SIWES REPORT

ON

DIGITAL MARKETING AND APPLICATION PACKAGES

AT

DE PROFESSIONAL WATER

OKE AGA AREA, YAGBA WEST, BENIN, EDO STATE

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SUBMITTED TO:

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REPORT OVERVIEW

This report details the industrial training experience gained during the Student Industrial Work Experience Scheme (SIWES) conducted at DE Professional Water. The report is divided into five chapters:

- Chapter One provides an introduction to SIWES, detailing its background and objectives.
- Chapter Two describes the establishment of attachment, including its location, history, objectives, and organizational structure.
- Chapter Three focuses on the student's specific involvement in various sections and units within the organization.
- Chapter Four discusses the industrial experience, highlighting key lessons learned in Pure Water Manufacturing
- Chapter Five presents a summary of attachment activities, problems encountered, and recommendations for improving the SIWES scheme.

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CHAPTER ONE

INTRODUCTION

1.1 Background of SIWES

The Student Industrial Work Experience Scheme (SIWES) is a crucial industrial training program introduced in Nigeria to bridge the gap between theoretical knowledge acquired in classrooms and practical skills required in the workforce. Established in 1973 by the Industrial Training Fund (ITF), SIWES was created to address the lack of adequate practical experience among graduates of tertiary institutions in the technical and applied sciences. This initiative has since become an integral part of the curriculum for students in universities, polytechnics, and colleges of education across Nigeria.

The need for SIWES arose from the recognition that many Nigerian graduates, especially in technical and vocational disciplines, lacked the hands-on experience and industrial exposure needed to excel in their respective fields. Employers had often expressed dissatisfaction with the practical competence of graduates, citing a disconnect between the skills learned in school and the requirements of the job market. This led to a concerted effort by the Nigerian government, educational institutions, and industries to design a program that would prepare students for the challenges of real-world work environments.

SIWES is structured to provide students with the opportunity to gain practical work experience in industries related to their fields of study. By participating in SIWES, students are exposed to workplace culture, operational procedures, and the application of theoretical concepts to solve real-world problems. The program fosters collaboration between educational institutions and industries, ensuring that students receive the necessary mentorship and training from professionals in their respective fields.

1.2 The objectives of SIWES are multifaceted and aim to achieve the following:

i. **Practical Exposure:** To provide students with practical knowledge of industrial operations and processes, bridging the gap between classroom learning and real-world application.

ii. **Skill Development:** To enhance the technical, interpersonal, and problem-solving skills of students, making them more competent and employable.

iii. **Professional Ethics:** To inculcate workplace ethics, discipline, and professionalism in students.

iv. **Technology Transfer:** To expose students to modern tools, technologies, and practices relevant to their fields of study.

v. **Industry-Institution Linkage:** To strengthen the relationship between educational institutions and industries, promoting collaboration and mutual growth.

vi. **Career Preparation:** To prepare students for their future careers by providing them with firsthand experience in their chosen fields.

CHAPTER TWO

DESCRIPTION OF THE ESTABLISHMENT OF ATTACHMENT

2.1 Location and Brief History of Establishment

The establishment where I undertook my SIWES program is DE Professional Water located at Oke Aga Area, Yagba West, Benin, Edo State. This strategic location within the city makes it easily accessible and well-positioned to serve both individual and corporate clients seeking for better refreshment.

DE Professional Water was founded with the primary goal of providing innovative region. It is widely recognized for its commitment to fostering the technical skills of young professionals and students through comprehensive training programs and real-world project involvement.

The company's operations are driven by a mission to bridge the gap between academic learning and practical application. By offering hands-on experience and exposure to modern tools and technologies, DE Professional Water has consistently contributed to the professional development of students and professionals. Its reputation for excellence has attracted a wide range of clients and students, making it a dynamic and innovative center for technological advancement.

The history and achievements of DE Professional Water reflect its dedication to empowering individuals and organizations through. Its emphasis on quality, innovation, and practical learning continues to make it a preferred destination for students undergoing industrial training and professionals seeking skill enhancement.

