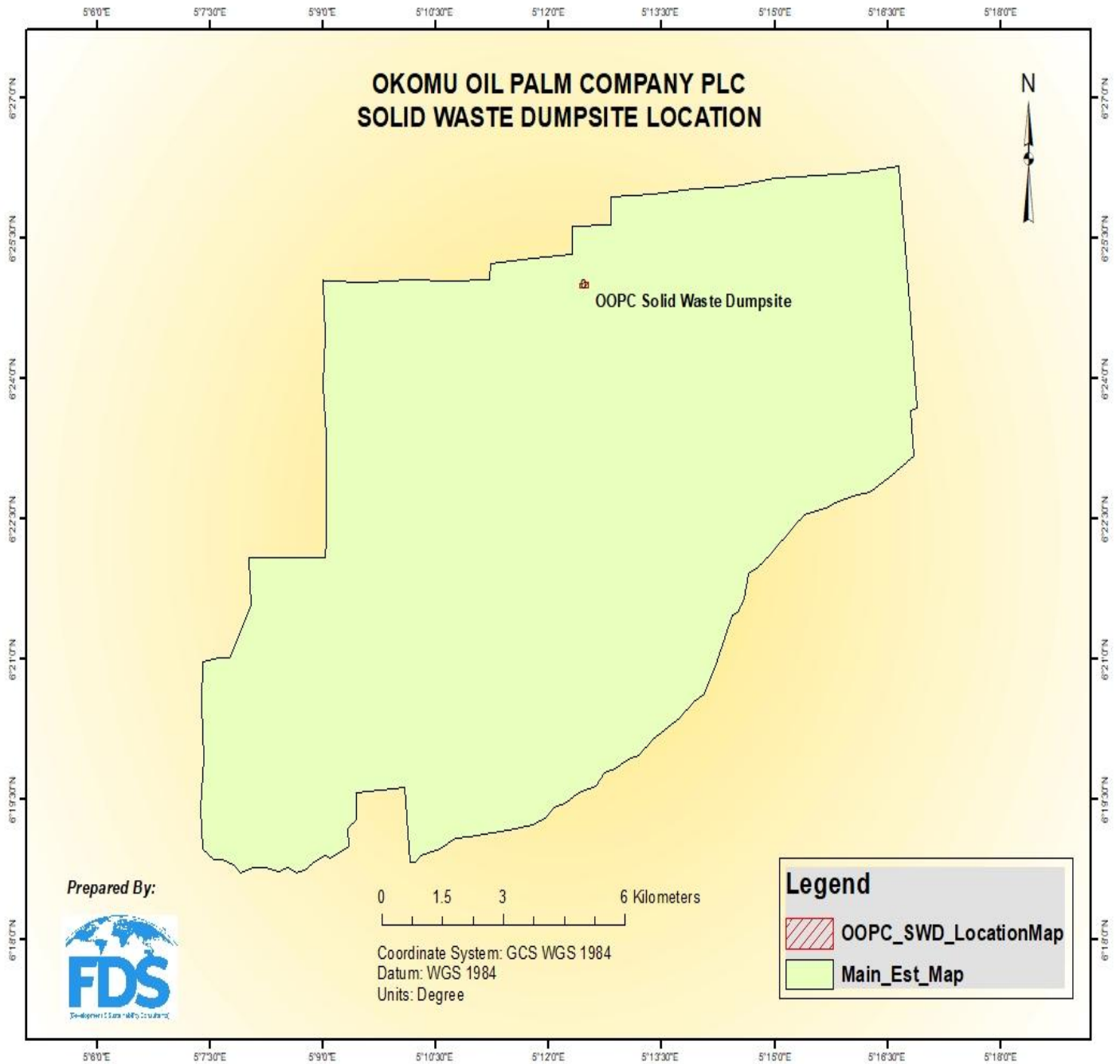


Figure 4: Location of Solid Waste Dumpsite in Relation to the Main Estate Plantation

1.4.3 Activities

The company undertakes plantation agriculture involving the growing of oil palm (*Elaeis guineensis*) and the processing of Fresh Fruit Bunches (FFB) into special palm oil. The company is also involved in the planting and tapping of rubber trees (*Hevea brasiliensis*), and the processing of cup lumps into crumb rubber. The major activities of the company include oil palm plantation, oil mill, rubber plantation and rubber factory operations.

1.4.4 Mission Statement of the Okomu Oil Palm Company Plc

"To be Nigeria's leading agribusiness, through the efficient and effective management of our various plantations by a highly motivated workforce, working in harmony with other stakeholders, and continuously returning favorable results to our shareholders".

CHAPTER TWO

Description of Facility and Processes

2.1 Brief Project/Process Description

The proposed solid waste dumpsite is situated at the northern part of the Main estate with approximate geographic coordinates N06°25.059' and E005°12.424' as shown in Figure 4 and presented in Figure 5.

The company believes strongly in environmentally sustainable production based on reduce / reuse / recycle principle and as a matter of fact, the company tries as much as possible to generate little waste arising from its operations which is properly managed from cradle to grave. The solid waste dumpsite has an approximate land size of about 15 hectares of land measuring 200m × 100m.

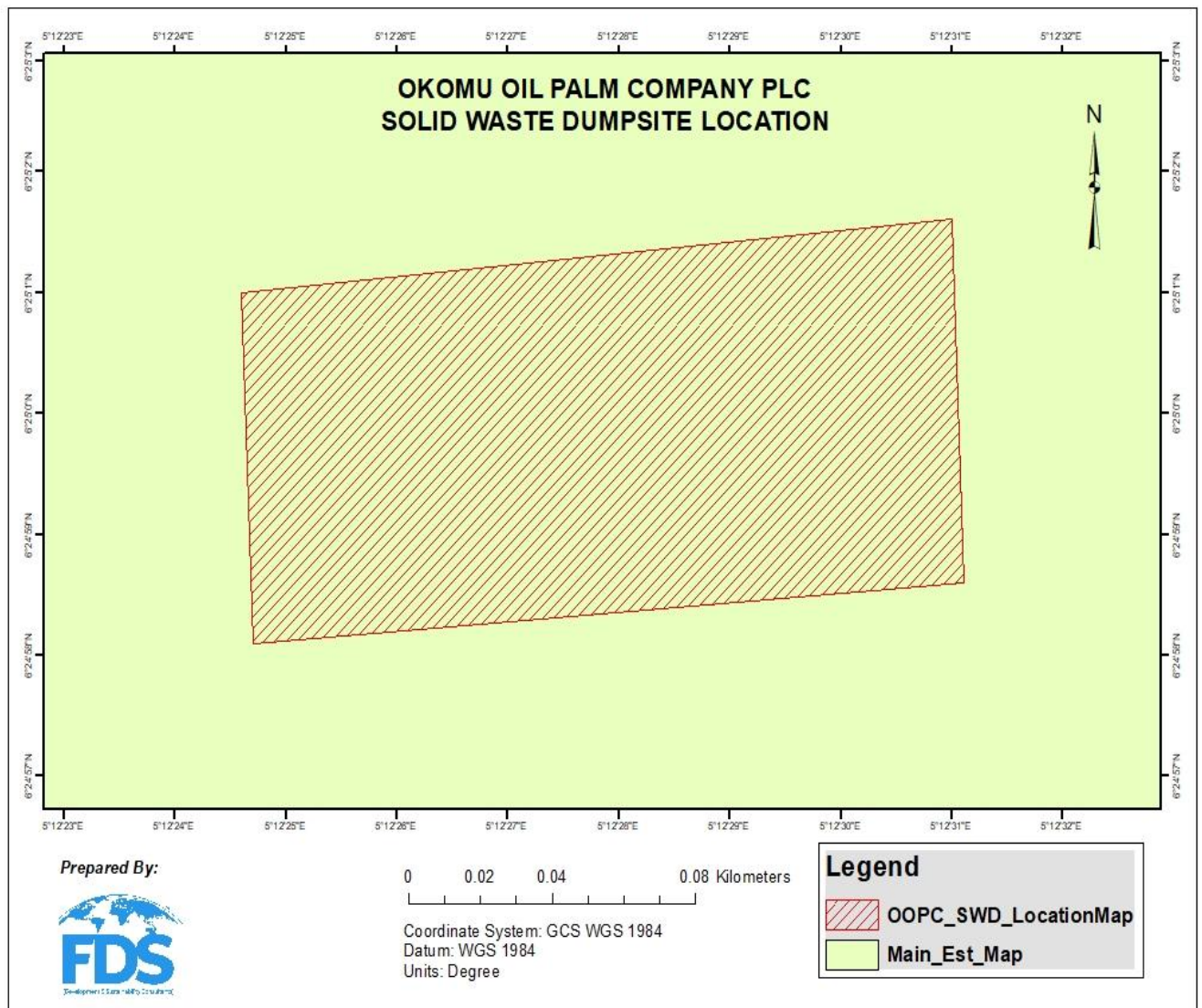


Figure 5: Map of the Facility (Solid Waste Dumpsite) within the Main Estate

The company has in place a waste disposal tractor used in transporting waste from various work places/residences of storage/collection points to the final disposal site (solid waste dumpsite).

The solid waste dumpsite consists of four (4) major compartments, one (1) excavated open pit for domestic waste and plastic compression plant namely:

- i) **Chemical Waste:** This includes primarily empty agrochemical and chemical containers (compartment roof covered with aluminium sheet against atmospheric conditions).
- ii) **Plastic Waste:** For broken and unused plastic products excluding chemical containers.
- iii) **Aluminium Waste:** For household pots and other aluminium-like products.
- iv) **Glass Waste:** For broken glasses and other glass-like products
- v) **Household Waste:** This is an excavated open pit where biodegradable household waste such as leftover foods are deposited.
- vi) **Plastic Compression Plant:** This is where all plastic containers except empty agrochemical containers are compressed and taken to a factory at Onitsha for recycling.



Plate 1: Solid Waste Dumpsite Showing Four (4) Compartments



Plate 2: Plastic Compression Plant



Plate 3: Excavated Pit for Biodegradable Household Waste



Plate 4: Scrap Yard for Storing Metals and other Non-degradable items

Waste generated on the estate is classified into hazardous waste, non-hazardous waste, and medical waste (special waste).

- **Hazardous Waste**

Agrochemicals and laboratory chemicals are the main hazardous substances used on the estate which are purchased according to their requirement for its processes. Where there are expired agro-chemicals and laboratory chemicals, expert advice about their disposal will be sought from the relevant state and federal regulatory authority. However, no expired agro-chemicals and laboratory chemicals have been recorded in recent times. Spent oil and waste oil filters are sold to a registered company in Port Harcourt.

- **Non-Hazardous Waste**

Particularly waste tyres and scrap metals – Sold to prospective buyers.

- **Medical Waste**

These are wastes produced by the Clinic (needle, syringes, and pathological waste). The clinic disposes of this waste through a special waste management system - burning inside the boiler).

2.2 Waste Generation

Solid waste generated on the estate is classified into domestic, industrial (hazardous and non-hazardous waste) and medical waste (special waste).

- **Domestic waste**

These are household wastes deposited at the excavated open dump.

- **Industrial waste**

This includes both hazardous and non-hazardous waste such as wastewater from the mill, empty agrochemical containers, spent oil and scrap metals. They are reused, recycled, sold, and sometimes returned to suppliers.

- **Medical waste (Special Waste)**

These are wastes produced by the Clinic (needles, syringes, and pathological waste). Medical waste is disposed of by burning inside the boiler.

2.3 Waste Sources

Solid and liquid wastes are generated from virtually every facility component, but the mill and rubber factory generate the largest volume of liquid waste, while the bulk of the gaseous emissions come from the powerhouse, mill/rubber factory and automobiles and most especially effluent lagoon emitting large amounts of Green House Gases (GHG)- Carbon-dioxide and methane (CO₂ and CH₄) into the atmosphere.

2.4 Waste Reduce/Re-Use/Re-cycling

Empty Fruit Bunches and boiler ash are recycled in the field (see Plate 9), while fibres and kernel shells are reused as fuel for the boilers. For the workshop steel and metal waste (scraps), a scrap yard is provided (see Plate 4) where they are kept being later reused and/or sold to potential buyers. The effluents from the milling facility and the rubber factory are being channeled to a lagoon and ponds respectively for biological (natural) treatment before being discharged into the plantation as irrigation water.

The capability and capacity of the company to handle, store, collect, transport, and dispose of its wastes in an environmentally responsible manner within the oil palm plantation is depicted in the photographs below.

2.4.1 Storage

At all the points of waste generation, waste bins are provided for the immediate storage of solid waste. Provision is also made for sorting and segregation of all solid waste at the point of generation (see Plate 6).



Plate 5: Colour Codes for Different Solid Waste Generated on the Estates

There are waste management plans where wealth shall be generated from waste as much as it is practically possible. Waste and Pollution Management Procedure (Reference GP 33) for the entire company operation is presented in Appendix IV.



Plate 6: Solid Waste Storage System

2.4.2 Collection and Transfer

Adequate Personal Protective Equipment for waste management staff always (see Plate 7).



Plate 7: Waste Collection in Progress

2.4.3 Means of Collection and Transportation

Waste collection and transfer include the provision of a tractor-mounted bucket to collect and transport the collected waste to a designated solid waste dumpsite in appropriate compartment (see Plate 8).

The solid waste collected is transported and disposed of at the solid waste dumpsite.



Plate 8: Tractor-Mounted Bucket

2.4.4 Converting Empty Fruit Bunches (EFB) into Manure

Empty Fruit Bunches and boiler ash are recycled in the field to produce manure for the palm (see Plate 9).



