



VENTILAIR ENGINEERS

(AN ISO 9001:2008 CERTIFIED COMPANY)

SEWAGE TREATMENT PLANT OPERATION & MAINTENANCE

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SYSTEM DESCRIPTION

1.1 THIS SEWAGE TREATMENT PLANT (STP) IS WORKING ON MBBR (MOVABLE BIO BED REACTOR) PROCESS

1.2 SEWAGE WATER IS COLLECTED IN A UNDER GROUND TANK IN SEQUENCES OF SCREENING ,OIL & GREASE TRAPING COLLECTION & EQUALISATION TANKS.

1.3 STP SYSTEM IS COMPRISES OF

- MS FABRICATED REACTOR WITH CLEARIFIER(TUBE SETTLING) ARRANGEMENT DULY PLATED FRP COATING IN SIDE THE REACTOR.
- REACTOR FILLED WITH BIO PACK MEDIA & TUBE PACK MEDIA IN STP REACTOR.
- PVC HOLDING /FILTER FEED TANK.
- MULTI GRADE SAND FILTER (MGF).
- ACTIVATED CARBON FILTER(ACF).
- HYPO DOSING (CLORINE DOSING) ARRANGEMENT(0-6L/H)
- SEWAGE TRANSFER PUMP SET.
- TWIN LOBE AIR BLOWERS.
- UV TREATMENT.
- ON LINE PH METER.
- ON LINE WATE FLOW METER.
- ELECTRICAL CONTROL PANEL.
- PVC/GI PIPES,VALVES & FITTINGS ETC.

OPERATION & MAINTENANCE MANUAL OF STP UNIT.

SYSTEM START AND OPERATION

PRE-START-UP CHECKS

BEFORE STARTING THE STP UNIT FOLLOWING CHECKS ARE TO BE CARRIED OUT:

- * CHECK THAT ALL BOLTS AND NUTS IN EACH CONNECTION ARE PROPERLY TIGHTENED.
- * ROTATE THE TWIN LOBE AIR BLOWER & MOTOR BY HAND TO CONFIRM THAT ROTATING PARTS ARE MOVING FREELY.
- * CHECK THAT ALL ELECTRICAL CONNECTIONS ARE PROPERLY MADE.
- *CHECK MOTORS DIRECTION IS O.K.
- *CHECK THAT NUMBER OF V- BELTS PROVIDED ARE TIGHT .
- * CHECK PUMP IS FILLED WITH WATER AND PUMP VALVES IN OPEN POSITION AS PER THEIR USE -----

ALL PUMPS & AIR BLOWERS ARE IN SETS OF TWO – ONE IS WORKING & SECOND IN IDLE POSITION .

- * IF AIR BLOWER & PUMPS ARE WORKING IN TWO HOUR ALTERNATELY IT WILL BE BEST TO MOTORS LIFE.

SAFETY CONSIDERATIONS

- ✓ USE SAFETY SHOES OR BOOTS WITH NON-SLIP SOLES.

- ✓ WEAR PERSONAL PROTECTIVE EQUIPMENT AND CHEMICAL RESISTANT

- ✓ CLOTHING TO AVOID EXPOSURE OF SKIN OR EYES TO CORROSIVE AND/OR POLLUTED

SOLIDS, LIQUIDS, GASES OR VAPOURS.

- ✓ CHECK PUMP MECHANICAL SEAL COOLING PIPE LINE VALVES ARE IN

OPEN POSITION PROPERLY

- ✓ MCB PROBIDED IN UNIT IN SIDE

- ✓ NO MAINTENANCE ACTIVITY SHOULD BE PERFORMED ON FANS/PUMP

DURING RUNNING POSITION.

- ✓ NO TAMPERING OF DESIGNED FUSES / RELAYS SHOULD BE DONE

MAINTENANCE

ROUTINE MAINTENANCE

Routine maintenance of different equipment and accessories should be performed as mentioned below to get long lasting result of the system.

DAILY : 'D' , WEEKLY : 'W', MONTHLY : 'M', YEARLY : 'Y'

<u>WORK TO BE DONE</u>	<u>FREQUENCY</u>
1. BLOWER & PUMPS ON & OFF AS PER ELECTRIC CITY BREAKDOWN	---
2. TWIN LOBE BLOWER RUN AFTER PUMP START	---
3. EXTRA TREATED WATER DRAIN OUT	D
4. CHECK MECHANICAL SEAL COOLING	3 D
5. BEARING IS ABNORMALLY HOT	2W
6. CHECKING OF WATER LEVEL	D
7. LUBRICATION OF TWIN LOBE BLOWER & MOTOR BEARINGS	3 M
8. LUBRICATION OF WATER PUMP BEARINGS	3 M
9. CHECKING OF ELECTRICAL CONTACTORS & FUSES	M
10. PIPEING & PVC VALVE CHECK	M
11. ALL DOSING TANKS	15 D
12. DRAIN OUT FROM HOLDING TANK	M
13. MULTY MEDIA ACTIVATED CARBON FILTER BACK WASH FOR 10 MINUTS	3 D
14. CLEANING OF UNDER GROUND TANKS	6 M
15. TOOK SLEDGE FROM S.D.B. ALTERNATELY	D
16. REPLACE /REFILLING OF MM. FILTER	Y

