

**SDCRI**

**WASTE MANAGEMENT MOU & AGREEMENTS**

**&**

**WASTE RECYCLING PLANTS**

**(STP/WATER TREATMENT PLANT )**

  
**DIRECTOR PRINCIPAL  
SURENDRA DENTAL COLLEGE  
& RESEARCH INSTITUTE  
SRI GANGANAGAR (RAJ )**



## **WASTE RECYCLING SYSTEM**

- **SEWAGE TREATMENT PLANT**
- **WATER TREATMENT PLANT**

  
DIRECTOR PRINCIPAL  
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& RESEARCH INSTITUTE  
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# • SEWAGW TREATMENT PLANT

  
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SRI GANGANAGAR (RAJ)



**SEWAGE TREATMENT PLANT  
EFFLUENT TREATMENTY PLANT**

  
DIRECTOR PRINCIPAL  
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& RESEARCH INSTITUTE  
SRI GANGANAGAR (RAJ)

# OPERATION & MAINTAINANCE MANNUAL

OF

## *SEWERAGE TREATMENT PLANT of 120KLD*

*For*

**VL Foundation Hospital**

**H.H, Gardens, Power House Road, Teh-Ganganagar,  
Sri Ganganagar, Rajasthan**

**Design & Supply and Commissioned By**

**Shubhtech Enviro Engineers**

Regd. Office:- 331-332, 2<sup>nd</sup> Floor, Lodha Complex, Nr. Court Chouraha, Udaipur-Rajasthan -313001  
Ph.:- +91-9461807368, & +91-9782841101, Email:- [praveenjoshi2005@rediffmail.com](mailto:praveenjoshi2005@rediffmail.com) & [praveenjoshi2005@gmail.com](mailto:praveenjoshi2005@gmail.com)

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## FOREWORD

This manual has been prepared mainly to serve as a technical guide to the personnel concerned with operation and maintenance of the Sewage treatment plant for "VL Foundation Hospital" situated at H.H, Gardens, Power House Road, Teh-Ganganagar, Sri Ganganagar, Rajasthan. It is intended to give the basic principles of equipments and process taking place in the various units of the system and the operating procedure in normal as well as abnormal conditions that are necessary to keep the plant in good working condition. It describes various problems that are likely to arise and various remedial measures to be taken along with periodical checks.

  
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## CONTENT

1. INTRODUCTION
2. SEWAGE GENERATION RATE & CHARACTERISTICS
3. DESIGN BASIS
4. TANKS AND ITS VOLUME
5. PROCESS DESCRIPTION
6. STRUCTURAL & CONSTRUCTION DETAILS
7. FACILITY PLAN & OPERATIONAL DETAILS
  - 7.1 SUMP PUMPS AND SEWAGE COLLECTION SUMP
  - 7.2 SAFF TANK
  - 7.3 TUBE SETTLER
  - 7.4 TERTIARY TREATMENT
- 8 DRAWINGS

  
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## 1. INTRODUCTION

VL Hospital, decided to install a Sewage treatment plant for their campus at Sri Ganganagar. In order to conserve water, the treated sewage is to be used for irrigation and recycling etc. The sewage is to be generated from the various activities of Hospital and toilets etc. The sewage flow conditions will be varying throughout the day with the flow peaking in the morning & evening hrs. It is proposed to treat the sewage in a MBBR process, not only to reduce the level of pollution in the wastewater to the limits specified by the Rajasthan Pollution Control Board and can also make it suitable for use in Horticulture & flushing if further tertiary treatment is given by providing filtration plant.

## 2. RAW & TREATED SEWAGE WATER CHARACTERISTICS

S. No.	Parameter	Unit	Raw Sewage	Treated sewage
1.	Flow	m <sup>3</sup> /hr	120 KLD	90-10KLD
2.	pH	-	6.5 - 9.5	6.5 to 8.5
3.	BOD @ 27 °C	ppm	200 - 250	< 20
4.	COD	ppm	450 - 500	< 100
5.	TSS	ppm	250 - 300	< 35
6.	O & G	ppm	30	<5
7.	Phosphate			

## 3. DESIGN BASIS

The major parameters towards basis of design for the STP under reference have been considered as follow:

1. Nature of waste water Domestic Sewage From hospital Activities & Toilets.
2. Flow rate 120 KLD
3. Treatment process MBBR Technology, coarse & fine bubble diffused aeration system and disinfection.

  
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#### 4. TREATMENT SCHEME

The STP will consist of four stages:

##### ≡ **Stage 1: Primary Treatment**

Oil and grease tank, Equalization tank with *coarse & fine bubble diffused aeration system*.

##### ≡ **Stage 2: Secondary or biological treatment**

MBBR Reactor with aeration, Secondary Tube Settler

##### ≡ **Stage 3: Tertiary treatment**

Filter Feed Tank, Pressure Sand Filter, Activated carbon filter, Chlorine/Hypo Dosing System

##### ≡ **Stage 4: Sludge Treatment**

Sludge drying Bed

#### 5. BRIEF PROCESS DESCRIPTION

##### **PRIMARY TREATMENT**

The sewage wastewater will first pass through a screen chamber for removal of floating materials followed by Grit chamber for grit removal. From grit chamber sewage water will be collected into oil and grease Trap the Equalization tank. From Equalization tank, the sewage will flow to the MBBR reactor for Biological Treatment.