Plate 9: Empty Fruit Bunches (EFB)

2.4.5 Disposal

The solid waste dumpsite is the final disposal point for all solid waste. It is in a remote area in the northern part of the plantation and has enough capacity of 200m x 100m (approximately 5 hectares) to receive the waste generated on the estate. The solid waste dumpsite is primarily for domestic (organic) waste while the inorganic waste is either sold or collected by the suppliers.



Plate 10: Solid Waste Dumpsite

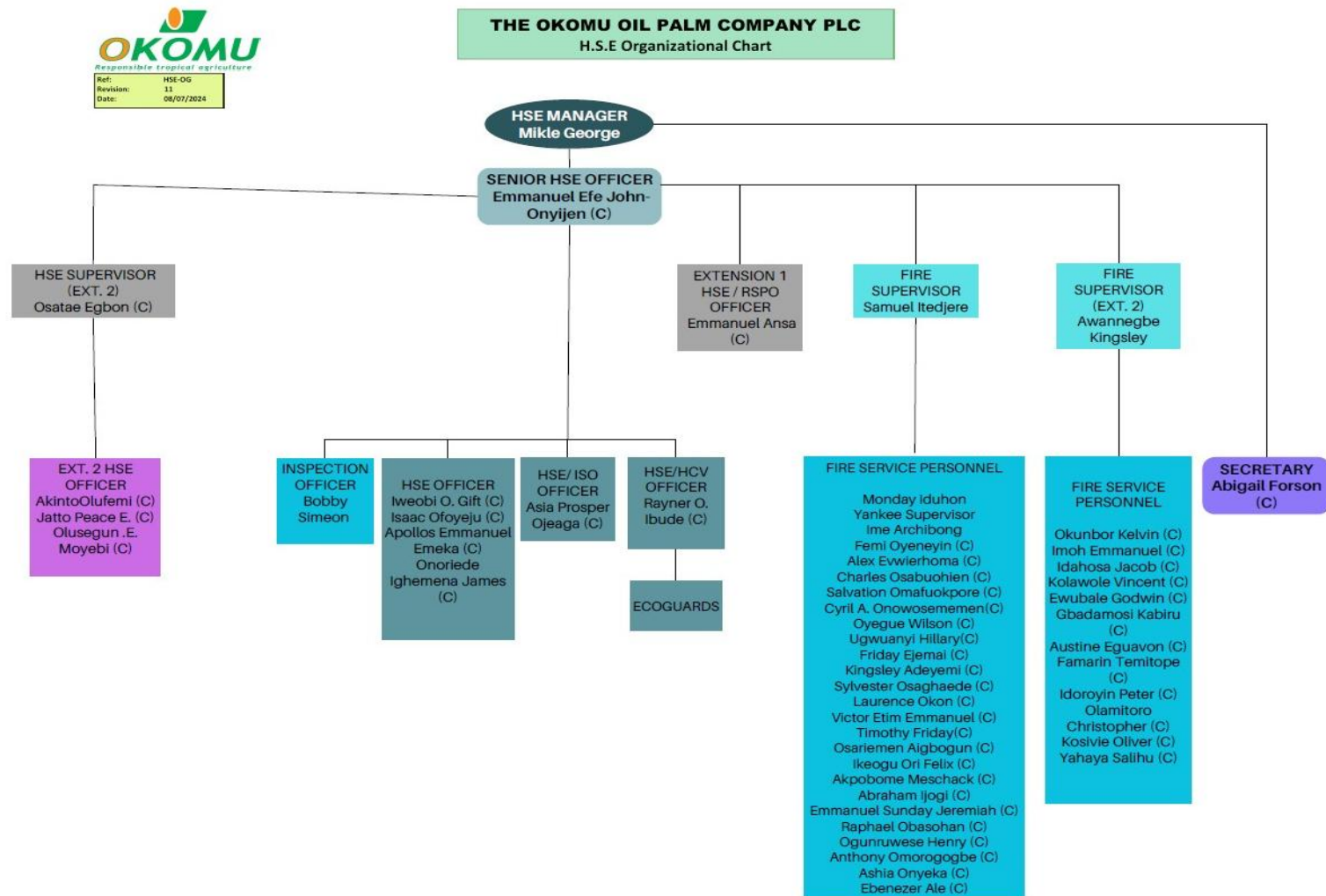


Figure 6: HSE Department Organizational Structure

CHAPTER THREE

Health, Safety and Environment Audit

The audit of the facility and the existing Environmental, Occupational Health, and Safety Management System was carried out using the combination of the National Guidelines for Environmental Audit Report (EAR) in Nigeria, Nigeria's Factories Act, and Industry/Management Best Practices.

3.1 Environmental Issues

The aspects of the environment considered include housekeeping, sanitation and leachate pollution issues.

3.1.1 Housekeeping and Sanitation

Housekeeping is generally fair at and around the solid waste dumpsite including the nearest residential quarters as depicted in the photograph below.



Plate 11: Good Housekeeping at Solid Waste Dumpsite Facility

The method of storage and evacuation seems to conform to the 5S's principle namely, sorting, straightening, sweeping, standardizing, and sustaining the discipline. This has yielded good results thus translating into proper and appropriate waste collection by potential waste recyclers.

3.1.2 Pollution

Environmental pollution can be defined as the presence in or introduction into the environment of a substance which has harmful or poisonous effects. In this regard, this section is broken down into ambient water quality, ambient air quality, wastewater quality, soil quality, hazardous materials management and noise level measurements.

3.1.2.1 Ambient Water Quality

The quality of all the groundwater samples is good and free from pollution. The pH ranged from 4.26 - 5.93 which is slightly acidic, all other physico-chemical and microbiological parameters fall within the permissible limits recommended by WHO and FMENV for wholesome water. The full results of laboratory analyses of water samples are presented in Appendix I.

Table 3.1: Laboratory Analysis Results of Groundwater Sample Near the Solid Waste Dumpsite

Parameter/Unit	Method APHA 2022	OKM _{IITA1}	OKM _{IITA2}	NIS554: 2015
Appearance		Clear with Particles		
Odour		Unobjectionable		Unobjectionable
pH @ 25.0°C	4500-HB	5.93	4.26	6.5 - 8.5
Temperature, °C	2550 -B	26.0	25.4	Ambient
Conductivity, µS/cm	2500-B	50	50	1000
Total Dissolved solids, mg/L	2120-C	25	25	500
Total Suspended Solids, mg/L	2130-B	2	2	-
Total Solids, mg/L	2540-D	29	27	-
Colour, Pt-Co	2540-C	41	<0.1	15
Turbidity, NTU	2540B	4	<0.01	5
Total Hardness, mg/L	2340-C	<1	<1	150
Total Alkalinity, mg/L	2320-B	4	4	-
Total acidity, mg/L	2310-B	25	20	-
Calcium, mg/L	3500-B	<0.01	<0.01	-
Magnesium, mg/L	3500-B	<0.01	<0.01	20
Chloride, mg/L	4500-B	8.0	6.4	250
Nitrate, mg/L	4500-NO ₃ ⁻ E	<0.01	<0.01	50
Nitrite, mg/L	4500-NO ₂ ⁻ B	<0.01	<0.01	0.2
Sulphate, mg/L	4500-SO ₄ ⁻ E	4.0	3.6	100
Phosphate, mg/L	4500-E	<0.01	<0.01	-
Iron (total), mg/L	3500-B	<0.01	<0.01	0.3
Fluoride, mg/L	4500-F ⁻ C	<0.1	<0.01	1.5
Lead, mg/L	3500 -Pb-B	<0.001	<0.001	0.01
Arsenic, mg/L	3500 -As-B	<0.001	<0.001	0.01
Manganese, mg/L	3500 -Mn-B	<0.001	<0.01	0.2
Copper, mg/L	3500 -Cu-B	<0.001	<0.01	1.0
Cadmium, mg/L	3500 -Cd-B	<0.001	<0.001	0.03
Hydrogen Sulphide, mg/L	4500-S ²⁻ H	<0.01	<0.01	0.05
Total coliform count, CFU/100 mL	9225-D	0	0	10
Faecal coliform, <i>E.coli</i>),	9222-D	0	0	0
<i>Salmonella/Shigella sp.</i> ,	9260-E	0	0	0
<i>Staphylococcus sp.</i> ,	AOAC 995.12	0	0	0
<i>Pseudomonas aureus</i> ,	9213-E	0	0	0
Total plate count,	9215-B	4	6	10 ²

Source: OOPC Plc - Solid Waste Dumpsite; EAu Fieldwork (May 2025)

3.1.2.2 Air Emission and Ambient Air Quality

The ambient emission quality was determined in-situ during the audit for critical locations as presented in the table below:

Sources	Location	Air Emission
Point Source	Solid Waste Dumpsite	NO _x , SO ₂ , CO, PM, VOCs, Dioxin
Fugitive	Solid Waste Dumpsite, Roads, Unpaved Ground	PM, NO _x , SO _x , CO
Mobile Sources	Tractors, Machinery	NO _x , SO ₂ , CO, PM, VOCs

3.1.2.3 Ambient Air Quality Monitoring

The ambient air quality was determined in-situ during the audit. The full results and methodology are presented in Appendix II and parts of the results are presented in Table 3.2 below:

Table 3.2: Laboratory Analysis Results of Air Quality on the Estate

Location	IITA	Solid Waste Dumpsite (Inside)	Solid Waste Dumpsite (Outside)	Standard S.I.35/ S.I.88/ S.I.93
Coordinate	N06°24'84.7" E005°12'848"	N06°24' 52.1" E005°12'54.4"	N06°24' 55.6" E005°12'14.2"	
Elevation (m)				
Noise dB(A)	49.9	51.1	50.5	85
Relative Humidity, %	57.4	87.2	81.3	<70
Temperature, °C	37.4	28.6	29.8	<25.5
Carbon monoxide, ppm	1.0	1.0	2.0	26.2
Carbon dioxide, ppm	406	810	413	Ambient
SPM, µg/m ³	140	135	140	250
Oxygen, %	20.9	20.9	20.9	21.0
Hydrocarbon as CH ₄ , ppm	<0.001	<0.001	<0.001	0.008
Sulphur dioxide, ppm	<0.01	<0.01	<0.01	0.2
Nitrogen dioxide, ppm	<0.01	<0.01	<0.01	0.2
Formaldehyde, µg/m ³	9	10	3	120
TVOC, µg/m ³	16	16	12	300
PM2.5, µg/m ³	60	88	92	40
PM10, µg/m ³	140	145	103	150

Source: OOPC Plc - Solid Waste Dumpsite; EAu Fieldwork (May 2025)

VOC = TVOC = Total Volatile Organic Compounds; SPM = Suspended Particulate Matter

The results of in-situ air quality determinations conducted around the solid waste dumpsite and on the entire estate show that the concentration of noxious gases was detected within the recommended range and therefore does not pose any threat to the environment. The particulate matter at all the monitored locations was found to be below the FMEnv Standard for 8-hour exposure.

3.1.2.4 Noise

Generally, the solid waste dumpsite environment is serene. A digital sound level meter was used to measure the noise levels at and around the solid waste dumpsite. The measurement taken showed that the noise level ranges from 60.3 dB(A) to 88.8 dB(A). However, the noise levels at the nearest housing to the solid waste dumpsite is 63.2 dB(A). The noise levels are within Federal Ministry of Environment/NESREA permissible limit of 90 dB(A) for 8 hours' exposure as presented in Table 3.3.

Table 3.3: Noise Level Measurements at the Solid Waste Dumpsite Area

LOCATION	Noise Level, (dBA)
IITA Quarters	51.1
Solid Waste Dumpsite Point 1	45.2
Solid Waste Dumpsite Point 2	43.5
Solid Waste Dumpsite Point 3	48.6
Solid Waste Dumpsite Point 4	49.4
Solid Waste Dumpsite Point 5	42.8
Solid Waste Dumpsite Point 6	44.3
Solid Waste Dumpsite Point 7	42.3
Solid Waste Dumpsite Point 8	44.8
Solid Waste Dumpsite Point 9	43.4
Solid Waste Dumpsite Point 10	47.7
NESREA/FMEnv Standard (8-hour)	85/90

Source: OOPC Plc - Solid Waste Dumpsite; EAu Fieldwork (May 2025)

3.1.2.5 Leachate

Leachate is defined as any liquid percolating through the deposited waste and emitted from or contained within a Dumpsite. As it percolates through the waste, it picks up suspended and soluble materials that originate from or are products of the degradation of the waste. The principal organic contents of leachate are formed during the breakdown process and its organic strength is normally measured in terms of biochemical oxygen demand (BOD), chemical oxygen demand (COD), or total organic carbon (TOC). The characteristics of leachate produced are highly variable depending on the composition of the waste, precipitation rates, site hydrology, compaction, cover design, waste age, sampling procedures and interaction of leachate with the environment and landfill design and operation.

Leachate Quality: Two (2 Nos.) Leachate samples were collected during the audit and samples taken to the laboratory to check that the quality parameters are within the regulated limits. The full results of the physical and chemical analyses are presented in Appendix III, while the results obtained for the critical quality parameters are summarized in Table 3.4 below.

