



PROGRESS REPORT



Oblique View of the Factory Building and Powerhouse; January 2021

AS OF JANUARY, 2021

1.0 INTRODUCTION

Kairuki Pharmaceuticals Industry Limited (KPIL) is currently installing state-of-the art machinery for a pharmaceuticals factory in Kibaha District, Coast Region, Tanzania worth an investment of 16 million USD. Expected to come on stream in the first half of 2021, the factory will feature two production lines with annual production capacity ranging between 57 – 64 million units. Initially, the KPIL factory will involve itself with the production of parenteral (IV/Intravenous fluids) based pharmaceutical products. The company is slated to establish a strong presence for its products not only in Tanzania but also in the African sub-continent in general during the next three years. The Project is being implemented concurrently into two phases:

a) **Building structures**

Petra Construction Co. Ltd was contracted under Design and Build for details designs and construction of the following structures:

- | | |
|-----------------------------------|--------------------------------------|
| (i) Factory warehouse | (vii) Power House |
| (ii) Storage Godown | (viii) Boiler |
| (iii) Office Block | (ix) Waste Water Treatment |
| (iv) Staff Hostel & Canteen | (x) Power House |
| (v) 1000m ³ Water Tank | (xi) Outdoor Change rooms and shower |
| (vi) Boundary wall | (xii) Guard post |

b) The internal factory design, pharmaceutical machinery and Clean Room production, installation validation and training carried out by IVEN PHARMATECH ENGINEERING COMPANY of Shanghai China under turnkey arrangement.

1.1 Phase I: Contract Information

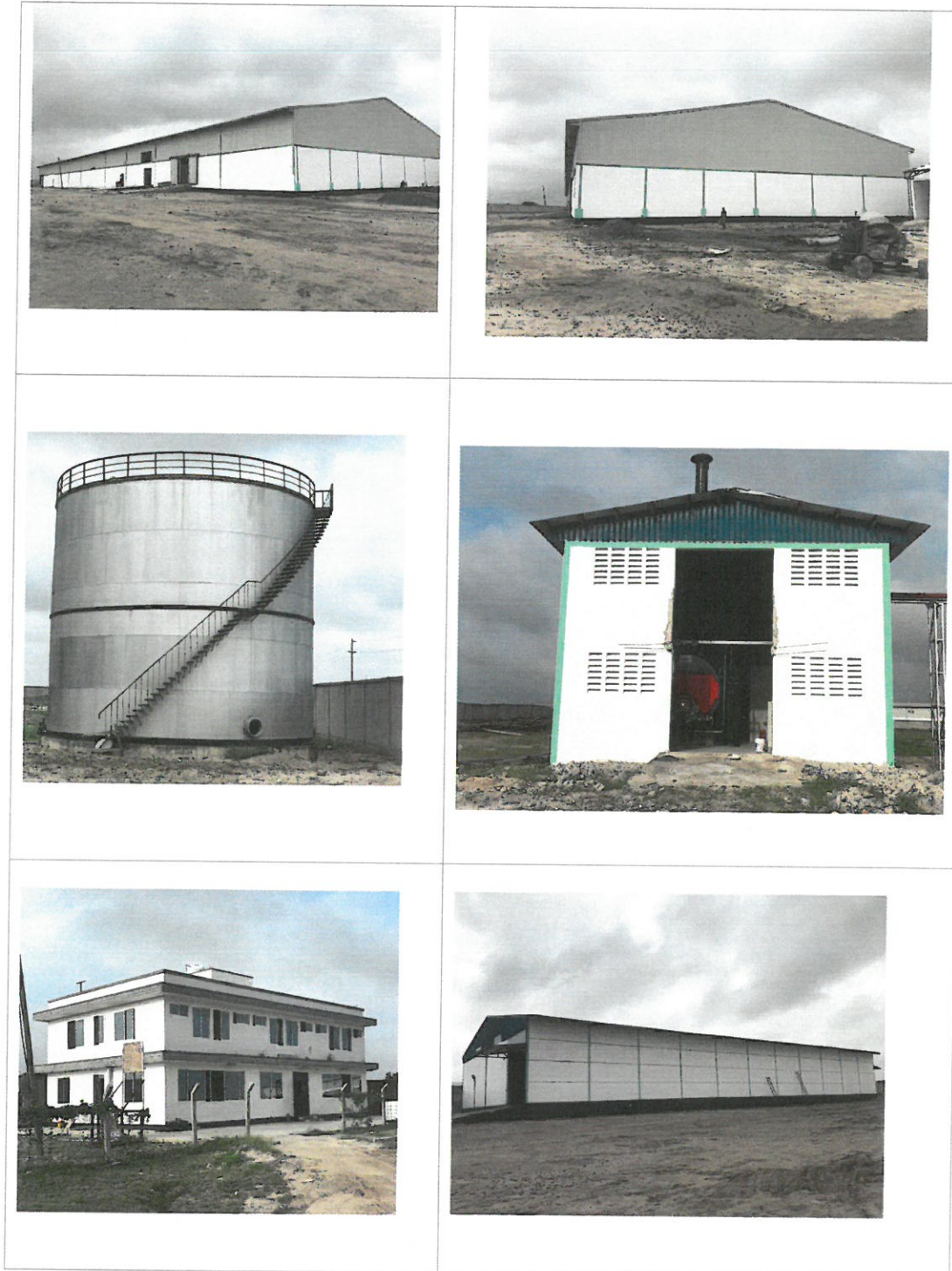
Employer	Kairuki Pharmaceuticals Industry Ltd
Designer & Builder	Petra Construction Co. Ltd
Site Possession Date	3 rd April 2018
Commencement Date	17 th April 2018
Contract Period	36 Weeks
Original Date of Practical Completion	16 th December 2018
Defects Liability Period	12 months
Revised Date of Practical Completion	10 th March 2020