##### **SECONDARY (BIOLOGICAL) TREATMENT**

The MBBR reactor oxidizes the organic matter in effluent to  $CO_2$  &  $H_2O$  by the aeration principle. In MBBR reactor PVC UV stabilized plastic media is provided for the attachment of bacteria and growth. This media has large surface area and high voidage ratio. MBBR reactor tank is fitted with no. of air diffusers of suitable capacity to provide necessary dissolved oxygen mixed to the effluent. Twin-Lobe Blowers for oxidation provides the aeration. The biological system has to be operated continuously for at least 20 hours and there by constant feed of Sewage water is required.

The secondary clarifier/tube settler, which designed on low overflow rate, is provided after the MBBR reactor to enable separation of solids. A steep slope is provided in the secondary settling tank to eliminate the need of scrapper mechanism. Acclimatized Bacterial Culture will be added into the MBBR reactor.

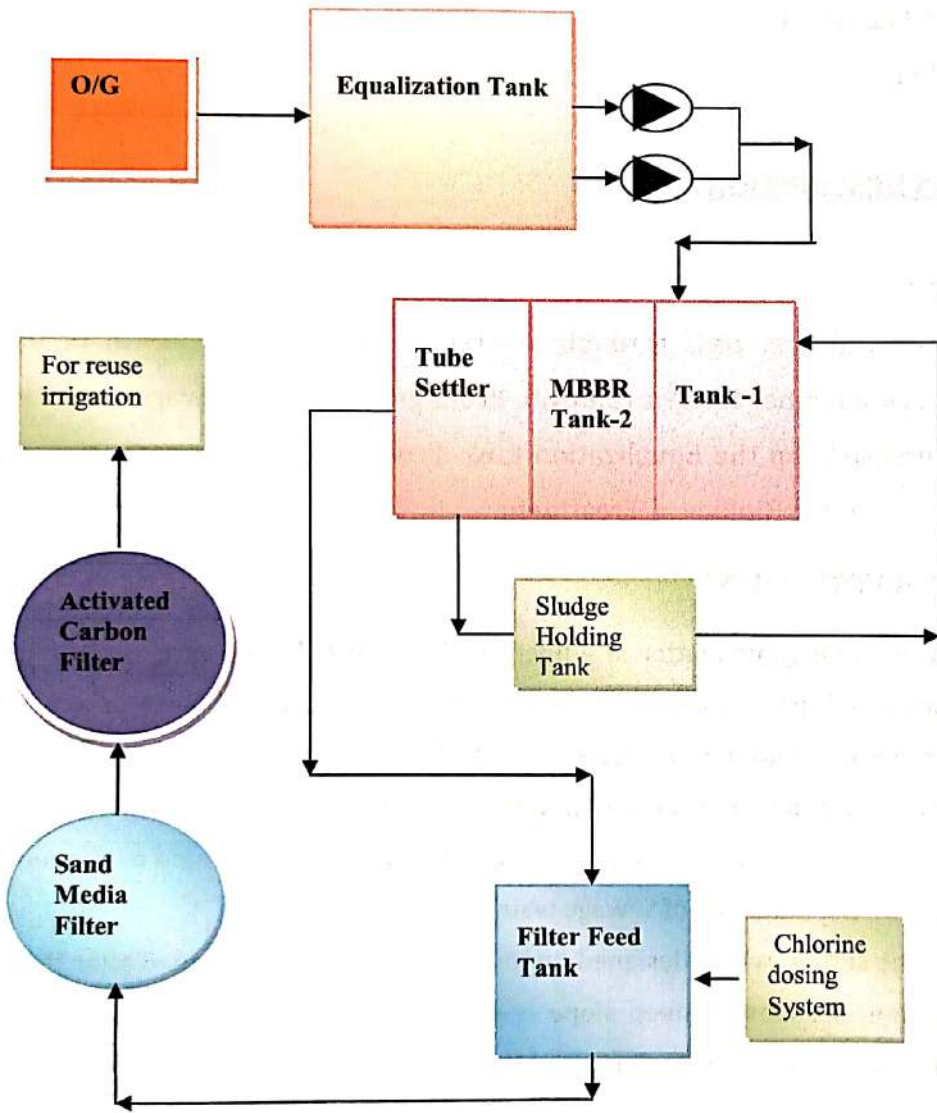
Excess sludge needs to be dewatered and dried for easy disposal. The sludge from the tube settler is collected in sludge drying bed. The dried sludge will be dried & used as organic manure.

The Clarifier water collected from the collection launder of the tube settler is then passed to the Filter Feed tank. The treated sewage water will be given dose of hypo solution for killing of pathogens (Disinfection).

**TERTIARY TREATMENT**

It is necessary to pass the sewage water further through tertiary treatment comprises of filtration with Multigrade Filter for removal of suspended solids then with Activated Carbon filter for removal of trace organic matter, color & odour. Then this treated water will discharge to irrigation/plantation.