PREVENTIVE MAINTENANCE WITH SHUT DOWN

- ❖ REPLACEMENT OF WORN V-BELTS

- ❖ THOROUGH CHECKING OF TWIN LOBE AIR BLOWER & MOTORS BEARING AFTER REMOVAL AND REPLACEMENT OF THE SAME IS REQUIRED

- ❖ CLEANING OF SATTELING TANK .

- ❖ TIGHTENING OF FOUNDATION BOLTS / FIXING BOLTS

- ❖ REPLACEMENT OF GASKETS OF PIPES JOINTS LEAKAGE OCCURRED

- ❖ REPLACEMENT /REPAIR OF FOOT VALVE OF PUMPS IF MALFUNCTIONING.

- ❖ RE PAINT OF ALL MS STRUCTURE IF NEED.

PARTS SPECIFICATION & CONSUMABLES

1. ETP CHEMICAL DOSING TREATMENT

DOSING CHEMICAL	OPTIMUM DOSING PER LITER OF EFFLUENT	ACTUAL QTY. OF DOSING PER LITER OF EFFLUENT
LIME	AS PER REQUIREMENT TO BRING THE PH TO 8.0 – 8.5	200 MG / LITER
ALUM	AS PER REQUIREMENT	400 MG / LITER
POLY ELECTROLYTE	AS PER REQUIREMENT	1.5 MG / LITER

2. AREA REQUIREMENT

The STP will be located in a space as per sewage generation.

3. CHARACTERISTICS OF UTREATED SEWAGE

The characteristics of untreated waste water is usually as follows:

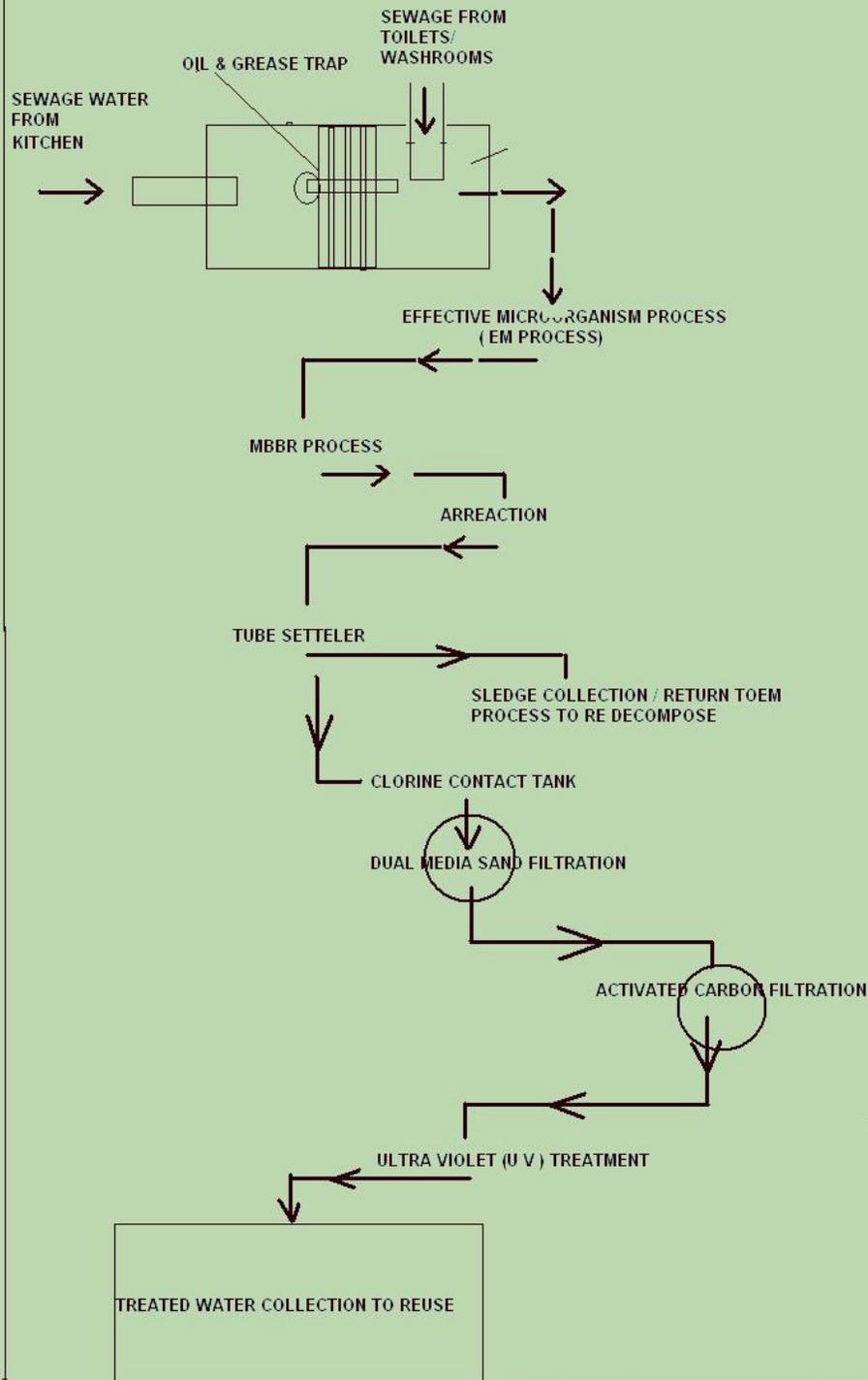
PH	8 to 9
TSS	450 to 800 / MG/LTRS.
BOD	250 to 350 MG / LTRS
COD	300 to 600 MG / LTRS
OIL & GREASE	20 to 30 MG / LTRS
ANIONIC DETERGENT	0.22 to 1 MG / LTRS