Table 3.4: Results of Laboratory Analysis for Critical Leachate Parameters

S/N	Parameters	Methods	Results		FME _{env} Limit
1	pH	ASTM D1293-18	6.62	6.65	6.5-9.0
2	Temperature	EPA 79	28.4	28.4	<40
3	Electrical Conductivity	ASTM D1125-14	1000	1800	N/A
4	TDS	ASTM D868	1200	1400	2000
5	Turbidity	ASTM D7315-17	22.75	23.80	N/A
6	TSS	ASTM D1868	3.30	4.20	30
7	THC	ASTM D3921	<0.01	<0.01	10
8	DO	ASTM D888-92(96)	1.20	1.40	N/A
9	BOD	APHA-507	55.20	60.50	50
10	COD	ASTM D1252-95	85.60	91.20	80
11	Chloride	ASTM D512-89(96)	300.0	290.5	600
12	Alkalinity	ASTM D1067-92	110.70	120.65	N/A
13	NO ₃	ASTM D3889-90	8.20	9.40	20
14	NO ₂	ASTM D3867-09	6.40	7.60	N/A
15	SO ₄	APHA 427C	6.50	7.85	500
16	NH ₄ -N	ASTM D1426-93	9.10	9.55	N/A
17	PO ₄	ASTM D515-88	3.45	3.80	5
18	Na	ASTM D5863-2016	20.40	21.20	N/A
19	K	ASTM D2791-93	11.50	11.90	N/A
20	Ca	ASTM D511-14	30.60	31.20	200
21	Mg	ASTM D511-14	4.40	4.60	200
22	Total Hardness	ASTM D511-14	140.5	142.1	N/A
23	CN	EPA 1914	<0.01	<0.01	0.1
24	OG	ASTM D3921	<1.0	<1.0	10
25	Pb	ASTM D4834-03(14)	0.075	0.82	<1.0
26	Cd	ASTM D3557-95	<0.001	<0.001	<1.0
27	Mn	ASTM D858-95	0.001	0.001	5
28	Cr	ASTM D1687-92	0.001	0.001	<1.0
29	Cu	ASTM D858-17	0.024	0.026	<1.0
30	Fe	ASTM D1068-15	0.20	0.19	20
31	As	ASTM D2972-97	<0.001	<0.001	0.1
32	Hg	ASTM D7623-10(15)	<0.001	<0.001	0.05
33	Dioxin,	GC FID	<0.001	<0.001	N/A
34	Pesticide (PCBs),	GC FID	<0.001	<0.001	0.003

Source: OOPC Plc - Solid Waste Dumpsite; EAu Fieldwork (May 2025)

The leachate sample conforms to the general FME_{env} limits for wastewater discharge on land except for the slight high level of Chemical Oxygen Demand (COD) and chemical oxygen demand (COD) as presented in Table 3.3 above.

3.1.2.6 Soils in the Proposed Project Site

A rapid assessment of the soil in the study area was conducted in April 21, 2025 to crosscheck the existing findings.

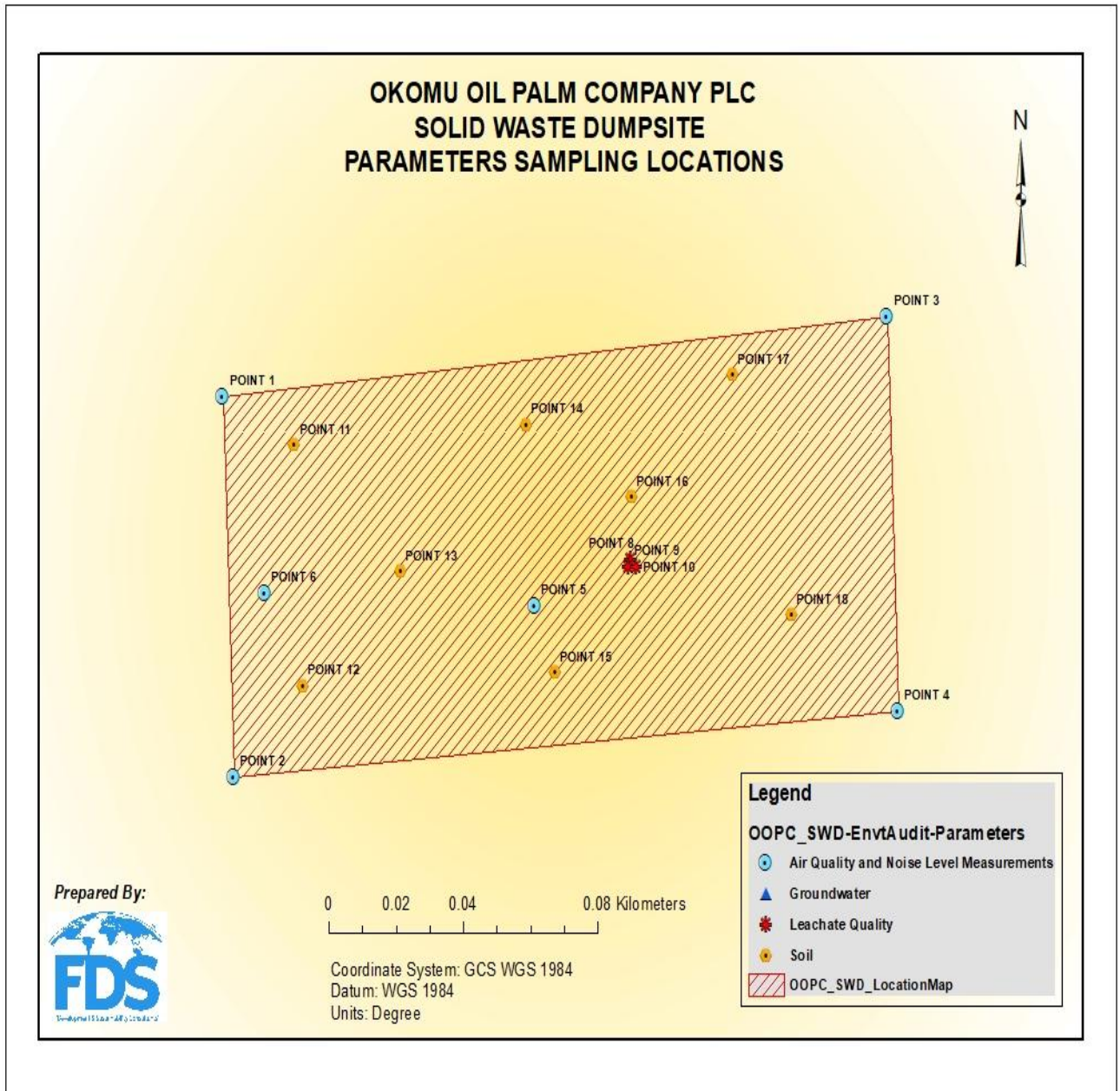


Figure 7: Soil Sampling Point at the Solid Waste Dumpsite

3.1.2.6.1 Soil Morphology

Soil is a natural resource that is important in agricultural production, and ecosystem sustainability. Its sustainable use is a major challenge now than ever due to the need for strategies that make it possible to maintain or increase agricultural productivity without sacrificing other benefits that society and other biodiversity obtains from it. Hence, information on the properties, problems, and productivity potentials of soils around this facility is necessary and must be obtained to ensure that its fertility has not been destroyed as a result of the operation of the dumpsite. In this regard, adequate information about the physical and nutritional properties of the soil environment must be generated and evaluated.

Methodology

Field morphological characterizations were conducted by the use of Dutch Soil Auger and Mussel Soil Colour Chart; the morphological characteristics of the soils were examined. Using a soil auger, representative samples of the top and sub soil were taken. Overall, eight (8 Nos.) soil samples at depths 0-15cm and 15-30cm were taken for identification and characterization of the soil types. All the necessary environmental information relating to the site characteristics and the soil morphology were recorded on a proforma sheet. These include environment and coordinate value of each sampled station.

Samples with similar characteristics were bulked and then transferred into polyethylene bags for processing and analyses of relevant physicochemical and microbiological properties. A total sample of four (4 Nos.) each for both topsoil and subsoil were achieved. The samples were subjected to relevant physicochemical and microbiological properties as presented in Table 3.5 below.

Table 3.5: Soil Sampling Points and Onsite Description

Stations	Coordinates		Description and Land Use	
			Topsoil (0-15cm)	Sub-Soil (15-30cm)
Station 1	5.814669	6.857413	7YR 3/2 dark brown wet slightly sticky Sandy clay	Sandy clay with many fine iron concretions. 5RY 5/6 mottles
Station 2	5.83205	6.87248	7.5YR 3/2 dark brown, gritty soil. Sandy loam	Wet Non sticky sandy soil 5YR 4/4 reddish brown sandy soil.
Station 3	5.819623	6.930715	Many fine roots, dark reddish brown. 2.5YR ¾. It has fine sand particles	5R 5/6 red with many fine roots, wet non sticky. Fine sand
Station 4	5.841912	6.938097	Many medium iron concretions. 2.5 YR 4/3 soil particles.	5R 3/3 dark reddish brown, wet non sticky with many medium roots and medium iron concretions.
Station 5	5.81787	6.95223	Few /medium iron concretions. Sandy loam	Non sticky sandy soil 5YR 4/4 reddish brown sandy soil.
Station 6	5.81257	6.94535	7.5YR 3/2 dark brown moist with few fine to medium roots. many fine sand particles.	7.5YR 3/2 dark brown moist with few fine to medium roots. Many fine sand particles.
Station 7	5.826586	6.896975	Fine sand particles with few medium iron concretions and many fine roots. 5YR 4/3 reddish brown, moist non sticky soil.	Many medium to coarse iron concretions. 5RY ¾ dusky red soil.
Station 8	5.86245	6.90274	Fine sand particles with many fine roots and few mottles. 2.5YR 4/4 reddish brown.	2.5 YR 4/4 reddish brown with many fine to few medium roots. Moist soil non sticky.
Control 1	5.75985 ⁰	6.81615 ⁰	Sandy soil 5YR 4/1 dark grey sandy soil. Fine sand particles sandy loam with many fine roots.	5YR 4/4 reddish brown soil. Wet non sticky with many fine to medium roots.
Control 2	5.75720 ⁰	6.813521 ⁰	7.5 YR 4/2 brown fine sand particles. Sandy loam with many fine roots.	5YR 3/3 reddish brown, wet non sticky with many medium roots and medium iron concretions

Source: OOPC Plc - Solid Waste Dumpsite; EAu Fieldwork (May 2025)

The samples were taken to the laboratory and analyzed for their physicochemical and microbiological properties using standard method following appropriate quality assurance/control measures.

The procedures used for the various analyses of the samples are as follows:

The 48 hour air-dried soil samples were sieved (2mm diameter mesh). The particle size analysis was done by hydrometer method using sodium hexametaphosphate as the dispersing agent.

Organic carbon was analyzed using the Walkley–Black method (Nelson and Sommers, 1996).

Total N in the soil was determined by Kjeldahl digestion and the N determined colorimetrically (Bremner, 1996).

Exchangeable bases in the samples were extracted with IM NH_4OAC at pH 7.0; Ca and Mg in the extract were read by Atomic Absorption Spectrophotometer (AAS) while Na and K were analyzed by using flame photometry.

Exchangeable acidity (Al and H) was determined by extracting with IN KCl and determined by NaOH titration (Sims, 1996).

Available phosphorus was determined by Bray-1 extraction and determined colorimetrically by the molybdenum blue procedure (Bray and Kurtz, 1945).

The soil exchangeable copper (Cu) iron (Fe), manganese (Mn) and zinc (Zn) were extracted with 0.1N HCl. The extracts were then analyzed for the respective elements using the Atomic Absorption Spectrophotometer.

3.1.2.6.2 Results and Discussion

Soil Fertility Indicators

The values of the important soil fertility parameters of the soils of the proposed project site are shown in Tables 3.6 below. The values of the parameters (macro and micronutrients) are discussed relative to their critical levels for crop production in south southern Nigeria.

Mechanical Analysis

In Table 4.25, the average sand, silt, and clay contents of the entire farm are 77.30 %, 14.10 % and 8.6 %. The soil textural class shows that the soil is predominantly Sandy loam or its derivatives. This implies that the soil will hold nutrients and will be susceptible to high percolation and retention of water and applied nutrients. Fertilizers applied on such soil are less prone to leaching losses. They might however need regular infusions of organic matter to maintain its already excellent fertility and structure.

Soil pH

The soil pH of the soil can be classified as almost neutral with values ranging from 6.52 to 7.15. While the range of pH can be considered favourable to most crops, the incorporation of organic wastes and plant debris can also improve the soil pH. oil palm trees thrive well under the pH range of 4.3 to 6.5, therefore liming will not be required.

Organic C and Total Nitrogen

The distribution of the soil organic matter as shown by the soil organic carbon in the land shows that the average soil organic C across the site ranged from 0.33 % to 1.01% with an average value of 0.64%. The organic C of the sampled soil is at medium level, and this level fairly maintained across board. The total nitrogen on the other hand had values ranging from 0.046% to 0.112% and were therefore considered low. The low N content of the soil is also a reflection of leaching of soluble nitrates beyond the plant root zone and the sampling zone (30 cm). Average nitrogen content of the soil is 0.128%. The result is indicative of the fact that supplemental nitrogen base fertilizer is required for optimum performance of oil palm to be grown on the soil.

The concentration of organic carbon and by implication total nitrogen in soil is affected by several processes:

- Vegetation type (forest, grassland, tillage crops)
- Cultivation practices (depth and frequency of ploughing, removal or retention of crop residues, amount and frequency of applied fertilizers, control of soil acidity, forest/plantation stand age and clearance policy.
- Biological activity both larger faunae, e.g. worms, beetles, and at the micro-scale e.g. bacteria and fungi
- Application of wastes.
- Climate (temperature, rainfall)

A combination and interaction of the aforementioned, alongside the soil texture which is sandy can lead to low levels of TOC in the soils (Howard and Howard, 1990).