**PROCESS FLOW DIAGRAM OF STP:**



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## 6. LIST OF MECHANICAL EQUIPMENTS WITH TECHNICAL DETAILS

The list of the mechanical equipment required for the STP is given below:

S.No	Description	Qty.
<b>PRIMARY TREATMENT</b>		
1.	<b>SEWAGE LIFT PUMP SET</b> Application- To feed Sewage water to MBBR Reactor Type- Centrifugal, Monobloc, horizontal MOC - CI, Make - Kirloskar	2 Nos.
<b>SECONDARY TREATMENT</b>		
2.	Bar Screen	1 Nos.
3.	Oil & Grease	1 Nos.
4.	<b>EQUALIZATION TANK</b> Application - For collection of Raw Water MOC -PVC/UPVC/MSEP Accessories- Complete with piping & valves	1No
5.	<b>COARSE AIR DIFFUSERS FOR EQUALIZATION TANK</b> Application - For providing air in Equalization tank MOC -PVC/PP Type: Coarse	1 Lot
6.	<b>AERATION GRID FOR MBBR REACTOR</b> Application - For providing air in MBBR reactor Accessories- Complete with piping & valves MOC -MSEP/UPVC	1 Lot.
7.	<b>AIR DIFFUSERS FOR MBBR REACTOR</b> Application - For providing air in MBBR reactor MOC - PVC/PP Type: Fine	1 Lot.
8.	<b>MBBR MEDIA</b> <b>Application</b> - For reduction of organic load MOC- PVC UV Stabilized Make : PP Aqua,	1 Lot
9.	<b>MBBR TANK</b> MOC: Civil	1no.
10.	<b>AIR BLOWER WITH ACCESSORIES</b>	2 Nos.

	Application - Supply of air for mixing MOC - CI, Blower make- TMVT Motor make- Crompton Accessories- MS base plate, safety valves, suction filter, silencer, NRV, PRV, ant vibration pad, V belt, Belt guard, Drive and driven pulleys	
11.	<b>TUBESETTLER</b> MOC: Civil	1no.
	<b>TERTIARY TREATMENT</b>	
12.	<b>FILTER FEED PUMP</b> Application- To feed the treated sewage to Multigrade filter / backwashing Type- Centrifugal, Monoblock, horizontal , Self priming MOC - Kirloskar	2 Nos.
13.	<b>PRESSURE SAND FILTER</b> Application - for Removal of fine suspended solids Media- under bed with graded silica sand MOC - MSEP	1 No.
14.	<b>ACTIVATED CARBON FILTER</b> Application - Removal of fine suspended solids, Color & Odor Media- under bed with graded silica sand & Activated carbon MOC - MSEP	1 No.
15.	<b>HYPO DOSING TANK</b> Application - Storage of Hypo Solution Type- Vertical Capacity-100 Ltr MOC - HDPE, Make-Sintex <b>DOSING PUMP</b> Application - To dose the Hypo solution Type- Electronic, Diaphragm Pump Make: Edose	1 Lot.
	<b>MECHANICAL SLUDGE DEWATERING SYSTEM</b>	
16.	<b>SLUDGE RECIRCULATION PUMP</b> Application- To recirculate the sludge Make: Kirloskar/ eqv.	2 Nos.
17.	<b>INTERCONNECTING PIPING, FITTING &amp; VALVES</b> MOC: UPVC Make: Astrol	1 Lot

## 7. ELECTRICAL WORKS

S.NO	DESCRIPTION
i.	<b>CONTROL PANEL</b> Control panel will be fabricated in 14 SWG CRCA sheet with non- compartment, dust & vermin proof, machine mounted Make of Switchgears - Siemens / L & T/LS
ii.	<b>CABLING</b> Electrical cabling shall be provided from control panel to various units of sewage treatment plant Size of cable- As per the capacity of the motors / drives MOG: Copper / Al unarmored Make: Polycab

## 8. Main Process Component:

The main components of the process adopted for the STP include the following

1. Collection of combined wastewater into equalization tank & transfer via pumps into aeration tank
2. Aerobic Treatment in MBBR tank
3. Clarification of aerated mixed liquor in Secondary settling tank.
4. Hypo/Chlorine Treatment for dis-infection.
5. Recycle of treated water for end use in horticulture & flushing.
6. Sludge recycles digestion & use as manner.

The major process steps along with salient technological aspects are described below:

The Sewage from its source of generation will flow via gravity to underground sump from where it has been pumped to Collection- Cum-Equalization Sump of STP. At the inlet of the collection sump, a manually cleaned bar screen has been provided to screen out any large pieces. From this sump, wastewater shall be pumped to MBBR tank via solids handling pumps. Submerged air diffusers are provided in the sump to keep the suspended solids in suspension and to avoid any potential odour problem. Due to aeration in the collection sump, most of the scum shall be trapped in the collection sump. Waste is introduced into the MBBR Tank that facilitates the suspended growth of micro organisms. The aerobic environment in the aeration tank is achieved by the use of Fine Bubble Diffused Aeration, which also serves to maintain the mixed liquor in a completely mixed regime. After a specified period of time, the treated sewage over flows into the secondary settling tanks where the cells are separated from the treated

wastewater. The Settler will be complete with deep well, an overflow weir and scum baffle. The settled sludge is wasted to sludge drying beds. To remove the residual floating scum from the surface of the clarifier periodically, manual skimming, once in 10 days is being planned. The clarified water will overflow between the scum baffle and overflow launder into the outlet channel from where it will be discharged into a Clear water Tank. Treated wastewater after Hypo/Chlorine sterilization dosing is pumped to Filtration unit via Horizontal, centrifugal, clear water pumps installed in plant room. The filtered water after Sand filter & Activated carbon filter shall be clear, odorless, low BOD (upto 30 mg/l), low suspended solids ( Less than 10 mg/l. ) ,low COD (Below 60 mg /l ) and is collected into the Treated water tank ( T.W.T. )

## **9. STRUCTURAL & CONSTRUCTION DETAILS**

Sewage Treatment Plant is constructed above the ground and Plant room. The plant has been designed with the most optimum utilization of space and sufficient space availability for the easy maintainability of the plant. All the tanks have been made accessible from the top.