4. OUTLET PARAMETERS AFTER TREATMENT

PH	6 to 9
TSS	BELOW 100 MG/LTR
BOD	BELOW 30 MG / LTR
COD	BELOW 150 MG/LTR
OIL & GREASE	BELOW 10 MG / LTR

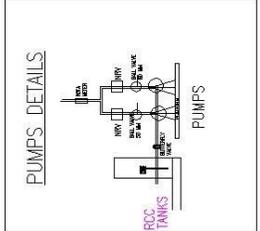
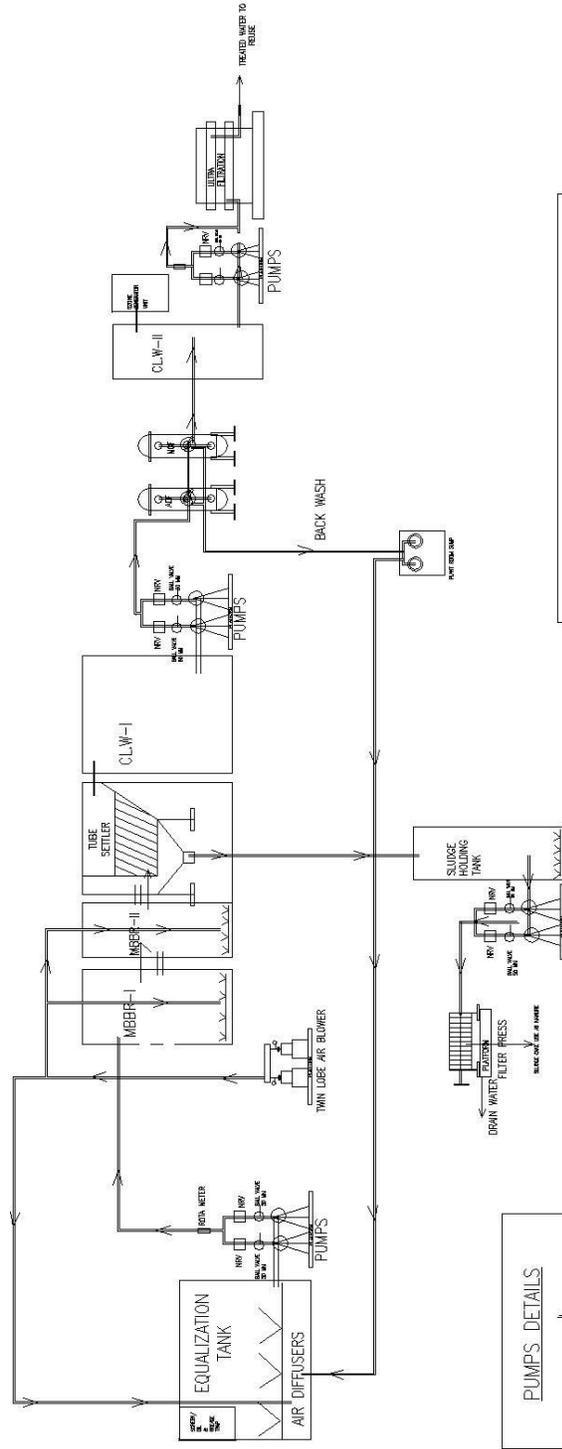
OPERATION & MAINTENANCE MANUAL OF STP UNIT.

SEWAGE TREATMENT PROCESS



SEWAGE TREATMENT PLANT
PROCESS CHART

P & I DIAGRAM OF STP



PREPARED BY
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