The STP is located underground along Villamor Drive (Back of Medicine Building) with an area of 575 square meters and has full capacity of 1250 CMD. It is equipped with a dedicated genset in order to operate continuously even during brownouts. For the safety of operators the plant is equipped with ventilation blowers to cool the equipment and exhaust ventilation blowers to remove fumes / gasses inside. The exhaust system is provided with activated carbon filters to absorb the smell of the waste gasses.

The SBR FLOW PROCESS

**ANNEX A: PROPOSED SBR PROCESS FLOW DIAGRAM**

02

AIR BLOWERS 1.2 & 3

02

02

CL2 (OPTIONAL)

EQUALIZATION TANK

SBR 1&2

V-WEIR MEASURING

SCREENING

RAW WASTE WATER

AEROBIC DIGESTER

EXCESS SLUDGE FOR TRUCK OUT OR FURTHER TREATMENT BY FILTER PRESS/DECANTER (OPTIONAL OFFER)

CLEAR WATER POND & DISINFECTION TANK

WATER METER

FINAL EFFLUENT TO CITY DRAIN

The Primary Treatment

1. Primary Tank (Lift Station)

The primary tank is where the raw waste water is directed. It is equipped with stainless screen 1” Mesh to filter large solids, rags tissues, napkins, plastics which are flashed in the toilets.

1. Influent Channel

The waste water is passed through the influent channel by natural flow or by a lift pump. A motorized bar screen is equipped here to remove all undesirable solids and a rectangular v-weir to measure the volume of waste water entering the plant.

1. The waste water is directed to the equalization tank for primary aeration and neutralization before the final processing.
2. The Main Treatment

The main treatment is controlled by a programmable logic controller PLC, The SBR process or sequencing batch reactor process. The SBR accomplishes equalization, aeration and clarification in a time sequence in the reactor basin. A single cycle for each reactor consists of five discrete periods, fill, react, settle, draw and idle. Varying the operation strategy enables aerobic, anaerobic or anoxic conditions to be achieved. Precise control of this condition allows organism selection to take place the proliferation of specific desirable microorganisms is encouraged while growth of undesirable microorganisms is inhibited.

* ANOXIC FILL PHASE

The reactor is filled with waste water. A combination of anoxic and aerated fill is done in 10 and 30 minutes respectively.

* REACT PHASE

Aeration continues in 60 minutes the full reactor until complete biodegradation is achieved.

* SETTLE PHASE

The aeration is turned off 60 minutes and perfect quiescent conditions allow the biomass to settle, leaving the treated supernatant above.

* DECANT PHASE

Treated effluent is removed within 18 minutes through the 3 floating decanters.

* IDLE PHASE

The reactor waits to receive 20 minutes influent flow.

1. The Post Treatment

The clear water tank received the effluent from the reactor thru the floating decanters and here the effluent is treated with chlorine to reduce the bacteria content and coastic soda is added to correct the PH of the effluent. The desired PH and coaliform level is 7 to 9 and 10x103 respectively.

1. Simultaneous pumping of effluent to the accumulator storage tanks outside the STP and before recycling the effluent to passed thru the multimedia filters to lessen or remove the odor. And achieve better quality of water. The effluent is now ready to reuse or recycle.