Figure 1: Contract Particulars

1.2 Works Progress

Building	Works in Progress	Percentage Progress
Factory Warehouse	Finishing works on progress	90%
Storage Godown	Finishing works on progress	90%
Office Block	Finishing works on progress	90%
Hostel & Cafeteria	Finishing works on progress	95%
Waste Water Treatment Tank	Foundation works	5%
Boiler House	Finishing works on progress	85%
Changing Rooms (2nr)	Finishing works on progress	95%
Fence & Gates	Skimming and paint works	85%
1000m ³ Water Tank	Interior paint	85%
Power House	Roofing and gas piping	75%
Security House	Skimming and paint works	80%

Figure 2: KPIL Superstructure construction progress in pictures



2.1 PRODUCTS INFORMATION

Prospective machines will be phased, starting with 6000 Polypropylene Bottles (PP Bottle) per hour for 500 milliliters and 7000 bottles per hour for 100 milliliters.

2000 non pvc soft bags per hour have been accommodated in the design for future expansion.

Initially the manufactured large volume fluids shall include; Sodium Chloride 0.9%, Ringers Lactate, Dextrose Saline, Dextrose 5% and Mannitol. Other products to be manufactured in the

plant will include smaller volume (100ml) parenteral medicine, i.e Paracetamol, Metronidazole, Fluconazole and Ciprofloxacin during the first phase and medical products in the second phase.

2.2 INSTALLATION OF MACHINES

Machine installation started in September 2020 against scheduled time of February 2020 due to corona pandemic. Engineers from IVEN PHARMATECH ENGINEERING COMPANY are carrying on with machines installation at 65% completion. Ongoing works involves installation of:

- i. Production line machines
- ii. Water filtration system machines and sterilizer
- iii. Air Handling unit (AHU) and Air compressor systems
- iv. Light fittings, appliances with their respective power system
- v. Water supply system and fire alarms
- vi. Sterile area and clean room
- vii. Laboratory machines and testing instruments
- viii. Eight tons boiler system
- ix. Four gas generators, 350Kw each with their synchronization panel in place, cable and pipe networking on progress
- x. Factory main power systems
- xi. Pharmaceuticals waste water system