2.2 Objectives of the Establishment

The primary objectives of the establishment where I underwent my SIWES program, DE Professional Water, are as follows:

i. **Skill Development and Training:** One of the core objectives is to equip students and trainees with practical skills and knowledge in digital marketing, web development, and application packages like Water Purification and Laboratory Testing of water. This aligns

with the company's mission to bridge the gap between theoretical knowledge and real-world applications.

ii. **Promotion of Technology Awareness:** DE Professional Water strives to promote awareness and adoption of modern technological tools and best practices among individuals and organizations.

iii. **Enhancement of Workforce Competence:** By providing hands-on training and mentorship, the company seeks to improve the overall competence of the workforce in the technology sector.

iv. **Support for Academic and Professional Growth:** The establishment is committed to fostering academic and professional development by offering students an opportunity to gain practical experience and exposure to industry standards.

v. **Contribution to National Development:** Through its various activities and training programs, the company contributes to the technological advancement and economic growth of the region and the nation as a whole.

2.3 Organizational Structure

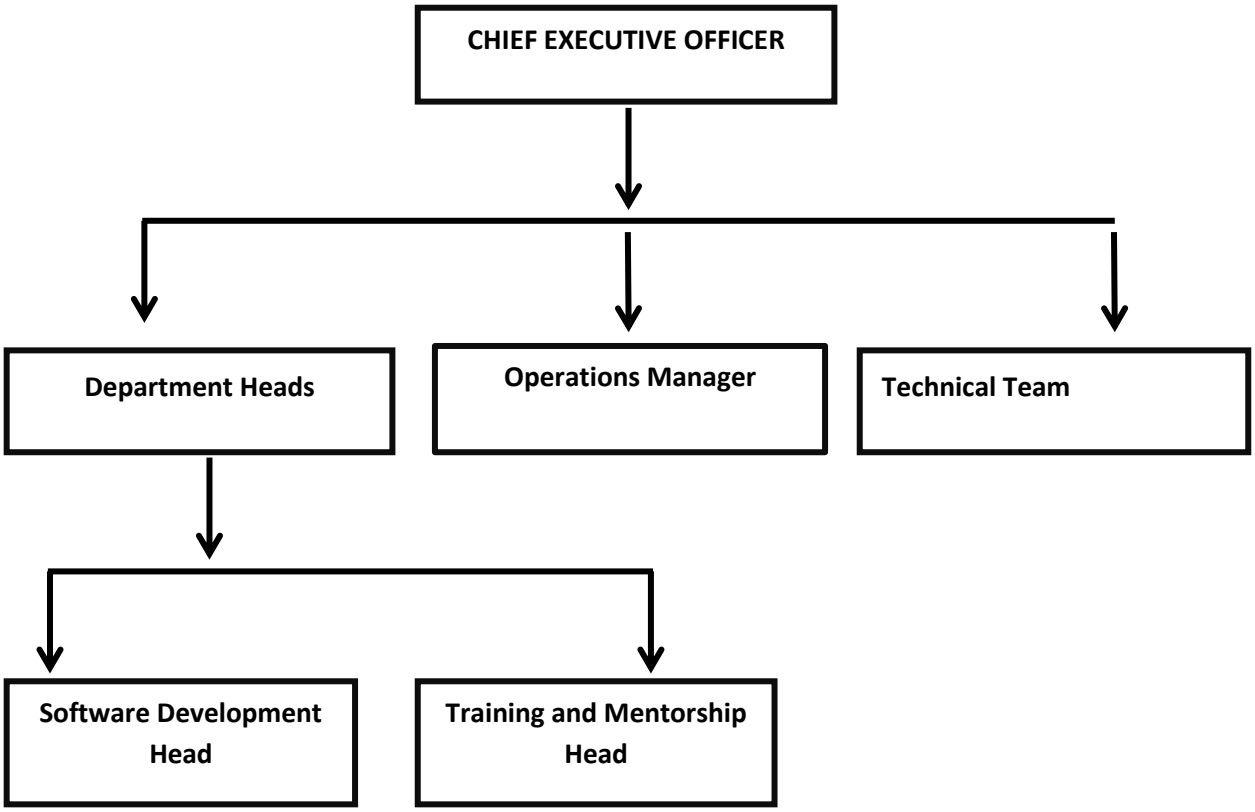

Figure 1. Organizational structure of the company

2.4 The Various Departments/Unit in the Establishment and their Functions

The organizational structure of DE Professional Water is hierarchical and designed to ensure smooth operations and efficient workflow. Below is the structure of the organization:

1. **Chief Executive Officer (CEO):**
    - Responsible for overall decision-making and strategic direction of the company.
2. **Operations Manager:**
    - Oversees daily activities and ensures project alignment with company goals.
3. **Department Heads:**
    - **Software Development Head:** Leads the software engineering and web development team.

- **Training and Mentorship Head:** Manages all training sessions and student mentorship activities.
- **Administrative Head:** Supervises office operations and staff welfare.

4. **Technical Team:**
    - Comprises software developers, web designers, and technical support staff.

CHAPTER THREE

3.1 STUDENT SPECIFIC INVOLVEMENT IN VARIOUS SECTION/UNIT.

During my SIWES program at DE Professional Water, I was actively involved in multiple sections and units, where I gained valuable hands-on experience and practical knowledge. Below is a detailed account of my specific involvement:

1. WATER PURIFICATION PROCESS:

The water purification process in a pure water factory involves several stages to ensure that raw water is safe for drinking. First, water is sourced from boreholes, wells, or municipal supplies and stored in a reservoir. It then undergoes **filtration**, where coarse filters remove large particles, and activated carbon filters eliminate chlorine, bad odors, and organic impurities. Next, the water passes through **micron filters** to remove smaller sediments before entering the **reverse osmosis (RO) system**, which uses a semi-permeable membrane to eliminate dissolved salts, heavy metals, and microorganisms. After filtration, **disinfection** is carried out through **UV sterilization**, where ultraviolet light destroys bacteria and viruses, and **ozonation**, which further purifies the water while improving taste and freshness. Some factories also use **chlorination** in small amounts to prevent microbial growth. Finally, the water undergoes **final filtration and polishing** before being sent to automatic **bottling and packaging machines**, where it is sealed, labeled, and stored for distribution. This entire process ensures that the final product meets **health and safety standards**, making it safe for consumption.

2. QUALITY CONTROL & LABORATORY TESTING:

Quality control and laboratory testing in a pure water factory ensure that the produced water meets health and safety standards before distribution. The process begins with **physical tests**, such as checking the water's clarity, color, and odor, to ensure it is visually and sensorially acceptable. **Chemical analysis** is conducted to measure the pH level, total dissolved solids (TDS), and the presence of minerals, chlorine, fluoride, nitrates, and heavy metals to ensure they are within safe limits. Additionally, **microbiological testing** is performed to detect harmful bacteria like **E. coli, coliforms, and other pathogens** that could cause contamination. Regular sampling is done at

different production stages, including after filtration, disinfection, and final bottling, to maintain consistency and prevent contamination. Factory workers also test the **packaging materials**, ensuring that bottles and sachets are sterilized and properly sealed to prevent external contamination. All test results are recorded and monitored to ensure compliance with **regulatory bodies such as NAFDAC and SON**. By implementing strict quality control and laboratory testing, the factory guarantees that the pure water is **safe, clean, and of high quality** for consumers.