## **10. FACILITY PLAN & OPERATIONAL DETAILS**

### **1. MBBR TANK**

The MBBR process is utilized to biologically oxidize the organic matter contributing to Biochemical oxygen demand (by converting non-settleable substances, in finely divided, colloidal and dissolved form into settleable sludge and to remove this newly formed sludge, thereby providing a high degree of treatment). This is achieved in the aeration tank through diffused aeration.

Aeration type activated sludge processes are generally preferred in small package type sewage treatment plants as it can take shock loads due to variable sewage flow with varying loads and there is minimum generation of excess sludge. Diffused aeration has the advantage of going for larger depths of the aeration tanks as well as having a fully covered and compact layout of the plant as compared to surface aeration where the mechanical aerators are used. Non-clog, fine bubble, membrane type diffusers are being used in the plant in order to have maintenance free operation and oxygen transfer efficiencies are high. All activated sludge processes have the 5 basic requirements.

- The mixed liquor should carry adequate nos. of bacteria's.
- Dissolved oxygen should be present in sufficient concentration in all the Portions of the aerations tanks

- The activated sludge should separate readily from the treated wastewater in the final settling tanks and should be readily removed.
- MBBR tanks are of sufficient capacity to provide an adequate time for purification to take place.
- There should be sufficient nutrients such as nitrogen and phosphorus available for the growth and maintenance of MLSS.
- The mixed liquor should carry adequate nos. of bacteria's.
- Dissolved oxygen should be present in sufficient concentration in all the portions of the aerations tank.
- The activated sludge should separate readily from the treated wastewater in the final settling tanks and should be readily removed.
- MBBR tank are of sufficient capacity to provide an adequate time for purification to take place.
- There should be sufficient nutrients such as nitrogen and phosphorus available for the growth and maintenance of MLSS

## 2. COMMISSIONING :-

For commissioning of aeration tank, either activated sludge from a STP or cow dung can be used. If cow dung is proposed to be used, it should be strained through gunny bags. The strained cow dung is to be mixed with water in 1:1 proportion by volume to make slurry. Following procedure can then be carried out:

- Fill the aeration tank overflow level.
- Start the blower and adjust the air quantity passing through the diffusers through the valve such a way that there is complete mixing and agitation taking place in the tank
- While the blowers are running, pour 100-200 ltrs of the cow dung slurry
- Continue the aeration in the tanks for 48 hrs.
- After the introduction of cow dung slurry, add 10-15% by vol. of the sewage into the aeration tank and continue aeration for 24 hrs. If the mixed liquor overflows into the secondary clarifier, start the return sludge pumps immediately. After 24 hrs. of starting the return sludge pumps, take a liter sample of the mixed liquor from the aeration tank and allow it to settle in a one liter cylinder. If the supernatant is turbid, do not add another dose of sewage but continue aeration for another 24 hrs. Period. Repeat the above settling test after 24 hrs. of period and if the supernatant is clearer than before, than add 20% by vol. of domestic waste to the aeration

tank and continue aeration. The return sludge pump should be run continuously during this period with 100% recycling.

- Increase the input of raw sewage in steps of 10% (by vol. of the MBBR tank ). When this input reaches 50% , collect a sample of the secondary clarifier effluent and test it for BOD ,COD and suspended solids . If the values are well within the stipulated limit, continue incremental addition of sewage into the aeration tank and as before, test the secondary clarifier effluent for BOD, COD, and SS when all the incoming sewage is being taken into the STP. Also test the mixed liquor in the aeration tank for SS, volatile solids (suspended) and sludge vol. index. Keep a close watch over the settle ability of the sludge solids and the clarity of the supernatant when the mixed liquor from the aeration tank is settled for 30 minutes.

### 11. TERTIARY TREATMENT

#### **DISINFECTION IN CLEAR WATER TANK**

The treated sewage water must be disinfected by hypo/chlorine before the multi Grade Filter the normal development of microorganisms. Since the bacterial population is lower, putrefactive reactions are reduced if not eliminated entirely. It is these bacterial putrefactive reactions which result in odors and all other nuisance conditions in wastewater.

#### 1. FILTRATION

The Hypo/chlorine contacted treated water is passed through Multi Grade Filter & Activated carbon Filter for further removal of residual suspended solids & BOD, excess free chlorine, color & odor.

  
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## Day to Day Operation of STP:

S.No	Description	Frequency
1.	Start waste water lifting pump to transfer waste water in Equalization tank	Daily
2.	Close Valve from Filter Feed Pump and open Valve of fresh water for Backwash of Sand and Carbon Filter	Daily
3.	Put Sand Filter Valve on Backwash and run water for 8-10 Minuets	Daily
4.	Put Sand Filter Valve on Rinse and run water for 5 Minuets	Daily
5.	Put Sand Filter Valve on Service to run water in Carbon Filter	Daily
6.	Put Carbon Filter Valve on Backwash and run water for 8-10 Minuets	Daily
7.	Put Carbon Filter Valve on Rinse and run water for 5 Minuets	Daily
8.	Put Carbon Filter Valve on Service for Filtration	Daily
9.	Close Valve of fresh water and Open Valve of Filter Feed Pump	Daily
10.	Put Waste Water Pump Switch on Auto for feeding of Waste water in MBBR Tank (Pump No. 2 & 3)	Daily
11.	Check water flowing in Tank	Daily
12.	Start Blower Switch and put on Auto system (Pump No. 4 & 5)	Daily
13.	Check Air flowing in Tanks	Daily
14.	Check Tube Settling Tanks for water flowing	Daily
15.	Check water flowing in Filter Feed Tank (Pump No. 6)	Daily
16.	Start Filter Feed Pump and put on Auto System	Daily
17.	Check Chlorine dosing tank for quantity, Start Chlorine dosing pump, Check chlorine dosing in filter line. (Pump No. 7)	Daily
18.	Check water flowing in Filters	Daily
19.	Check water flowing in Treated Water Tank	Daily
20.	Continuously watch the system till waste water treated	Daily
Once In Week		
21.	Check Sludge in MBBR tank before start blower if sludge settles in bottom start pump no. 1 for recirculation of sludge.	Once in week
22.	Check Sludge in Tube Settler tank is found than drain through pipe in sludge drying bed.	Once in week
23.	Fill chlorine tank with chlorine liquid	As per requirement