Available P

The Bray-1 available phosphorus is low in the soils. The value for the soil ranged from low, 1.34 mg/kg in SS4, to medium in TS4 (8.35mg/kg) and high in SS1(16.10mg/kg). Phosphorus is a major and essential nutrient needed by crops and its deficiency is indicative of a potential reduction in crop yield and performance. The values observed show that there is moderate need for fertilizer P, liming and P solubilizing microorganisms to increase available P in the soil.

Table 3.6: Physicochemical Properties of Soil of the Proposed Site (Particle size, pH, organic C, N and P)

Sample ID	Sand %	Silt %	Clay %	Textural Class	pH (1:1) Water	Tot. Org C %	Tot. N (%)	Av. P (mg/kg)
TS1	80.00	15.00	6.00	Loamy Sand	6.66	0.50	0.068	2.55
SS1	69.00	12.00	19.00	Sandy Clay	6.81	0.52	0.063	16.10
Avg	75.00	13.00	12.00	Loamy Sand	6.72	0.49	0.063	9.26
TS2	71.00	14.00	15.00	Sandy Clay loam	6.82	0.47	0.068	2.73
SS2	79.00	14.00	7.00	Sandy loam	7.15	0.76	0.049	4.17
Avg	75.00	14.00	11.00	Sandy loam	6.99	0.62	0.056	3.45
TS3	79.00	18.00	3.00	Loamy sand	6.74	1.01	0.091	3.42
SS3	73.00	14.00	13.00	Sandy loam	6.55	0.65	0.081	2.68
Avg	76.00	16.00	8.00	Loamy sand	6.65	0.83	0.086	3.05
TS4	77.00	18.00	5.00	Loamy sand	6.92	0.95	0.112	8.35
SS4	83.00	8.00	9.00	Sandy loam	6.87	0.33	0.046	1.34
Avg	80.00	13.00	7.00	Sandy loam	6.90	0.64	0.079	4.85
TSC	79.00	15.00	6.00	Loamy sand	6.52	0.50	0.079	3.96
SSC	82.00	14.00	4.00	Loamy sand	6.56	0.78	0.055	3.85
Avg	80.50	14.50	5.00	Loamy sand	6.54	0.64	0.067	3.91

Source: OOPC Plc - Solid Waste Dumpsite; EAU Fieldwork (May 2025)

Table 3.7: Physicochemical Properties of Soil (Exchangeable Bases)

Sample ID	Ca (cmol/kg)	Mg (cmol/kg)	Na (cmol/kg)	K (cmol/kg)	Al+H (cmol/kg)	ECEC (cmol/kg)	Base Sat
TS1	1.68	0.28	0.31	0.17	0.09	2.53	96.44
SS1	4.48	0.93	0.21	0.19	0.08	5.89	98.64
Avg	3.08	0.63	0.26	0.18	0.085	4.21	97.54
TS2	10.31	0.54	0.40	0.36	0.06	11.67	99.49
SS2	4.21	0.99	0.29	0.23	0.05	5.77	99.13
Avg	7.26	0.77	0.35	0.30	0.006	8.72	99.31
TS3	2.72	0.67	0.33	0.15	0.06	3.93	98.47
SS3	2.88	0.47	0.27	0.26	0.11	3.99	97.24
Avg	2.80	0.57	0.30	0.21	0.09	3.96	97.86
TS4	1.98	0.55	0.29	0.22	0.05	3.09	98.38
SS4	2.13	0.42	0.31	0.20	0.07	3.13	97.76
Avg	2.06	0.49	0.30	0.21	0.06	3.11	98.07
TSC	2.79	0.44	0.25	0.13	0.07	3.68	98.10
SSC	6.94	0.92	0.38	0.46	0.10	8.80	98.86
Avg	4.87	0.68	0.32	0.30	0.09	6.24	98.48

Source: OOPC Plc - Solid Waste Dumpsite; EAU Fieldwork (May 2025)

Exchangeable bases (Ca Mg, K, and Na)

The exchangeable calcium, magnesium, sodium, and potassium content of the soils shown in Table 3.6 above. indicates that the calcium, magnesium, potassium and sodium levels are rated medium, low, medium and low with average values of 4.01, 0.62, 0.23, 0.30 cmol kg⁻¹ respectively. The data suggests that soils cations are a reflection of the organic matter content. The effective cation exchange capacity (sum of the exchange cations) of the soil is low.

Exchangeable acidity (Al + H)

The saturation of the soil exchange complex with aluminum and hydrogen ions is less than 60% generally. Therefore, the Al content of the soils will not be limiting to crop production.

Table 3.8: Micro-nutrient properties of the soil

Sample ID	Mn (mg/kg)	Fe (mg/kg)	Cu (Mg/kg)	Zn (mg/kg)
TS1	26.70	2.10	0.65	1.40
SS1	13.45	24.80	0.18	2.13
TS2	14.15	2.10	0.46	0.69
SS2	8.60	0.75	0.66	1.83
TS3	41.05	1.50	0.34	2.73
SS3	9.15	4.10	4.25	0.57
TS4	32.40	2.60	0.43	3.97
SS4	15.15	1.05	0.64	0.81
TSC	7.80	2.50	0.85	0.89
SSC	12.80	2.80	0.39	1.88
Avg	18.13	4.43	0.88	1.69

Source: OOPC Plc - Solid Waste Dumpsite; EAu Fieldwork (May 2025)

Micronutrient (Mn, Zn, Cu, and Fe)

The micronutrient concentrations in the soil were all within acceptable and permissible levels in agricultural soils. The mean concentration of the metals is as follows, Iron (18.13 mg/kg); zinc (4.43 mg/kg); Copper (0.88mg/kg); Manganese (1.69mg/kg).

The moderate amount of soil micronutrients might have been because of favourable soil pedogenic processes. Generally, the order of micronutrient abundance is Mn > Fe > Zn > Cu.

Table 3.9: Summary of Soil Physicochemical Properties

Parameter	Mean Values	Rating
pH	6.76	Neutral
Total Organic Carbon (%)	0.64	Low
Total Nitrogen (%)	0.071	Low
Available Phosphorus (mg/kg)	4.90	Low
Calcium (cmol/kg)	4.01	Medium
Magnesium, (cmol/kg)	0.62	Low
Potassium, (cmol/kg)	0.23	Medium
Sodium, (cmol/kg)	0.30	Low
ECEC, (cmol/kg)	5.25	Low
Iron, (mg/kg)	4.43	Low - Medium
Zinc, (mg/kg)	1.69	Medium
Copper, (mg/kg)	0.88	Medium
Manganese, (mg/kg)	18.13	High
Sand (%)	77.3	Sandy Loam
Silt, (%)	14.1	
Clay, (%)	8.6	

Source: OOPC Plc - Solid Waste Dumpsite; EAU Fieldwork (May 2025)

3.1.2.7 Waste Management

The handling and storage of wastes, particularly empty agrochemical containers, empty laboratory chemical containers, domestic waste, medical waste, and metal scraps are carefully done. Safety Data Sheets (SDSs) are compiled and displayed for hazardous chemicals in use to enable chemical handlers to acquaint with the general handling of hazardous chemical waste in use.

Types of Wastes Stored

Wastes including empty hazardous substances containers and materials that are used on the estate are stored. These include empty agrochemical containers, empty chemicals containers, electrical waste (e-waste) such as computer hardware, cartridges, and electrical bulbs.

Disposal of Hazardous Waste

Plastic and metal pesticides containers are properly rinsed before they are taken to the dumpsite for transitional storage. The company has not experienced any stock of outdated pesticides.



**Plate 12: Empty Agrochemical Containers' Storage Compartment
Covered with Aluminium Roofing Sheet to Prevent run-off
during Rainfall**

Waste Handling

Necessary precautions are taken on the handling of waste. All workers involved in the handling of waste (waste managers) are kitted with appropriate personal protective equipment. The PPE provided includes protective clothing, hand gloves, eye goggles, caps, respirators, and boots as depicted in Plate 7.

Waste Management – Training

Workers, particularly waste managers, have recently received formal training on the hazards, precautions and procedures for the safe storage, handling and use of all potentially harmful materials relevant to each employee's task and work area.

3.1.2.8 Pollution Prevention and Control

Release of pollutants

Every workplace has the potential to release pollutants into the environment, however, provisions have been made to reduce or eliminate pollution.

Pollution Abatement Provisions

A quite number of pollution abatement measures have been made. These include:

- Zero level burning at replanting and new planting in the plantation
- Maintenance of constant soil cover to prevent soil erosion
- Safe stack height
- Provision of effluent treatment facility (Tricanter)
- Provision of earmuffs for exposure to high noise levels
- Provision of mufflers in the silencers.
- Provision of oil separation tanks
- Provision of oil retention trays
- Provision of colour coded waste bins

Pollution Complaints

The neighboring communities have not made any pollution complaints against the company in recent times.

Recommendations:

- *Waste Handlers (Waste Managers) should be regularly monitored to ensure that they always wear appropriate PPE when at work.*
- *An annual medical check-up for Waste Handlers (Waste Managers) should be conducted.*

3.2 Occupational Health and Safety Issues

This section is broken down into the following different areas: Clinic, Occupational Illnesses, Occupational Illnesses trend and Incident and Accident/Fatality. So also, transport, workers' safety (PPE), signage and compliance monitoring were specifically investigated during the audit.

3.2.1 Clinic

The clinic is registered with the State Ministry of Health. The registration number is ED/M/C/292/2009. It is located at the main estate behind the administration block. The clinic has a resident doctor and qualified nurses on full time.

The clinic record revealed that workers have been treated for different illnesses including malaria, gastrointestinal tract (GIT), Infection, respiratory tract infection (RTI), pelvic inflammatory diseases (PID) muscular-skeletal pain, abscesses/infection, conjunctivitis, hypertension and other minor ailments. The details of the Clinic's report are provided in Appendix IV.

3.2.1.1 Occupational Health Surveillance

Analysis of Occupational Injuries: There is a clinic and standby ambulance available for emergency cases in Extension One Estate. The clinic provides record of different medical cases and work-related injuries treated at different periods. Cases of Malaria ranked highest all year round followed by non-industrial Musculo skeletal problems and Respiratory cases. The data received revealed that 3148 malaria cases were recorded all year with an average of 262 cases attended to monthly. The least prevalent ailments are treated include Viral infections, Diabetes, Road Transport Accident, and Hypertensive diseases. The chart below and appendix iii presents an overview of the medical situation at Extension One Estate.



Plate 13: Standby Ambulance at the Clinic

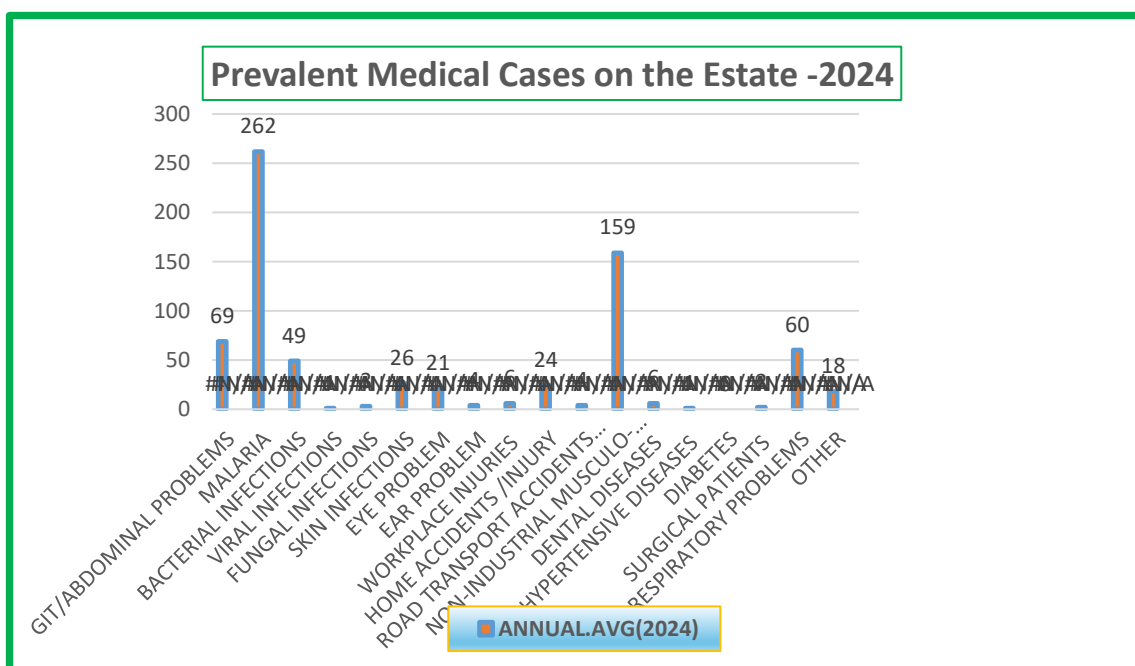


Figure 8: Occupational Health Surveillance Chart: January -December 2024

3.2.2 Workers' Safety

3.2.2.1 Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE's) are provided to all workers including company's waste managers. Some of the PPE provided to workers include:

Part of the Body	Hazard	PPE
Head	Falling objects	Hard hats
Trunk and Body	Solvents moisture	Aprons (Overalls)
Foot	Slipping, sharp items on the floor, falling objects	Safety shoes or Boots
Eyes	Dust and flying particles	Eye Goggles
Hand	Sharp edges and corrosive chemicals	Hand Gloves
Ear	Excessive noise	Earmuffs, Ear Plugs
Nose	Dust and Fumes	Nose Masks

3.2.2.2 Fire Precautions

Fire Detection and Fire Fighting

Provisions are made for firefighting equipment including fire truck, fire extinguishers, sand buckets, and stand-by water tankers in case of fire outbreak.