Figure 2 installation of 8tons boiler

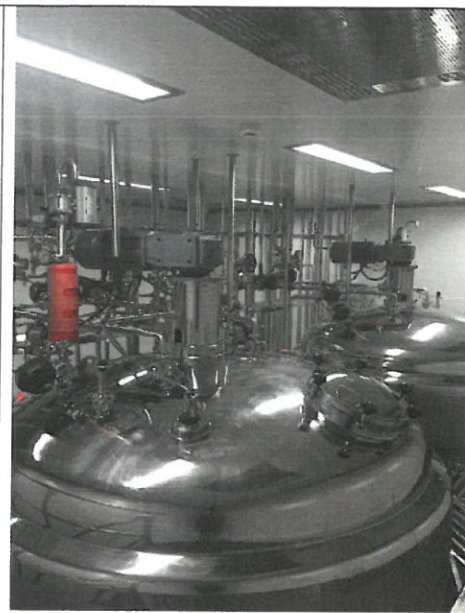


Figure 3 Solution preparation tank at site

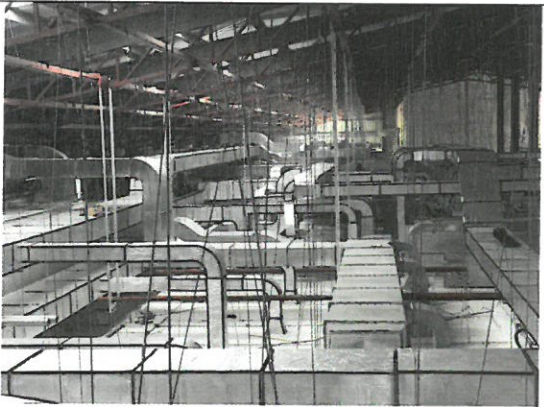


Figure 4 AHU ducts works on progress

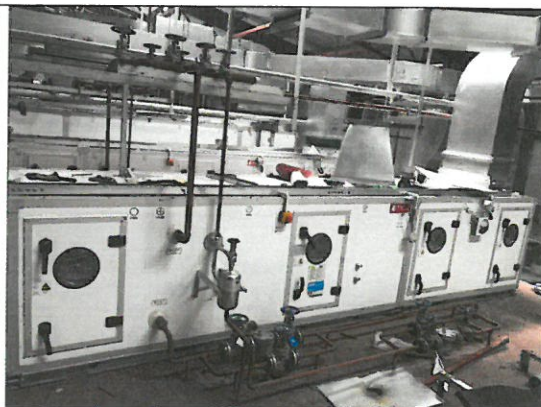


Figure 5: Laboratory AHU at site

2.3 PROJECT COMPLETION

Installation of machines, testing, commissioning and validation will be completed in April 2022 thereafter registration for Good Manufacturing Practice (GMP). As per attached works programme pending works are:

2.4 CHALLENGES

In the process of establishing a pharmaceutical factory in Zegereni area, Coast Region, we have had to contend with the following challenges:

(i) Effect of Corona COVID -19

Corona pandemic has delayed the project for almost half a year, as machine installation was planned since February 2020 but started in September 2020 due to lockdown from various countries, flights limitations and international.

(ii) Non-existent and or inadequate Infrastructure.

The nearly 5 km dirt road, that connects our factory to the main road, becomes impassable when ferrying construction materials, equipment and machines especially during the rainy season. This impeded progress, especially during the transportation of highly sensitive and fragile equipment slated for transportation to the site between March and June.

(iii) Lack of steady and adequate power supply.

Though regionally designated as an industrial area, the Zegereni area, in which our factory is located and which already boasts the presence of more than 15 factories, does not have steady and adequate power supply.

(iv) Lack of natural gas

There are four natural gas generators at site with 350Kw each but can't operate as negotiation and discussion are going on with TPDC for natural gas. The pending matter has led to another importation of diesel as backup which will in turn requires more than twelve weeks for production and shipping.

(v) Lack of DAWASA services

The entire Zegereni industrial area including our factory lacks reliable and sufficient DAWASA services in form of clean water supply as well as liquid sewerage management infrastructure for the entire area involving a common **sewerage treatment** plant.

(vi) Clearance of Pharmaceuticals Machines

There were substantial delays on clearance of various machines like gas generators, Air handling unit (AHU), pharmaceuticals clean room materials which was caused by mis-conception of respective items hence their harmonized system (HS) codes. On top of time delays was a huge tax which was out of project budget.

(vii) Challenges with regard to securing loans from our local banks.

Most our local banks prefer to lend their money to ongoing/established projects rather than start-ups or green field projects, especially high-risk pharmaceuticals manufacturing projects in their attempt to minimize risk.