  
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Date-20.05.2021

To,  
M/s V.L. Foundation  
H.H, Gardens, Power House Road, Teh-Ganganagar, Sri Ganganagar (Raj)  
(GST No. : Nil) Exempted As Hospital

## INVOICE

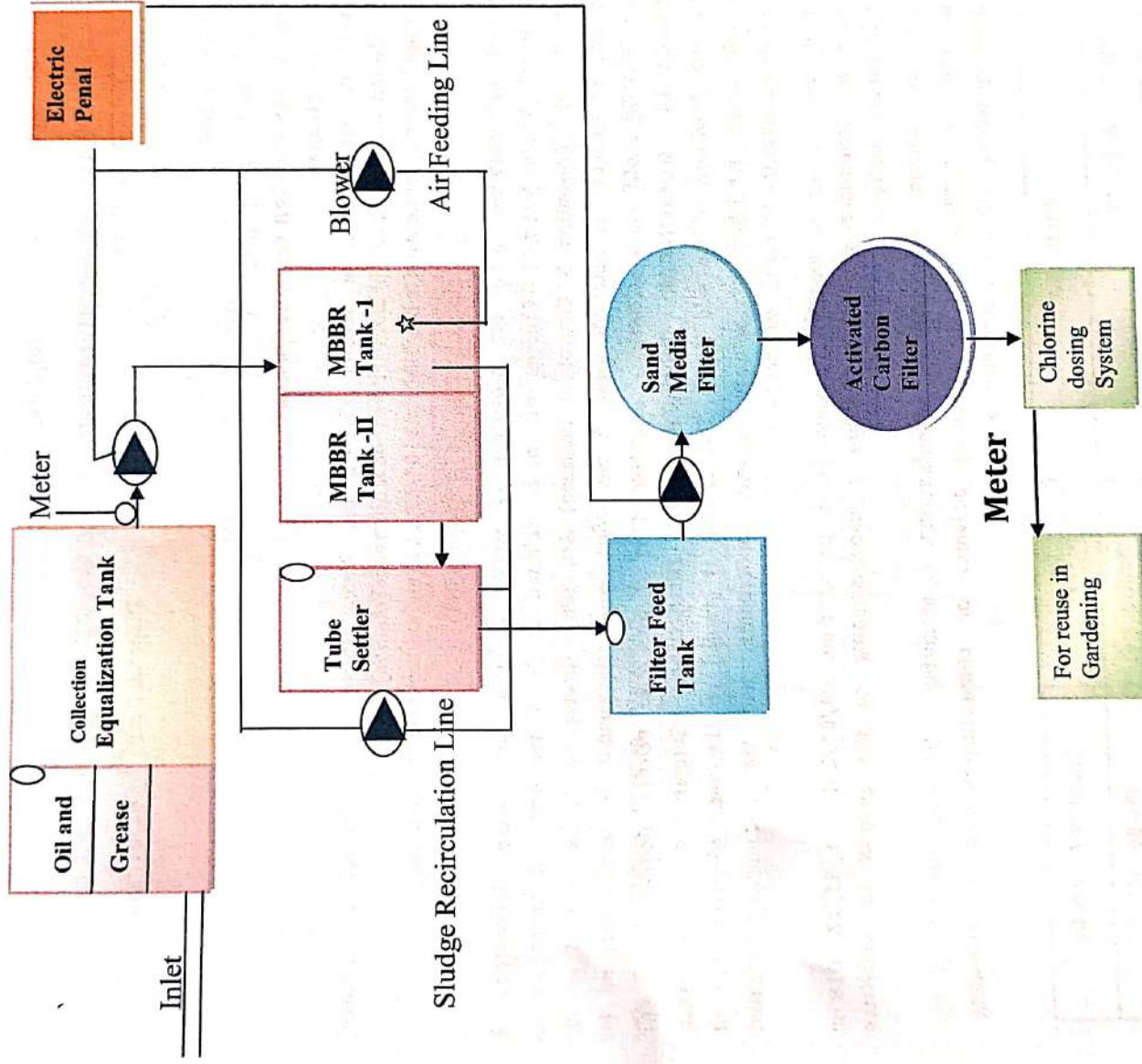
Invoice No.	GST/ES/May-21/10	G. Service Tax No.	08AHPPJ2487C2Z5		
PAN. No.	AHPPJ2487C	Particulars	Rate	Qty.	Amount
S. No.		Supply of Sewerage Treatment Plant 120 M3/Day			
1.		Supply of Different Sewerage Treatment Plant			
a.		Plant HSN Code - 8421	252500/-	--	252500/-
		Net Amount	(9%)	-	22725/-
		SGST	(9%)	-	22725/-
		CGST		-	-
		IGST		-	-
		Amount Adjusted		--	00
		Total Amount			297950/-
Rupees (In words)		Rupees Two Lakhs Ninety Seven Thousand Nine Hundred and Fifty Only			
RTGS Details		Axis Bank - 913020037989546 - IFC Code - UTIB0000097			