Plate 14: Fire Fighting Truck at Main Estate



Plate 15: Water bowser attached to a Hilux

3.2.3 Communication and Training

3.2.3.1 OSH Training

Formal training on occupational safety and health is an on-going programme conducted by the company on an annual basis. Several training programmes have been carried out including waste management procedure starting from storage to final disposal.

3.2.3.2 Visitor Orientation

Visitors are given orientation on OSH conduct with appropriate manual and control programme also put in place.

3.2.3.3 Basic OHS Training

Some basic OHS training and specialty courses are being run for management, HSE Committee, supervisors, and workers.

3.2.4 Conformance to Legislation, Regulations and Standards

3.2.4.1 Compliance with National Legislation

HSE Department: The Company has established its HSE department. The HSE committee is also assisting in HSE management on the estate.

Submission of Discharge Monitoring Report (DMR): The discharge monitoring reports are prepared quarterly and submitted to the regulatory bodies including Edo State Ministry of Environment and Sustainability.

Submission of EAuR: The Company is up to date in the audit of its facility and processes. All previous Environmental Audit Reports were submitted to the Federal and Edo State Regulatory Agencies.

Preparation and Submission of EIA Report: An Environmental Assessment Report (EAR) for the Solid Waste Dumpsite was submitted to Edo State Ministry of Environment and Sustainability. The report was judged satisfactory after review by the Ministry and approval for establishing the dumpsite in-house was granted in 2016.

The status of submissions is presented in Table 3.10 below.

Table 3.10: Status of Submissions to Regulatory Bodies

Requirement	Status	
	Submitted	Not Submitted
Environmental Audit Report	✓	
Environmental Assessment Report	✓	
Quarterly DMR	✓	
List of Chemicals	Available	X
MSDS	Available	X
Emergency Response Plans	✓	
Contingency Action Plans	Available	X
Record of Fire Drills	Available	X
Accidents, Incidents and Near Misses	Available	X
Accident Investigation Reports	Available	X
Integrated Management System (IMS) Policy	Available	X

Integrated Management System (IMS) Policy: The Company has a well written, articulated IMS policy where the management expresses and demonstrates commitment to the environment as well as the health and safety of the employees. The Policy is duly signed by the Managing Director.

ISO Certification: The company is certified as ISO 14001:2015, ISO 9001:2008 and ISO 45001 for Environmental Management System (EMS), Quality Management System (QMS) and Occupational Health and Safety Management System (OHSMS) respectively (see Appendix V).

Other Policies: A few other policies have been issued including Drug and Alcohol policy.

3.3 Industrial Labour Relations

3.3.1 Employment

The company workers include expatriates and Nigerians at management, managerial, senior, and junior cadres. Both genders are employed but the male gender commands higher percentage.

3.3.2 Employment Opportunities

The company does not discriminate in its employment. However, priority is given to employing suitably qualified workers from the host communities.

3.3.3 Welfare

The Company operates with due respect to the Nigerian Industrial Labour laws. The workers have freedom to belong and participate in labour union activities and workers belong to the Agricultural and Allied Workers Union of Nigeria (AAWUN). This allows for collective bargaining, honesty, and communication in both directions. The Company offers competitive wages and welfare packages (salaries plus allowances and bonuses) for all categories of staff.

Accommodation and other essential utilities, like water and electricity, are also provided free for all the workers that are resident on the estate. There is also the provision of waste management facilities and personnel to ensure a clean environment both in the residential and office premises.

The company operates a standard clinic to cater for the basic health services requirements and as a matter of policy, provides all the necessary personal protection apparel for each worker on yearly basis. It tries to make work areas conducive for maximum comfort, devoid of preventable environmental and health hazards.

3.4 Corporate Social Responsibility

3.4.1 Community Relations/Development Undertaking

The company has a 'Host Community Policy' and has undertaken several community developments projects to demonstrate its spirit of partnership and goodwill to the host communities. There is a manual documenting some of the projects undertaken by the company.

CHAPTER FOUR

REMARKS AND RECOMMENDATIONS

4.1 Compliance with Legislation

4.1.1 Submission of Records and Reports to Regulatory Bodies

The company has been submitting most of the reports and information to the appropriate regulatory bodies. It is therefore recommended that all reports, data, lists and log sheets relating to the environment be submitted to the Federal and State Ministries of Environment and other relevant regulatory bodies, and every submission be duly acknowledged and copies filed appropriately.

4.1.2 HSE Department

There is a fully operational HSE department with capable personnel. The department plans, manages, oversees, and supervises environmental, occupational health and safety activities of the solid waste dumpsite.

4.1.3 Permits/Licenses/Approvals

Most permits, certificates and licenses have been obtained. It is recommended that all outstanding permits/Licenses/Approval be obtained, and expired ones validated.

4.1.4 IMS and Other Policies

The company has developed an integrated management system (IMS) policy and other policies as they are applicable to its operation.

4.2 Environment

4.2.1 General Housekeeping and Sanitation

Housekeeping and sanitation at solid waste dumpsite are fair but can still be improved upon, especially at the excavated part of the SWD for decomposable waste. It is recommended to:

- ❖ Stop dumping cartons into the excavated pit. Source for prospectus buyers for recycling.
- ❖ Dispose and/or discharge properly all decomposable waste inside the excavated pit.
- ❖ Immediately evacuate all recyclable waste from the compartment when it is full to avoid eyesore.

4.2.2 Drainage System

There is a good drainage system around the SWD to lead storm water into the major drains.

4.3 Waste Management System

Sorting of waste from source is being done as shown in Plate 6.

4.3.1 Liquid Waste Handling

The liquid waste handling system is good and does not lead to pollution of the environment.

4.3.2 Record Keeping and Manifest System

There is a record keeping and manifest system for waste management. This will enable the tracking of waste on the estate (see Appendix VI).

4.3.3 Solid Waste Dumpsite

The solid waste dumpsite looks good and well secured under lock. A permit has been obtained from the Edo State Ministry of Environment and Sustainability to operate the solid waste dumpsite which expires October 2024.

It is recommended to:

- Mark the general and recyclable waste bins in offices to encourage people to think more carefully about the waste they produce and how to store it before disposal.
- Ensure that it is clear as to which bin collects which waste stream.
- Ensure that there is no mix-up of hazardous and/or empty agrochemical containers with general/domestic waste when transferring the waste to the solid waste dumpsite (SWD).

4.4 Pollution

Considerable provisions have been made to prevent pollution, particularly air pollution (source and ambience) at the solid waste dumpsite. It is recommended that environmental monitoring including groundwater, air and leachate analysis be conducted on a quarterly basis. This will enable the company to track any potential contamination and pollution at the facility.

4.4.1 Drinking Water Quality

The quality of water supplied from the nearest borehole is good except pH which is acidic. It is, however, recommended that treatment be done to correct the pH (add potash) of the borehole water to prevent corrosion and material leaching.

4.4.2 Ambient Air Quality

The in-situ determination of the gases showed that all gaseous emissions including suspended particulate matters (SPM) were within the FMEnv permissible limits. However, it is recommended that waste management workers always use appropriate PPE especially the Nose Mask/Respirator.

4.4.3 Noise

The noise levels at the facility, including the nearest residential buildings are within permissible limits of 85 dB(A) and **90 dB(A)** for 8-hours exposure for NESREA and FMEnv respectively. It is recommended that routine checks be done to monitor noise levels around the solid waste dumpsite.

4.5 Emergency Response/Contingency Plans

There is a well written Emergency Response and Contingency Plans that are properly documented. It has also been submitted to regulatory bodies in Edo State for review and approval.

4.6 Health

4.6.1 Clinic

It is required to:

- *Compile records of industrial incidents/near misses and comparative statistical analysis be established for accidents, incidents, and fatalities.*
- *Keep records of dangerous occurrences, incidents and near misses. The record of on-site and off-site accidents should also be kept accurately and reported to the appropriate regulatory authorities.*

4.6.2 Occupational Accidents and Dangerous Occurrences

It is important to always report dangerous occurrences such as near-misses so that incidents and accidents can be mitigated. It is recommended that all dangerous occurrences, incidents, and accidents be reported, and the findings of investigation be utilized in proffering solutions in order to avoid reoccurrence.

4.7 Fire Prevention and Control

It is recommended that the present fire prevention and control measures in place be sustained.

4.8 Establishment of Monitoring Well

It is desirable that a monitoring well be established at about 100 radius to the solid waste dumpsite and sample be taken for analysis on quarterly basis. This will enable quick tracking of leachate infiltration into groundwater.

4.9 Training, Communication and Reporting

The existing training and education arrangement appear to be good. It is recommended to regularly review the training curriculum, and the training should cut across most workplaces.

4.10 Signage

There is quite a few signage on the estate, especially on waste handling and management. It is recommended workers are educated on the importance of signage, especially the message, interpretation, and compliance.

4.11 Industrial Labour Relations

The industrial labour relations of the company are good, and it is recommended to improve on it.

4.12 Corporate Social Responsibility

The CSR of the company would seem to be good and should be sustained. It is recommended that gender development especially for women be included in the development agenda for host communities.

APPENDIX I

LABORATORY ANALYSIS RESULTS (GROUNDWATER QUALITY)

May 2025

Analyst's Certificate

[Institute of Public Analysts of Nigeria Decree 100 of 1992]

No: 252258

Name of Sample:	Groundwater	Project 1: Main Estate
Client:	Foremost Development Services Limited, Akute.	
	For: OKOMU Oil Palm Company PLC, Benin City, Edo State.	
Submission Date:	1 May 2025	Lab No.: EL/W/2502/38465 - 38473

Methodology:

Samples of water collected from all locations were analyzed using Standard methods for the examination of water and wastewater (APHA 24th Edition 2022). The parameters examined are as contained in the result Table.

Sampling Locations

S/N	Code	Sample Location/Site	Coordinates	
1.	OKM _{IITA}	IITA Quarters	N06°24' 49.3"	E005°12'57.4"
2.	OKM _{IITA2}	IITA Quarters	N06°24' 49.3"	E005°12'57.4"

Result of Analysis

The result of on-site measurements and laboratory analyses carried out on the groundwater samples collected from Main Estate Quarters while in the same condition as submitted to us is presented in Table 1:

Comment

- pH of most of the samples differs from the limit;
- All other physico-chemical parameters are within the Standard;
- The microbiological quality of the samples also fell within the Standard.

I, the undersigned Public Analyst, OYEDIRAN, L.O. (IPAN NO. 00155®), make this certification, as witnessed my hand this 7th day of May, 2025.



Table 1: Result of Analysis of Groundwater Samples from Dumpsite Area

Parameter/Unit	Method APHA 2022	OKM _{IITA1}	OKM _{IITA2}	NIS554: 2015
Appearance		Clear with Particles		
Odour		Unobjectionable		Unobjectionable
pH @ 25.0°C	4500-HB	5.93	4.26	6.5 - 8.5
Temperature, °C	2550 -B	26.0	25.4	Ambient
Conductivity, $\mu\text{S}/\text{cm}$	2500-B	50	50	1000
Total Dissolved solids, mg/L	2120-C	25	25	500
Total Suspended Solids, mg/L	2130-B	2	2	-
Total Solids, mg/L	2540-D	29	27	-
Colour, Pt-Co	2540-C	41	<0.1	15
Turbidity, NTU	2540B	4	<0.01	5
Total Hardness, mg/L	2340-C	<1	<1	150
Total Alkalinity, mg/L	2320-B	4	4	-
Total acidity, mg/L	2310-B	25	20	-
Calcium, mg/L	3500-B	<0.01	<0.01	-
Magnesium, mg/L	3500-B	<0.01	<0.01	20
Chloride, mg/L	4500-B	8.0	6.4	250
Nitrate, mg/L	4500-NO ₃ -E	<0.01	<0.01	50
Nitrite, mg/L	4500-NO ₂ -B	<0.01	<0.01	0.2
Sulphate, mg/L	4500-SO ₄ -E	4.0	3.6	100
Phosphate, mg/L	4500-E	<0.01	<0.01	-
Iron (total), mg/L	3500-B	<0.01	<0.01	0.3
Fluoride, mg/L	4500-FC	<0.1	<0.01	1.5
Lead, mg/L	3500 -Pb-B	<0.001	<0.001	0.01
Arsenic, mg/L	3500 -As-B	<0.001	<0.001	0.01
Manganese, mg/L	3500 -Mn-B	<0.001	<0.01	0.2
Copper, mg/L	3500 -Cu-B	<0.001	<0.01	1.0
Cadmium, mg/L	3500 -Cd-B	<0.001	<0.001	0.03
Hydrogen Sulphide, mg/L	4500-S ² -H	<0.01	<0.01	0.05
Total coliform count, CFU/100 mL	9225-D	0	0	10
Faecal coliform, <i>E.coli</i>),	9222-D	0	0	0
<i>Salmonella/Shigella sp.</i> ,	9260-E	0	0	0
<i>Staphylococcus sp.</i> ,	AOAC 995.12	0	0	0
<i>Pseudomonas aureus</i> ,	9213-E	0	0	0
Total plate count,	9215-B	4	6	10 ²



APPENDIX II

LABORATORY ANALYSIS RESULTS (SOLID WASTE DUMPSITE AIR QUALITY)

Analyst's Certificate

[Institute of Public Analysts of Nigeria Decree 100 of 1992]

No: 362533

Name of Sample	MAIN ESTATE SOLID WASTE DUMPSITE Air Quality
Client	Foremost Development Services Limited For: OKOMU Oil Palm Company PLC, Benin City, Edo State.
Sampling Date	2 May 2025

Methodology:

Sampling and measurement of ambient air quality and noise level were carried out using portable analyzers. Gaseous components of the air were monitored using combination of gas monitors (Industrial Scientific iTX and 7-in-1 air quality monitor) to measure the concentration of carbon monoxide (CO), Sulphur dioxide (SO₂), hydrogen sulphide (H₂S), nitrogen dioxide (NO₂), Total volatile organic compounds and carbon dioxide (CO₂). Handheld Aerosol Monitor PPM1055 was used for the measurement of suspended particulate matter while noise level was determined using digital sound level meter within and around the facility.