3. MACHINE OPERATION & MAINTENANCE:

Machine operation and maintenance in a pure water factory are essential to ensure smooth production, efficiency, and product quality. The process involves operating various machines such as **filtration systems, reverse osmosis units, UV sterilizers, ozone generators, filling and sealing machines, and packaging equipment**. Workers are trained to monitor these machines, ensuring they function correctly without malfunctions that could affect water quality or production speed. Regular maintenance is performed, including **cleaning filters, checking pipes for blockages, lubricating moving parts, and inspecting seals** to prevent leaks or contamination. Electrical and mechanical components are also examined to prevent unexpected breakdowns. In case of faults, minor repairs are handled on-site, while major technical issues may require specialized technicians. Preventive maintenance schedules are strictly followed to prolong machine lifespan and maintain high efficiency. Proper handling and routine servicing of machines help minimize downtime, reduce operational costs, and ensure that the factory consistently produces **safe, high-quality drinking water** for consumers.

4. PACKAGING & BOTTLING PROCESS:

The **packaging and bottling process** in a pure water factory is a crucial stage that ensures purified water is hygienically sealed and ready for distribution. First, the cleaned and sterilized **bottles or sachets** are prepared for filling. The purified water, after passing through final filtration, is directed into an **automated filling machine**, which accurately dispenses the required volume into each bottle or sachet. The filled containers then move to the **sealing station**, where they are tightly sealed using heat or pressure to prevent leaks and contamination. For bottled water, **labeling machines** apply branded labels with important details such as the production date, batch number,

and expiration date, ensuring traceability and compliance with regulatory standards. The finished products are then **quality-checked** to confirm proper sealing and labeling before being packed into cartons for easy transportation. Once packaged, the bottled or sachet water is stored in a **clean and dry warehouse**, ready for distribution to consumers. This process ensures that the water remains **safe, fresh, and free from external contamination** until it reaches the final consumer.

5. HEALTH & SAFETY PRACTICES:

Health and safety practices in a pure water factory are essential to maintaining hygienic conditions, ensuring worker safety, and preventing contamination of the final product. Employees must follow strict **personal hygiene protocols**, such as wearing protective gear, including gloves, hairnets, face masks, and clean uniforms, to avoid direct contact with purified water.

6. BUSINESS AND ADMINISTRATIVE EXPERIENCE:

The **business and administrative experience** gained in a pure water factory involves managing operations, ensuring efficiency, and maintaining compliance with industry regulations. This includes overseeing **inventory management**, where raw materials such as bottles, sachets, and filtration chemicals are tracked to prevent shortages or excess stock. Administrative tasks also cover **customer relations and sales management**, ensuring that orders are processed, deliveries are scheduled, and clients are satisfied. Additionally, financial aspects like **record-keeping, expense tracking, and budgeting** are crucial in maintaining profitability.

7. PROBLEM-SOLVING & TEAMWORK:

Problem-solving and teamwork are essential skills in a pure water factory to ensure smooth operations, efficiency, and product quality. Employees often encounter challenges such as **machine malfunctions, water contamination issues, supply shortages, or production delays**, requiring quick thinking and effective solutions. Problem-solving involves troubleshooting faulty equipment, identifying quality control issues, and implementing corrective actions to prevent disruptions in production.

CHAPTER FOUR

4.1 INDUSTRIAL EXPERIENCE ON DIGITAL MARKETING, MICROSOFT WORD, AND POWERPOINT

My industrial experience at DE Professional Water provided me with extensive exposure to digital marketing, Microsoft Word, and PowerPoint. Each of these areas contributed significantly to my professional growth and technical expertise.

1. Water Purification Process

You will gain insights into how raw water is treated to make it safe for drinking. Key purification stages include:

- **Filtration** – Removing large particles and sediments.
- **Coagulation and Flocculation** – Adding chemicals to clump small particles together for easier removal.
- **Reverse Osmosis** – Using a semi-permeable membrane to remove impurities.
- **UV Sterilization & Ozonation** – Killing bacteria and viruses.
- **Chlorination** – Adding chlorine to prevent microbial growth.