For SHUBH TECH ENVIRO ENGINEERS

Praveen Joshi

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### PROCESS FLOW DIAGRAM OF STP





Head Office (BMW)  
**Rajasthan State Pollution Control Board**  
 4, Institutional Area, Jhalana Doongari, Jaipur-302  
 Phone: 141-5159688 Fax: 0141-5159697



Registered

File No : F(BMW)/Shri Ganganagar(Ganganagar)/71(1)/2016-2017/9513-951  
 Order No: 2016-2017/BMW/96

Unit Id : 73993

Dispatch Date: 04/01/2017

M/s VL FOUNDATION

H H GARDENS POWER HOUSE ROAD SRI  
 GANGANAGAR , GANGANAGAR Tehsil:Ganganagar  
 District:Shri Ganganagar

Sub: Consent to Establish under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(4) of Air (Prevention & Control of Pollution) Act, 1981.

Ref: Your application(s) for Consent to Establish dated 04/02/2016 and subsequent correspondence.

Sir,

Consent to Establish under the provisions of section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 (hereinafter to be referred as the Water Act) and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981, (hereinafter to be referred as the Air Act), as amended to date and rules & the orders issued thereunder is hereby granted for *your HEALTH CARE plant situated / proposed at H H GARDENS POWER HOUSE ROAD SRI GANGANAGAR* GANGANAGAR Tehsil:Ganganagar District:Shri Ganganagar , Rajasthan under the provisions of the said Act(s). This consent is granted on the basis of examination of the information furnished by you in consent application(s) and the documents submitted therewith, subject to the following conditions:-

- 1 That this Consent to Establish is valid for a period from 04/01/2017 to 31/12/2019 or date of Commencement of production / commissioning of the project or activities whichever is earlier.
- 2 That this Consent is granted for manufacturing / producing following products / by products or carrying out the following activities or operation/processes or providing following services with capacities given below.

Particular	Type	Quantity / Capacity
HOSPITALACTIVITY	Activity	330.00 BEDS

- 3 That in case of any increase in capacity or addition / modification / alteration or change in product mix or process or raw material or fuel the project proponent is required to obtain fresh consent to establish.

*[Signature]*  
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 4, Institutional Area, Jhalana Doongari, Jaipur-302  
 Phone: 141-51596004 Fax: 0141-5159697

Registered

**File No :** F(BMW)/Shri Ganganagar(Ganganagar)/71(1)/2016-2017/9513-951  
**Order No:** 2016-2017/BMW/96

**Unit Id :** 73993

**Dispatch Date:** 04/01/2017

4 That the control equipment as proposed by the applicant shall be installed before trial operation is started for which prior consent to operate under the provision of the Water Act and Air Act shall be obtained. This consent to establish shall not be treated as consent to operate.

5 That the quantity of effluent generation and disposal along with mode of disposal for the treated effluent shall be as under:

Type of effluent	Max. effluent generation (KLD)	Quantity of effluent to be recycled (KLD)	Quantity of treated effluent to be disposed (KLD) and mode of disposal
Domestic Sewage	160.000	160.000	NIL *Sewage Treatment Plant

6 That the sources of air emissions along with pollution control measures and the emission standards for the prescribed parameters shall be as under:

Sources of Air Emissions	Pollution Control Measures	Prescribed	
		Parameter	Standard
D.G. SET(125KVA)	ACOUSTIC ENCLOSURE, ADEQUATE STACK HEIGHT	--	--

7 That the domestic sewage shall be treated before disposal so as to conform to the standards prescribed by the Board as notified under the Environment (Protection) Act-1986 for disposal Into Inland Surface Water. The main parameters for regular monitoring shall be as under.

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Dispatch Date: 04/01/2017

Parameters	Standards
Total Suspended Solids	Not to exceed 100 mg/l
Oil and Grease	Not to exceed 10 mg/l
Biochemical Oxygen Demand (3 days at 27°C)	Not to exceed 30 mg/l
Bio-assay Test	Minimum 90% survival after 96 hours with fish at 100% effluent
pH Value	Between 6.5 to 9.0
Chemical Oxygen Demand	Not to exceed 250 mg/l

- 8 That the STP will be installed by 30/09/2017 failing which the bank guarantee of Rs. 5,00,000/- will be forfeited.
- 9 That the hospital shall comply the provisions of Bio-medical Waste Management Rules, 2016.
- 10 That the hospital shall comply with the standards for treatment & disposal of Bio-medical Waste as specified under Schedule II of Bio-medical Waste Management Rules, 2016.
- 11 That infected hospital liquid waste must be given chemical treatment by using at least 10 % hypochlorite solute on or any other equivalent chemical reagent to ensure required disinfection.
- 12 That no treated/untreated effluent will be discharged inside or outside the facility premises and all the treated waste water will be utilized for plantation inside the facility premises.
- 13 That total built up area of the hospital shall not exceed 20,000 meter square falling which the hospital will obtain Environmental Clearance from the Competent Authority.
- 14 That, not withstanding anything provided hereinabove, the State Board shall have power and reserves its right, as contained under section 27(2) of the Water Act and under section 21(6) of the Air Act to review anyone or all the conditions imposed here in above and to make such variation as it deemed fit for the purpose of compliance of the Water Act and Air Act.