Result

The result of on-site measurements carried out on the ambient air at the facility is presented in Table 1. Table 2 contains the result of noise level assessment at critical locations.

Comments

Based on the result of air and noise quality measurements conducted around the facility,

- The gases are within the Standard at all point;
- The particulate matter exceeded the limit at most of the points;
- The noise level fell within the limit at most of the points.

I, the undersigned Public Analyst, OYEDIRAN, L.O. (IPAN NO. 00155®), make this certification, as witnessed my hand this 5th day of May 2025.



Table 1: Result of Air Quality Measurement and Noise Level Inside and Outside the Dumpsite.

Location	IITA	<i>Solid Waste Dumpsite (Inside)</i>	<i>Solid Waste Dumpsite (Outside)</i>	Standard S.I.35/ S.I.88/ S.I.93
Coordinate	N06°24'84.7" E005°12'848"	N06°24' 52.1" E005°12'54.4"	N06°24' 55.6" E005°12'14.2"	
Elevation (m)				
Noise dB(A)	49.9	51.1	50.5	85
Relative Humidity, %	57.4	87.2	81.3	<70
Temperature, °C	37.4	28.6	29.8	<25.5
Carbon monoxide, ppm	1.0	1.0	2.0	26.2
Carbon dioxide, ppm	406	810	413	Ambient
Oxygen, %	20.9	20.9	20.9	21.0
Hydrocarbon as CH ₄ , ppm	<0.001	<0.001	<0.001	0.008
Sulphur dioxide, ppm	<0.01	<0.01	<0.01	0.2
Nitrogen dioxide, ppm	<0.01	<0.01	<0.01	0.2
Formaldehyde, µg/m ³	9	10	3	120
TVOC, µg/m ³	16	16	12	300
PM _{2.5} , µg/m ³	60	88	92	40
PM ₁₀ , µg/m ³	140	145	103	150

TVOC = Total Volatile Organic Compounds; PM = Particulate Matter.



Table 2: Result of Noise Quality Assessment at the Main Estate

LOCATION	Noise Level, (dBA)
IITA Quarters	51.1
Solid Waste Dumpsite Point 1	45.2
Solid Waste Dumpsite Point 2	43.5
Solid Waste Dumpsite Point 3	48.6
Solid Waste Dumpsite Point 4	49.4
Solid Waste Dumpsite Point 5	42.8
Solid Waste Dumpsite Point 6	44.3
Solid Waste Dumpsite Point 7	42.3
Solid Waste Dumpsite Point 8	44.8
Solid Waste Dumpsite Point 9	43.4
Solid Waste Dumpsite Point 10	47.7
FMEEnv Standard (8-hour)	90



APPENDIX III

LABORATORY ANALYSIS RESULTS (LEACHATE WATER QUALITY)

Analyst's Certificate

No:3824225

[Institute of Public Analysts of Nigeria Decree 100 of 1992]

Name of Sample:	Leachate Sample: Solid Waste Dumpsite ENVIRONMENTAL AUDIT
Client:	Foremost Development Services Limited For: OKOMU Nig. Plc Okomu-Udo, Edo State.
Submission Date:	2 May 2025 Lab No.: EL/W/W/1912/41120

Methodology:

Samples of Leachate (2 Nos.) collected from solid waste dumpsite were analyzed using Standard methods of water and wastewater analysis (APHA, 23rd edition) and HACH methods of analysis of water (12th edition). The parameters examined are as contained in the result Table.

Sampling Locations

S/N	Code	Location	Coordinates	
			N	E
1	OKM _{SWD1}	Point 1	N06°24' 52.1"	E005°12'54.4"
2.	OKM _{SWD2}	Point 2	N06°24' 52.1"	E005°12'54.4"

Result of Analysis

The results of on-site measurements and laboratory analysis carried out on the leachate water samples collected from **OKOMU Oil Palm Company Solid Waste Dumpsite** while in the same condition as submitted to us are presented in Table 1:

Comments

Based on the result of analysis conducted on the samples:

- The pH of leachate sample was within the Standard of 6.0-9.0
- The conductivity and corresponding dissolved solids were below the limit.
- The colour, turbidity, suspended solids, BOD and COD were also higher than their respective limits in both samples
- Other parameters conformed to the standard.

I, the undersigned Public Analyst, **OYEDIRAN, L.O. (IPAN NO. 00155[®])**, make this certification, as witnessed my hand this 8th day of May 2025.

FEMI OYEDIRAN
INSTITUTE OF PUBLIC ANALYSTS OF NIG.
(ESTABLISHED BY DECREE NO. 100 OF 1992)
PRACTICE CERTIFICATE No: 00155

Table 1: Result of Analysis

S/N	Parameters	Methods	Results		FMEnv Limit
1	pH	ASTM D1293-18	6.62	6.65	6.5-9.0
2	Temperature	EPA 79	28.4	28.4	<40
3	Electrical Conductivity	ASTM D1125-14	1000	1800	N/A
4	TDS	ASTM D868	1200	1400	2000
5	Turbidity	ASTM D7315-17	22.75	23.80	N/A
6	TSS	ASTM D1868	3.30	4.20	30
7	THC	ASTM D3921	<0.01	<0.01	10
8	DO	ASTM D888-92(96)	1.20	1.40	N/A
9	BOD	APHA-507	55.20	60.50	50
10	COD	ASTM D1252-95	85.60	91.20	80
11	Chloride	ASTM D512-89(96)	300.0	290.5	600
12	Alkalinity	ASTM D1067-92	110.70	120.65	N/A
13	NO ₃	ASTM D3889-90	8.20	9.40	20
14	NO ₂	ASTM D3867-09	6.40	7.60	N/A
15	SO ₄	APHA 427C	6.50	7.85	500
16	NH ₄ -N	ASTM D1426-93	9.10	9.55	N/A
17	PO ₄	ASTM D515-88	3.45	3.80	5
18	Na	ASTM D5863-2016	20.40	21.20	N/A
19	K	ASTM D2791-93	11.50	11.90	N/A
20	Ca	ASTM D511-14	30.60	31.20	200
21	Mg	ASTM D511-14	4.40	4.60	200
22	Total Hardness	ASTM D511-14	140.5	142.1	N/A
23	CN	EPA 1914	<0.01	<0.01	0.1
24	OG	ASTM D3921	<1.0	<1.0	10
25	Pb	ASTM D4834-03(14)	0.075	0.82	<1.0
26	Cd	ASTM D3557-95	<0.001	<0.001	<1.0
27	Mn	ASTM D858-95	0.001	0.001	5
28	Cr	ASTM D1687-92	0.001	0.001	<1.0
29	Cu	ASTM D858-17	0.024	0.026	<1.0
30	Fe	ASTM D1068-15	0.20	0.19	20
31	As	ASTM D2972-97	<0.001	<0.001	0.1
32	Hg	ASTM D7623-10(15)	<0.001	<0.001	0.05
33	Dioxin,	GC FID	<0.001	<0.001	N/A
34	Pesticide (PCBs),	GC FID	<0.001	<0.001	0.003

NS - Not Specified

APPENDIX IV

WASTE AND POLLUTION MANAGEMENT PROCEDURE (REFERENCE GP 33)

	Document title	Revision: 6
	OKOMU OIL PALM COMPANY PLC	Date: 08/07/22
	WASTE AND POLLUTION MANAGEMENT	Page 1 of 16
	Reference: GP 33	



Action	Name	Function	Date	Signature
Prepared by	Mikle George	HSE Manager		
Verified by	Mikle George	HSE Manager		
Approved by	Graham Hefer	Managing Director		

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1. INTRODUCTION

This procedure seeks to ensure the appropriate handling, storage and disposal of waste generated at OOPC. It is aimed at waste avoidance and minimization which are achieved with the following objectives:

- identification of the types and quantities of waste that would be generated and the areas in which waste will be stored prior to removal;
- standards and performance measures for dealing with this waste;

Based on federal, state and local regulations, waste is classified into three main categories:

- non-hazardous waste: does not pose any danger to humans and environment (e.g. household garbage);
- hazardous waste: waste of this type either contains leachable toxic components or has common hazardous properties such as reactivity or ignitability;
- Special waste: wastes of this type vary in their properties and are regulated with specific guidelines (example includes medical and radioactive wastes).

The bulk of waste generated by OOPC is organic waste which is non-hazardous in nature. Others include empty agrochemical containers, spent oil, used batteries (hazardous), glass, plastic, plantation polythene bags, mixed paper, and medical waste. -.

1.1. WASTE STREAMS AT OOPC

1.1.1 SOLID WASTE

This includes household waste (domestic waste) generated from OOPC residential areas. This waste is mostly non-hazardous in nature. Others include glasses, plastics, plantation polythene bags, mixed papers, and medical waste.

1.1.2 HAZARDOUS SUBSTANCES

OOPC generates quantities of hazardous waste. Most of these wastes are generated by the plantation, workshop, estate department and quality control laboratories. Although the types of waste vary, the most common include empty agrochemical containers, spent oil, batteries containing lithium, nickel and sulphuric acid (H₂SO₄). Where there are expired agro-chemicals and laboratory chemicals, expert advice about their disposal must be from the relevant state and federal regulatory authorities, and/or companies that manufacture these items.

1.1.3 MEDICAL WASTE (SPECIAL WASTE)

These are wastes produced by the Clinic (needles, syringes and pathological waste). The clinic disposes these wastes by burning them inside the boiler at the oil mill.

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1.1.4 NON-SOLID WASTE

These include liquid and gaseous wastes that are produced from Oil mill, Rubber factory processes and septic tank waste.

2. SCOPE

This waste management plan describes how OOPC manages all its wastes and ensure compliance to necessary requirements of ISO, RSPO, Socfin's Responsible Management Policy, GPSNR and FSC

3. ABBREVIATIONS

MD	Managing Director
HSEM	Health, Safety & Environment Manager
OOPC	Okomu Oil Palm Company
COD	Chemical Oxygen Demand
BOD	Biochemical Oxygen Demand
PM	Particulate Matter
POME	Palm Oil Mill Effluent
NESREA	National Environmental Standards & Regulations Enforcement Agency
RSPO	Roundtable on Sustainable Palm Oil
ISO	International Organization for Standardization
FSC	Forest Stewardship Council
GPSNR	Global Platform for Sustainable Natural Rubber

4. DEFINITIONS

ph : measure of how acidic/basic a liquid is. The range varies between 0 - 14, with 7 being neutral. A pH of less than 7 indicates acidic whilst a pH of greater than 7 indicates a basic environment.

5. LEGAL REQUIREMENTS

The National legislation applicable to this procedure includes:

- The National Policy On Environment, 1999
- National Guidelines and Standards for Environmental pollution Control in Nigeria, 1991
- National Effluent Limitations Regulations S.I.8, 1991
- National Environmental Standards and Regulations Enforcement Agency (NESREA 2007)
- Waste Management and Hazardous Waste Regulations S.I.15, 1991
- National Policy on Plastic Waste Management, 2020
- National Policy on Solid Waste Management, 2020

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6. RESPONSIBILITIES

- Estate Department is responsible for moving solid waste from disposal points to the dumpsites.
- HSEM shall monitor compliance with this procedure and continuously assess methods of effective waste/pollution management.

7. PROCEDURE

7.1. Basic Principles Of Waste & Pollution Management

In order to achieve its waste avoidance and minimization objectives, OOPC encourages its employees to follow the hierarchy below of waste management principles in all aspects of their operations:

- Reduce
- Reuse
- Recycle/ Reprocess
- Recover
- Refuse

Thoughtful use of all materials and using the basic principle of waste and pollution management is good for the environment and good for business. If an item can be used more than once, it will be used as such and if a used item can be put to another use, it will be recycled. OOPC developed a system to record waste types and quantities for all waste streams. This will help demonstrate a step towards better waste management, as it will allow the establishment of standard/normal waste levels. Records of waste quantities will allow OOPC to assess the performance of its operations to avoid and minimize waste. The avoidance of printing of unnecessary documents/emails and reusing the reverse side of paper are prime examples of our commitment to avoiding and minimizing waste.

7.2. Waste & Pollution Prevention And Control

Good waste and pollution prevention and control practices in the industry focus on the following main areas:

- Reduction of product losses through strong and active production controls, including continuous sampling and measuring of key production parameters allowing production losses to be identified and reduced, thus reducing the waste load.
- Maintain a clean workplace, recover product, and control air emissions.
- By-products recycling and sale (see below).
- Re-use of materials (e.g. empty fertilizer bags).

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7.3. Waste Disposal & Duty of Care

OOPC has a responsibility to take all reasonable measures to:

- Ensure that all waste is stored and disposed of responsibly.
- Ensure that waste is only handled or dealt with by authorized individuals or departments.
- Ensure that the use of fire to dispose waste is avoided.

OOPC will implement technically and cost-effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities.