2. Quality Control & Laboratory Testing

You may work in the factory's quality control department, where you will learn:

- **Water pH Testing** – Ensuring the pH falls within the recommended range.
- **Microbial Analysis** – Testing for bacteria like E. coli and coliforms.
- **Total Dissolved Solids (TDS) Measurement** – Checking for minerals and contaminants.
- **Turbidity Testing** – Measuring clarity and particle presence.
- **Chemical Analysis** – Testing for nitrate, fluoride, chlorine, and heavy metals.

3. Machine Operation & Maintenance

You will gain experience working with machines used in water production, such as:

- **Filtration systems** – Regular cleaning and maintenance.
- **Filling & Sealing Machines** – Ensuring proper operation of automated packaging systems.
- **Blowing Machines** – Producing plastic bottles from PET preforms.
- **Ozone Generators & UV Sterilizers** – Learning maintenance and troubleshooting

4. Packaging & Bottling Process

You will observe or participate in:

- **Bottle Washing & Rinsing** – Ensuring containers are sterile before filling.
- **Automatic & Manual Bottling** – Filling sachets or bottles with purified water.
- **Sealing & Labeling** – Using machines to seal and add product labels.
- **Batch Coding** – Assigning dates and codes for traceability.

5. Health & Safety Practices

A key part of working in a pure water factory is learning about:

- **Personal Hygiene Standards** – Wearing gloves, hairnets, and clean uniforms.
- **Factory Sanitation Procedures** – Regular cleaning and disinfection.
- **Hazardous Chemical Handling** – Safe usage of chlorine and cleaning agents.
- **Workplace Safety Regulations** – Adhering to **NAFDAC** and **SON** (Standards Organisation of Nigeria) guidelines.

6. Business & Administrative Experience

Depending on your role, you might also gain knowledge of:

- **Inventory Management** – Tracking raw materials, bottles, and packaging supplies.
- **Customer Service & Distribution** – Assisting with sales and deliveries.
- **Regulatory Compliance** – Understanding how factories comply with NAFDAC regulations.
- **Documentation & Reporting** – Recording production data, test results, and machine maintenance logs.

7. Problem-Solving & Teamwork

During your SIWES, you will also develop **soft skills** such as:

- **Troubleshooting Equipment Issues** – Learning to identify and fix minor machine faults.
- **Working as a Team** – Collaborating with technicians, engineers, and factory workers.
- **Time Management** – Understanding production deadlines and efficiency in operations.

The industrial experience provided by DE Professional Water allowed me to apply theoretical experience in a pure water factory expose me to **industrial water treatment processes, quality control, safety regulations, and machine operations**. This hands-on training help me apply theoretical knowledge from school in a real-world setting, preparing me for future careers in **manufacturing, water treatment, food safety, or environmental management**.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of Attachment Activities

During my attachment at DE Professional Water, I engaged in various activities that provided hands-on experience in Water Purification Process and Quality Control Laboratory Testing such as Health Safety and Machine Operation & Maintenance. **5.2 Problems Encountered During the Program:**

1. **Limited Access to Advanced Tools:** At times, I faced restrictions in accessing premium tools and software required for some advanced digital marketing tasks.
2. **Time Constraints:** Balancing multiple tasks within the limited time frame of the program was challenging.
3. **Technical Challenges:** Occasional technical glitches during training sessions disrupted progress and required troubleshooting.
4. **Adaptation to Professional Environment:** Adjusting to the expectations and pace of a professional work environment took some time initially.

5.3 Suggestions for the Improvement of the Scheme:

1. **Provision of Advanced Resources:** The inclusion of premium software and tools would enhance the learning experience and better prepare students for industry demands.
2. **Extended Duration:** Increasing the duration of the SIWES program would allow students to delve deeper into complex projects and gain more comprehensive knowledge.
3. **Structured Mentorship:** Assigning dedicated mentors to each student could provide personalized guidance and support throughout the program.
4. **Feedback Mechanisms:** Establishing regular feedback sessions would help students identify areas of improvement and ensure continuous learning.

By addressing these recommendations, the SIWES program can further strengthen its role in preparing students for successful careers in their respective fields.