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Order No: 2016-2017/BMW/96  
Unit Id : 73993  
Dispatch Date: 04/01/2017

- 15 That the grant of this Consent to Establish is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the industry/unit/project proponent.
- 16 That the grant of this Consent to Establish shall not, in any way, adversely affect or jeopardize the legal proceedings, if any, instituted in the past or that could be instituted against you by the State Board for violation of the provisions of the Act or the Rules made thereunder.

This Consent to Establish shall also be subject, beside the aforesaid specific conditions, to the general conditions given in the enclosed Annexure. The project proponent will comply with the provisions of the Water Act and Air Act and to such other conditions as may, from time to time, be specified by the State Board under the provisions of the aforesaid Act(s). Please note that, non compliance of any of the above stated conditions would tantamount to revocation of Consent to Establish and project proponent / occupier shall be liable for legal action under the the relevant provisions of the said Act(s).

This bears the approval of the competent authority.

Yours Sincerely

Copy To:-  
Group Incharge[BMW]

- 1 Regional Officer, Regional Office, Rajasthan State Pollution Control Board, Bikaner. Please inspect the hospital once it will be operational.
- 2 Master File.

Group Incharge[BMW]

  
DIRECTOR PRINCIPAL  
SURENDRA DENTAL COLLEGE  
& RESEARCH INSTITUTE  
SRI GANGANAGAR (RAJ)





Regional Office Bikaner  
Rajasthan State Pollution Control Board  
33, Phase-II, Bichwal Industrial Area, Bikaner  
Phone: 0151-2250006



Registered

File No : F(BMW)/Shri Ganganagar(Ganganagar)/71(1)/2016-2017/395-396  
Order No : 2021-2022/Bikaner/9440

Unit Id : 73993

Date: 09/07/2021

M/s V L FOUNDATION

H H GARDENS POWER HOUSE ROAD SRI GANGANAGAR ,  
GANGANAGAR Tehsil:Ganganagar  
District:Shri Ganganagar

Sub: Consent to Operate under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(4) of Air (Prevention & Control of Pollution) Act, 1981.

Ref: Your application for Consent to Operate dated 19/12/2019 and subsequent correspondence.

Consent to Operate under the provisions of section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 (hereinafter to be referred as the Water Act) and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981, (hereinafter to be referred as the Air Act) as amended to date and rules & the orders issued thereunder is hereby granted for your HEALTH CARE plant situated at H H GARDENS POWER HOUSE ROAD SRI GANGANAGAR GANGANAGAR Tehsil:Ganganagar District:Shri Ganganagar , Rajasthan, subject to the following conditions:-

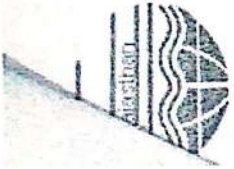
- 1 That this Consent to Operate is valid for a period from 19/12/2019 to 30/11/2024.
- 2 That this Consent is granted for manufacturing / producing following products / by products or carrying out the following activities or operation/processes or providing following services with capacities given below.

Particular	Type	Quantity with Unit
Hospital	Activity	100.00 BEDS

- 3 That this consent to operate is for existing plant, process & capacity and separate consent to establish/operate is required to be taken for any addition / modification / alteration in process or change in capacity or change in fuel.
- 4 That the quantity of effluent generation along with mode of disposal for the treated effluent shall be as under:

  
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SURENDRA DENTAL COLLEGE  
& RESEARCH INSTITUTE  
SRI GANGANAGAR (RAJ)





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Type of effluent	Max. effluent generation (KLD)	Recycled Qty of Effluent (KLD)	Disposed Qty of effluent (KLD) and mode of disposal
Domestic Sewage	112.800	90.240	NIL Sewage Treatment Plant

5 That the sources of air emissions along with pollution control measures and the emission standards for the prescribed parameters shall be as under:

Sources of Air Emissions	Pollution Control Measures	Prescribed	
		Parameter	Standard
DG Set( 160KVA)	ACOUSTIC ENCLOSURE , ADEQUATE STACK HEIGHT	CO Particulate Matter NOx+HC	3.5 g/kWhr 0.2 g/kWhr 4.0 g/kWhr

6 That the domestic sewage shall be treated before disposal so as to conform to the standards prescribed under the Environment (Protection) Act-1986 for disposal On Land for irrigation. The main parameters for regular monitoring shall be as under.

Parameters	Standards
Total Suspended Solids	Not to exceed 100 mg/l
pH Value	Between 5.5 to 9.0
Oil and Grease	Not to exceed 10 mg/l
Biochemical Oxygen Demand (3 days at 27°C)	Not to exceed 100 mg/l
Chemical Oxygen Demand	Not to exceed 250 mg/l