7.4. Waste Generation & Disposal

7.4.1 SOLID WASTE

The main solid wastes generated and the methods of disposal are as follows:

- Used oil filters (excess oil drained off before disposal). Collected by a government approved collector/organization.
- Empty fruit bunches (EFB) - Shredded or whole: Returned to the plantation and used as a mulch.
- Fibre: Used as boiler fuel and in the field.
- Shell: Used as boiler fuel.
- Clinker/Boiler ash: Used in the field.
- Calyx/Leaf from FFB conveyor: Used in the field
- Tricanter Waste: Used in the field
- Scrap metal: Stored at designated locations and sold to dealers for recycling. The sale will be handled by internal audit Unit.
- Empty fertilizer bags/Cellophane: Triple rinsed and then reused for harvesting operations.
- Empty agrochemical containers are rinsed, hole punched and sent to the allocated area at the dumpsite awaiting final evacuation by the suppliers/manufacturers to be disposed according to manufacturers' instructions. Bigger agrochemical containers are used as temporary receptacles during spraying activities.
- Used tyres: Stored at designated locations and sold to dealers for recycling.
- Expired batteries. Stored at designated locations and sold to dealers for recycling.
- Photocopier Toner and Printer ink cartridges: Stored at designated locations and sold to dealers for recycling.

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- Redundant Electronics and other e-wastes: Stored at designated locations and sold for reuse.
- Used spill kits: Collected by government approved collector/organization
- Solid waste: Collected on a routine basis and disposed of at designated dumping sites. A bulldozer or pay loader will be used from time to time at dumping sites to push waste inwards for more space at the discharge point.
- Electric bulbs/fluorescent tubes: Collected from offices and housing units by the Estate department, place in designated bins and taken to the designated locations (dumpsite) and sold to approved collectors.
- Saw dusts: reused as spill kit and collected by approved waste collector.
- Biohazards and medical sharps from Clinic: disposed of in the boiler.
- Waste papers: stored in the dumpsite.
- Glass and bottles: Stored at designated locations at dumpsite and sold to approved dealers for recycling.
- Old Knapsack sprayers: Unserviceable Old knapsack sprayers or parts are kept in a temporary designated place at the chemical stores to be used as sources of spares till they become obsolete. At Main Estate, the obsolete knapsack sprayers are disposed at the dumpsite (under a shed) for collection by government licensed collectors. At Extension 2, pick up by government licensed collectors will be from the designated place at the store. Obsolete knapsacks must be inventoried on OOPC/Form 2.6

The location of designated dumping sites was carefully chosen to ensure that it is not near a residential area and not near any water courses or bodies of water. Designated dumping sites are clearly demarcated and access restricted for designated staff only. At Extension 2, a government licensed waste manager is contracted to collect wastes from waste bins and taken to the government approved dumpsite. Waste management principles will be encouraged in surrounding communities, when and where possible & applicable.

7.4.2 LIQUID WASTE

The main liquid waste generated is the palm oil mill effluent (POME) generated by the processing of fresh fruit bunches. Liquid process wastes are passed through sludge tanks and fat traps to recover oil before being discharged into an effluent lagoon for final biological degradation of the remaining waste load. POME will be analyzed on a quarterly basis for the following parameters, for which the NESREA (see legal requirements) limits are indicated:

- | | |
|--------------------|--------------------------------------|
| • pH | (range at final discharge 6.0 -9.0) |
| • BOD | (maximum at final discharge 30 mg/l) |
| • COD | (maximum at final discharge 80 mg/l) |
| • Suspended solids | (maximum at final discharge 30 mg/l) |
| • Oil & grease | (maximum at final discharge 10 mg/l) |

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Monitoring data will be analyzed and reviewed at regular intervals and compared with the operating standards so that any necessary corrective actions can be taken. Records of monitoring results are kept in file. The results will be reported to the responsible authorities and relevant parties, as required.

Used oil from vehicles and maintenance activities is stored in tanks and drums in a specified area to be sold to dealers for appropriate recycling and disposal.

7.4.3 GASEOUS WASTE

The main sources of air emissions are from the flue gases boilers, machineries, vehicles, heavy duty machines and Generator sets. These contain amounts of carbon monoxide, carbon dioxide and nitrogen oxides. There is also particulate matter.

Boilers are built with equipment used to remove as much unburned particulate matter as possible.

Emissions guidelines

Emissions levels for the design and operation of each project will be established through the environmental assessment (EA) process on the basis of national legislation. The guidelines below present emissions levels acceptable to the World Bank. Concentrations of contaminants emitted from the stacks of large boilers, furnaces, incinerators, and electrical generating equipment should not exceed the following limits (milligrams per normal cubic meter) as per National Environmental (Air Quality Control) Regulations, 2014. This will be monitored quarterly.

Pollutants	Ambient Limits	Limit from stationary sources (for 24 hrs)
Particulates	250 mg/m ³ (Daily average of daily values 1 hour)	0.15-0.5 mg/m ³
Sulphur dioxides (SO ₂)	250 mg/m ³ (Daily average of daily values 1 hour)	0.15-0.5 mg/m ³
Carbon monoxide	10 ppm (11.4 mg/m ³)- 20 ppm (22.8mg/m ³) (Daily average of hourly values 8-hours)	1.0 – 5.0 mg/m ³
Nitrogen dioxides (NO ₂)	0.04 ppm - 0.06 ppm (75.0– 113 mg/m ³) Daily average of 1-hourly values (range)	0.004 – 0.1 mg/m ³

7.4.4 LITTER

In order to reduce litter being dropped in public and working areas, litter bins are put in place. The litter bins will be emptied and litter disposed on a scheduled basis (see days of waste collection in OOPC pamphlet). Weight of the litter will be taken

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to estimate the total amount going to the dumpsite and calculated annually for total waste disposed at the dump site. The weight estimation shall be conducted at the weighbridge and the documented weight shall be kept for record keeping at HSE department.

7.4.5 DUST

Dust from roads may present an environmental hazard, particularly to those working or living near busy roads. Mitigation measures include:

- Enforcing speed limits (20 kph in residential areas and industrial).
- Diverting traffic to avoid residential and industrial areas.
- Sealing roads in residential and industrial areas.
- Watering of main roads during the dry season.

7.4.6 ODOR

Odor from operations can usually be prevented through good housekeeping. When planning the location of residential sites, odor from operations should be considered. Thus, the dumpsites are located at least 500m from existing residential areas. The rubber factory effluent pond is about 500m from the rubber estate while the oil mill's effluent lagoon is approximately 1000m from the nearest residential quarters.

7.4.7 NOISE

Noise from operations may present an environmental hazard, particularly for those working/living near noise generating machinery and equipment. Mitigation measures include:

- Installing noise reducing equipment such as silencers and mufflers.
- Maintaining machinery and equipment to minimize noise levels.
- Putting noisy machinery and equipment inside a purpose-built building that reduces the effects of the noise.
- Redesigning noisy machinery and equipment to reduce noise.
- Ear plugs/muffs.

7.5. Waste Tracking System

OOPC currently tracks wastes that are of dire consequences to the environment and safety of its personnel. To this end, chemical containers used at plantation are tracked from the time it leaves the store to the dumpsite. ALL containers that leave the store should be returned to the store handler after use who must immediately record the total number given out and received (See OOPC/Form 2.1). All used chemical containers must be triple rinsed and the containers returned to the store handler. Finally, the chemical containers are taken to the dumpsite, after perforating, awaiting collection by the suppliers. The water from the washed containers is poured into the knapsack for spraying. The store handler must then record the amount of containers sent to the dumpsite which must

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correspond to the amount entered by the dumpsite attendant after receipt by him at the dumpsite.

Effluent volume is monitored daily with the aid of a flow meter installed at the discharge point at the Oil mill and rubber factory for monitoring the amount of effluent released to the lagoon or pond. A monthly data sheet is generated (See Records).

Scheduled waste such as Used Oil Filters, Used Oil, Biohazardous materials, used batteries, tyres, toners etc must be inventoried departmentally on a monthly basis on OOPC/Form 2.6 and record sent to HSE Manager for collation.

8. RECORDS

- Quarterly Environmental Compliance Monitoring Report
- OOPC/Form 2.1
- OOPC/Form 2.5
- OOPC/Form 2.6
- Weighbridge Ticket
- Environmental Policy

9. REFERENCE

- RSPO Criteria 7.2, 7.3 and 7.8
- FSC Criteria 6.7
- IFC (2012) Performance Standard 3: Resource Efficiency and Pollution Prevention
- ISO 14001:2015 Clause 5.2

10. REVISION STATUS

Rev.	Date	Details
0	09/02/16	Initial Release
1	06/04/17	Addition in Section 8 – Records Change ISO “14001:2004 Clause 4.2” to ISO 14001:2015 Clause 5.2
2	10/05/18	Addition of sentences in §7.4.1, §7.4.4 and §7.5
3	13/07/19	Addition in 7.4.1 Waste generation and disposal. “final biological degradation of the remaining waste load” replaced “treatment and ultimate reuse in plantation” in §7.4.2 Addition in 7.4.3 Gaseous Waste Addition in Appendix I and III
4	17/06/20	Addition in §1.1.4

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		Added RSPO & ISO in §3- Abbreviation Changed project to procedure in §5- Legal Requirement Addition in §7.1 Changed shall to should in §7.4.6 Addition in §7.4.7 & §7.5 Added Environmental Policy in §8- Records Changed RSPO Criteria 4.6 and 5.3 to RSPO 2018 P&C 7.2, 7.3 and 7.8 in §9- Reference
5	22/03/21	Added Paragraph in §7.3 Edited 10th & 17th point in §7.4.1 Added Extension 2 operation in in §7.4.1 Edited first paragraph for semantics in §7.4.3 Added muffs to §7.4.7 Replaced 'Appendix III' with OOPC/Form 2.1 in §7.5 Added empty vials to 7. Medical waste in Appendix I Edited Quarterly Report to include Env. Comp. Monitoring in Records
6	08/07/22	Added Sentence in Section 2 Added FSC in Section 3- Abbreviation Removed RSPO in Section 4- Definitions Updated legal references in Section 5 Added phrases and bullet point in §7.4.1 and §7.4.3 Rephrased sentence in §7.5 Removed 'Appendix III'

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APPENDIX I: WASTE MANAGEMENT PLANS AT OKOMU OIL PALM COMPANY

S/No.	TYPE OF WASTE	STORAGE SYSTEM	VOLUME GENERATED	TRANSPORTATION / REMOVAL RATE	FINAL DISPOSAL	REMARKS
1.	Household Organic waste: - Left- over Food - Organic residue (garden waste)	• Waste bins	• Waste inventory necessary for quantity generated	• Tractor / Daily	• Solid waste dumpsite • Plantation field	
	Household Inorganic Waste: - Plastic Polythene bags e.g. pure water sachets - Glass wares - Empty cans - Paper trash	• Waste bins (Sorting necessary)	• Waste inventory necessary for quantity generated	• Tractor / Twice weekly	• Solid waste dumpsite	
2.	Plantation Organic waste: Palm and rubber leaves, shrubs, weeds	• None	N/A	• Ad hoc	• Plantation field	
	Plantation Inorganic waste: - Polythene bags - Damaged latex cups	• Kept in the store.	• Waste inventory necessary for quantity	• Tractor / As required	• Dump site (To be reused or sold)	
	Plantation Hazardous waste: - Empty agrochemical containers. - Old Knapsacks - Fertilizer bags - Expired agrochemicals	• Collected and kept in the store	• Waste inventory necessary for quantity generated	• As required	• Taken to dumpsite and taken away by the supplier • Fertilizer bags are reused	

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3.	Palm Oil Mill (POM) waste: • Palm Oil Mill Effluent • Sludge • Empty Fruit Bunches (EFB) • Fibres • Kernel shell • Boiler ash • Damaged/Faulty banga plastic containers	• Palm Oil Mill premises • The damaged/faulty plastic containers are kept in the store	• Waste inventory necessary for quantity generated	• Pipe lines for the POME / simultaneously with production • Tractor for EFB, fibres, boiler ash, kernel shell and sludge / As required	• Effluent Lagoon for the POME • EFB as mulch in the field • Fibres and Kernel shell used to fire the boiler. • Damaged banga container returned to supplier. • Boiler Ash used for road maintenance	
4.	Rubber Factory waste: • Rubber Effluent • Rubber sludge • Low quality crump rubber • Polythene bags • Damaged pellets	• No storage • Decantation pit • Different bins for different rubber waste • Damaged pellets and polythene bags are stored in the factory	• Waste inventory necessary for quantity generated	• Pipe line for the rubber effluent simultaneously with production • None for low quality rubber and damaged pellets	• Effluent pond • Low quality rubber is recycled • Rubber sludge is taken to the plantation field as manure	

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5.	Laboratory waste (Hazardous): • Used chemicals • Empty chemical containers • Glassware	• Used chemicals are channeled to a specially designed soak away pit • Empty chemical containers and expired ones are well secured waiting for evacuation	• Waste inventory necessary for quantity generated	• Tractor / As required	• Dumpsite and taken away by the supplier • Glassware taken to the solid dumpsite	
6.	Workshop Hazardous waste: • Spent oil • Used oil filters • Empty paint containers • Condemn batteries	• Spent oil is kept in drums inside the workshop (special mgt system in place)	• Waste inventory necessary for quantity generated	• Tractors taking the drums from different locations / As required	• Used oil filters and spent oil are sold • Empty paint cans are collected by supplier and reused	
	Non-hazardous waste: • Scrap metals • Metal chips • Tyres • Paper	• Scrap yard for scrap metals including tyres, batteries	• Waste inventory necessary for quantity generated	• Tractor	• Scraps are sold • Tyres are sold • Paper to the dumpsite	
7.	Medical waste: • Needles and syringes • Pathological waste • Empty vials	• Pedal waste bin	• Waste inventory necessary for quantity generated	• Clinic van	• Boiler	• Medical wastes are classified as special waste that requires special treatment

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8.	Office waste: • Paper • Computer hardware and accessories • Plastic bottles • Polythene bags and wrappers	• Different waste bins. (Sorting is necessary)	• Waste inventory necessary for quantity generated	• Tractor/ Everyday	• Solid dumpsite	• Computer hardware and accessories are hazardous wastes
9.	Estate Waste: • Bulbs, lamps and fluorescent tube • Construction wastes and trash(empty paint cans) • Saw dust • Metal and plastic scraps (machines, dryers, air conditions, fridge etc.) • Insulation materials	• Waste bin • Spill kit bins • Scrap yard	• Waste inventory necessary for quantity generated	• Tractor / Twice weekly • Collected by various departments for reuse • Tractor / Twice weekly	• Solid dumpsite • Collected by various departments for reuse • Dumpsite and scrap yard	• Bulbs and fluorescent tube are hazardous waste • Saw dusts are reusable material. • AC/Fridges sold to staff and others for reuse.
10.	Systems Waste/E-wastes: • Screens & monitors. • GPS, cameras, Radios, routers, CPU, IP Phones etc. • Large printing and copying machines & photovoltaic panels.	• Scrap yard	• Waste inventory necessary for quantity generated	• Systems vehicle/ Collected from various department ad hocly	• Scrap yard	• Sold to authorized-waste recyclers

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APPENDIX II

WASTE TREATMENT FACILITIES

1. Solid waste dumpsite
2. Effluent treatment lagoon and pond
3. Scrap yard
4. Boiler
5. Plantation field

MEANS OF WASTE STORAGE AND COLLECTION

1. Waste bins
2. Collection points
3. Tractor
4. Pipe lines
5. Clinic Van

ENERGY REQUIREMENTS

1. AGO
2. Electricity

OCCUPATIONAL HEALTH REQUIREMENTS (PPE)

1. Waste collectors and Waste managers

APPENDIX V

ISO CERTIFICATIONS (EMS, QMS AND OHSMS)



BUREAU
VERITAS

Bureau Veritas Certification

OKOMU OIL PALM COMPANY PLC

OKOMU-UDO, OVIA SOUTH-WEST L.G.A, P.M.B. 1449, BENIN CITY, EDO
STATE, NIGERIA

*Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of
the above organization has been audited and found to be in accordance with the requirements of
the management system standards detailed below*

ISO 9001:2015

Scope of certification

**THE EXPLOITATION OF PALM AND RUBBER PLANTATIONS,
PRODUCTION OF RAW PALM OIL (CPO) AND PALM KERNEL OIL (PKO);
PRODUCTION OF RAW RUBBER INTO DRY RUBBER BALES AND
EXPORTATION OF PROCESSED RUBBER TO THE CUSTOMER.**

Original cycle start date from another Certification Body:	4-JUN-12
Expiry date of previous cycle:	3-JUN-24
Recertification Audit date	12-MAY-23
Recertification cycle start date	21-SEP-23
Subject to the continued satisfactory operations of the organizations management system, this certificate expires on	20-SEP-26

Certificate NO.: **AFR 20230926 NIG Q OKO**

Version: 1

Revision date: **21-SEP-23**

Signed on behalf of BVCH SAS UK Branch



0008

Certification Body address: 5th Floor, 66 Prescott Street, E1 8HG, United Kingdom

Local Office: 11, Niger Street, Parkview estate Ikoyi, Lagos Nigeria.

Further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call: +234 8099904340.



BUREAU
VERITAS

Bureau Veritas Certification

OKOMU OIL PALM COMAPANY PLC

OKOMU-UDO, OVIA SOUTHWEST LOCAL GOVERNMENT AREA,
EDO STATE.

Bureau Veritas Certification Holding SAS – UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 45001:2018

Scope of certification

THE PRODUCTION OF RAW PALM OIL (CPO) AND PALM KERNEL OIL (PKO), AND PROCESSING OF RAW RUBBER INTO DRY RUBBER BALES

Original cycle start date:	27-JAN-2021
Expiry date of previous cycle:	26-JAN-2024
Recertification Audit date	01-SEP-2023
Recertification cycle start date	18-DEC-2023
Subject to the continued satisfactory operations of the organizations management system, this certificate expires on:	26-JAN-2027

Certificate NO.: **AFR 20231220 NIG ES OOP** Version: **1** Revision date: **18-DEC-2023**

Signed on behalf of BVCH SAS UK Branch



0008

Certification Body address: 5th Floor, 66 Prescott Street, E1 8HG, United Kingdom

Local Office: 11, Niger Street, Parkview estate ikoyi, Lagos Nigeria.

Further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call: +234 809904340

Halal Certificate



Manufacturer	Okomu Oil Palm Company Plc
Business Number	08060361068
Address	L.G.A, Okomu Oil Palm Estate Okomuudo, Ovia South-West, Edo State, Nigeria
Products	Crude Palm Oil (CPO)
Certifier	Mahmud Ajeigbe
Certification Date	2024-10-30
Certificate Expiry Date	2025-10-30



Certificate ID: e3499ce2-c2be-47c8-848d-de973f03ec3f

SCS Global Services does hereby certify that an independent audit has been completed and conformity to the applicable standard(s) has been confirmed for:

Okomu Oil Palm Company PLC – Extension 2

OVIA NORTH-EAST LOCAL GOVERNMENT AREA, BENIN, EDO, -, Nigeria

RSPO Membership Number: 1-0269-19-000-00

Parent Company: Socfin SA, 4 avenue Guillaume, 1650, Luxembourg

This operation meets all the necessary qualifications to be certified for the production and management of the following:

Palm Oil and Palm Kernel Production – Mass Balance

Okomu Oil Palm Company PLC – Extension 2 has shown to meet all the necessary qualifications to be certified as a production and management system in accordance with the RSPO Principles and Criteria for the Production of Sustainable Palm Oil: 2018 *revised 01 February 2020 with updated Supply Chain Requirements for Mills; Nigeria National Interpretation 2021;

Certificate number	SCS-RSPOPC-000294
Start date certificate	07-09-2023
Expiration date certificate	06-09-2028
Date of first certification	07-09-2023

Issued by	SCS Global Services
Authorized signatory name	Matthew Rudolf Managing Director, International Operations
Authorized signature	

SCS Global Services, 2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA
SCS Global Services was accredited to provide RSPO Principles & Criteria Certification on 13 November 2018.
This certificate remains property of SCS Global Services and can be withdrawn in case of terminations as mentioned in the contract or in case of changes or deviations of the above-mentioned data. The licensee is obliged to inform SCS Global Services immediately of any changes in the above-mentioned data. Only an original and signed certificate is valid.

Okomu Oil Palm Company PLC – Extension 2

OVIA NORTH-EAST LOCAL GOVERNMENT AREA, BENIN, EDO, -, Nigeria

RSPO Membership Number: 1-0269-19-000-00

Parent Company: Socfin SA, 4 avenue Guillaume, 1650, Luxembourg

Palm Oil Mill and Supply Base				
Mill Address		Ovia North-East Local Government Area, Benin, Edo, Nigeria		
GPS Location		6.6751528, 5.81071944		
CSPO Projected Tonnage Total (MB)		34,533.12		
CSPK Projected Tonnage Total (MB)		3,956.92		
Estates FFB Projected Tonnage (MB)		125,033.87		
Scheme Smallholders FFB Tonnage		N/A		
Estates	GPS Reference		Certified Area (ha)	Annual FFB Production (mt)
	Latitude	Longitude		
Okomu Oil Palm Plantation Company Extension 2	6.6751528	5.81071944	11,569.64	125,033.87
TOTAL			11,569.64	125,033.87

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Okomu Oil Palm Company PLC - Main Estate and Extension 1

OKOMU-UDO OVIA SOUTH WEST LOCAL GOVERNMENT AREA, BENIN, EDO, PMB 1449, Nigeria

Based on an audit according to the requirements stated in the RSPO Supply Chain Certification Systems, version February 2020, and a signed contract, SCS Global Services herewith certifies that the aforementioned is found to be in compliance with:

RSPO Supply Chain Certification Standard, version February 2020

This guarantees that the criteria for processing RSPO certified palm products through one or more of the supply chain models as stated in the RSPO Supply Chain Certification Systems have been met.

RSPO membership number	1-0269-19-000-00
Other sites certified	No
RSPO registered parent company	Socfin SA, 4 avenue Guillaume, 1650, Luxembourg
RSPO membership number of parent company	1-0269-19-000-00
Scope of certification	This single-site certificate covers the production of CSPKO and CSPKC (CSPKE) using the Mass Balance supply chain model.
Start date of first certificate	07-01-2020
Start date of current certificate	07-01-2025
End date of current certificate	06-01-2030
Certificate number	SCS-RSPOSCC-000122
Supply chain model	Mass Balance
Issued by	SCS Global Services
Authorized signatory name	Matthew Rudolf, RSPO Program Manager
Authorized signature	

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SCS Global Services was accredited to provide RSPO Supply Chain Certification on 13 January 2017

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SCS Global Services does hereby certify that an independent audit has been completed and conformity to the applicable standard(s) has been confirmed for:

Okomu Oil Palm Company PLC - Main Estate and Extension 1

Okomu-Udo, Ovia South West Local Government Area, Benin, Edo, PMB 1449, Nigeria

RSPO Membership Number: 1-0269-19-000-00

Parent Company: Socfin SA, 4 avenue Guillaume, 1650, Luxembourg

This operation meets all the necessary qualifications to be certified for the for the production and management of the following:

Palm Oil and Palm Kernel Production Mass Balance

Company NAME has shown to meet all the necessary qualifications to be certified as a production and management system in accordance with the RSPO Principles and Criteria for the Production of Sustainable Palm Oil: 2018 *revised 01 February 2020 with updated Supply Chain Requirements for Mills; National Interpretation: Nigeria NI 2021.

Certificate number	SCS-RSPOPC-000121
Start date certificate	07-01-2025
Expiration date certificate	06-01-2030
Date of first certification	07-01-2020
Issued by	SCS Global Services
Authorized signatory name	Scott Coye-Huhn Vice President, Energy, Biomaterials, & Circularity
Authorized signature	

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Okomu Oil Palm Company PLC - Main Estate and Extension 1

Okomu-Udo, Ovia South West Local Government Area, Benin, Edo, PMB 1449, Nigeria

RSPO Membership Number: 1-0269-19-000-00

Parent Company: Socfin SA, 4 avenue Guillaume, 1650, Luxembourg

Palm Oil Mill and Supply Base				
Mill Address		Okomu-Udo, Ovia South West Local Government Area, Benin, Edo, PMB 1449, Nigeria		
GPS Location		6.40527778; 5.23527778		
CSPO Projected Tonnage Total MB		38,992.24		
CSPK Projected Tonnage Total MB		6,366.08		
Estates FFB Projected Tonnage MB		159,152.02		
Scheme Smallholders FFB Tonnage		N/A		
Estates	GPS Reference		Certified Area (ha)	Annual FFB Production (mt)
	Latitude	Longitude		
Okomu Main Estate (Nucleus Plantation)	6.3920083	5.2112138	9,382.90	118,187.05
Okomu Ext.1	6.3617	5.3944	2,099.33	40964.97
TOTAL			11,482.23 (ha)	Mt FFB

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SCS Global Services does hereby certify that an independent audit has been completed and conformity to the applicable standard(s) has been confirmed for:

Okomu Oil Palm Company PLC – Extension 2

OVIA NORTH-EAST LOCAL GOVERNMENT AREA, BENIN, EDO, -, Nigeria

RSPO Membership Number: 1-0269-19-000-00

Parent Company: Socfin SA, 4 avenue Guillaume, 1650, Luxembourg

This operation meets all the necessary qualifications to be certified for the for the production and management of the following:

Palm Oil and Palm Kernel Production –Mass Balance

Okomu Oil Palm Company PLC – Extension 2 has shown to meet all the necessary qualifications to be certified as a production and management system in accordance with the RSPO Principles and Criteria for the Production of Sustainable Palm Oil: 2018 *revised 01 February 2020 with updated Supply Chain Requirements for Mills; Nigeria National Interpretation 2021;

Certificate number	SCS-RSPOPC-000294
Start date certificate	07-09-2023
Expiration date certificate	06-09-2028
Date of first certification	07-09-2023

Issued by	SCS Global Services
Authorized signatory name	Matthew Rudolf Managing Director, International Operations
Authorized signature	

SCS Global Services, 2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA
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Okomu Oil Palm Company PLC – Extension 2

OVIA NORTH-EAST LOCAL GOVERNMENT AREA, BENIN, EDO, -, Nigeria

RSPO Membership Number: 1-0269-19-000-00

Parent Company: Socfin SA, 4 avenue Guillaume, 1650, Luxembourg

Palm Oil Mill and Supply Base				
Mill Address		Ovia North-East Local Government Area, Benin, Edo, Nigeria		
GPS Location		6.6751528, 5.81071944		
CSPO Projected Tonnage Total (MB)		29,433.42		
CSPK Projected Tonnage Total (MB)		4,671.97		
Estates FFB Projected Tonnage (MB)		129,777		
Scheme Smallholders FFB Tonnage		N/A		
Estates	GPS Reference		Certified Area (ha)	Annual FFB Production (mt)
	Latitude	Longitude		
Okomu Oil Palm Plantation Company Extension 2	6.6751528	5.81071944	11,569.64	129,777
TOTAL			11,569.64	129,777

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