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**Rajasthan State Pollution Control Board**  
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- 7 That HCF shall not extract ground water without prior permission from the Central Ground Water Authority.
- 8 That this consent to operate is subject to the post audit of pollution control measures and consent conditions. In case the occupier is found to have flouted consent conditions or not having adequate pollution control measures during inspection, the consent will be revoked and direction shall be issued under section 33 A of the Water Act.
- 9 That HCF shall not utilize any ozone depleting substances.
- 10 That Hospital shall establish a Bar- Code System for bags or containers containing bio-medical waste to be sent out of the premises for the further treatment and disposal.
- 11 That this consent will not be used as an evidence for ascertaining the land title and its use.
- 12 That the HCF shall submit copy of valid membership certificate from CBWMTF time to time in the Regional Office, Bikaner.
- 13 That the water meter flow meters shall be provided at all suitable points to measure quantity of daily water received, water consumption, waste water generation, waste water treated and treated waste water shall be recycled and utilized for plantation/gardening purpose. Daily record of the same shall be maintained and submitted to the Board.
- 14 As per the prevailing rules/guidelines issued by the regulatory authority. Use of solar panels also may be done to the extent possible.
- 15 That no treated/untreated effluent will be discharged inside or outside the facility premises and all the treated waste water will be utilized for plantation and other gainful purpose inside the facility premises.
- 16 That the hospital shall install adequately designed Rain Water harvesting Structure for prevention and recharge of ground water in and around the area.
- 17 That infected hospital liquid waste must be given chemical treatment by using at least 10% hypochlorite solution or any other equivalent chemical reagent to ensure required disinfection.
- 18 That the hospital shall comply with the standards for treatment & disposal of Bio-medical waste as specified under schedule 7 of Bio Medical Waste Management Rules 2016.
- 19 That the hospital shall maintain adequate height of stack along with acoustic enclosure with D.G. Sets of (160 KVA). No additional air pollution source shall be installed without prior permission of the Board.

**DIRECTOR PRINCIPAL**  
SURENDRA DENTAL COLLEGE  
& RESEARCH INSTITUTE  
SRI GANGANAGAR (RAJ)

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- 20 That the hospital shall obtain environmental clearance from competent authority under EIA notification dated 14.09.2006 for any such activity which attracts Environmental Clearance under EIA Notification dated 14.09.2006.
- 21 That this authorization shall be subject to compliance of directions or order passed by National Green Tribunal (NGT)/court of law in the matter, if any.
- 22 That any incorrect information submitted in the application form or declaration shall make the hospital liable for legal action under section 42 of the Water Act and Section 38 of the Air Act.
- 23 That the total water consumption for the hospital shall not exceed - 141 KLD without prior permission from the state board.
- 24 That the hospital shall not allow making any obsoles to any natural water flow i.e. natural nallah/stream carrying rain water to any water body.
- 25 That this Consent to Operate is valid for 100 beds and one DG Set of 160 KVA Capacity only. For any change in capacity of the service & area, the hospital has to seek fresh consent.
- 26 That the entire treated sewage shall be utilized within premises for flushing horticulture/plantation etc. and zero discharge status shall be maintained outside the premises.
- 27 That the hospital shall maintain & operate STP of 120 KLD capacity to treat the domestic waste water generated from hospital activities & other utilities to achieve the standards prescribed under the EPA, 1986.
- 28 That the hospital shall not use chlorinated plastic bags, gloves and blood bags as per notification of the BMW Rules, 2016.
- 29 That, notwithstanding anything provided hereinabove, the State Board shall have power and reserves its right, as contained under section 27(2) of the Water Act and under section 21(6) of the Air Act to review anyone or all the conditions imposed here in above and to make such variation as it deemed fit for the purpose of Air Act & Water Act.
- 30 That the grant of this Consent to Operate is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility to comply with the conditions laid down in all other laws for the time-being in force, rests with the industry/unit/project proponent.
- 31 That the grant of this Consent to Operate shall not, in any way, adversely affect or jeopardize the legal proceeding, if any, instituted in the past or that could be instituted against you by the State Board for violation of the provisions of the Act or the Rules made thereunder.

  
DIRECTOR-PRINCIPAL  
SURENDRERA DENTAL COLLEGE  
& RESEARCH INSTITUTE  
SRIGANGANAGAR (RAJ)



**Rajasthan State Pollution Control Board**  
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This Consent to Operate shall also be subject besides the aforesaid specific conditions, to the general conditions given in the enclosed Annexure. The project proponent will comply with the provisions of the Water Act and Air Act and to such other conditions as may, from time to time, be specified, by the State Board under the provisions of the aforesaid Act(s). Please note that non compliance of any of the above stated conditions would tantamount to revocation of Consent to Operate and project proponent / occupier shall be liable for legal action under the relevant provisions of the said Act(s).

Yours Sincerely

Regional Officer (Bikaner)

(A) Copy To:-

1 Master File.

Regional Officer (Bikaner)



  
**DIRECTOR PRINCIPAL**  
SURENDRA DENTAL COLLEGE  
& RESEARCH INSTITUTE  
SRI GANGANAGAR (RAJ)

# WATER TREATMENT PLANT



  
DIRECTOR PRINCIPAL  
SUPERIOR DENTAL COLLEGE  
RESEARCH INSTITUTE  
VIGANAGAR (RAJ)

## **SALIENT FEATURES OF THE WATER TREATMENT PLANT (WTP) AT SDCRI Campus**

A Water Treatment Plant has been established at the SDCRI Campus to treat municipal and canal water into potable water . The processing capacity is 80 Kilolitres / day on an average. The plant is operational since January 2009 and is delivering potable quality water.

The WTP installed is unique in many respects and works in following manner:

- a) Vertically structured plant in which unprocessed water flows mostly by gravity that removes the suspended solids from water by sedimentation process.
- b) The plant has been designed to operate automatically requiring no human intervention in processing thereby standardizing processing parameters and saving manpower costs. Operator task is limited to filling dosing vessels with processing chemicals.
- c) The plant use Chlorine to disinfect the water
- d) The plant is designed to economize space and occupies only 7.5 metres x 11 metres plinth area being vertically extended structure to treat huge volume of 80,000 litres/day.



**DIRECTOR PRINCIPAL  
SURENDRA DENTAL COLLEGE  
& RESEARCH INSTITUTE  
SRI GANGANAGAR (RAJ)**