## MAHARASHTRA POLLUTION CONTROL BOARD

Tel: 24010706/24010437

Fax: 24023516

Website: http://mpcb.gov.in Email: cac-cell@mpcb.gov.in



Kalpataru Point, 2nd and 4th floor, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai-400022

Date: 15/11/2022

RED/S.S.I

No:- Format1.0/CAC/UAN

No.0000140147/CE/2211001149

To.

Hon. Annasaheb Dange Ayurved Medical college, Post Graduate and Research Center and Dhanvantari Hospital.

Hospitai,

1568/2A, Ashta,

Tal. - Walwa, Dist. - Sangli.



Sub: Grant Consent to Establish and authorization for Hospital activity for

244 Beds, under RED category.

Ref:

1. Your application for Combine Consent and Bio-Medical Authorization dated 03.06.2022.

2. The minutes of 6th Consent Appraisal Committee meeting dated 30.08.2022.

Combined Consent to Establish and BMW Authorization.

For: Under Section 25 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 6 of the Hazardous & Other Wastes (Management & Transboundary Movement) Rules 2016 and Bio-Medical Waste Management Rules, 2016 and amendment thereof is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I, II, III & IV annexed to this order:

- The consent to establish is granted for a period up to commissioning of the unit or up to 5 year whichever is earlier.
- $^{2\cdot}$  The capital investment of the project is Rs.8.9803 Crs. (As per C.A Certificate submitted by industry ).
- The Consent is valid for the Activity of

Sr No	Activity	Quantity	UOM
1)	Hospital		
a)	Beds	244	Nos
b)	Total Plot Area	16000.00	Sq.Mtrs
c)	Total Built up Area	6500.00	Sq.Mtrs

4. Conditions under Water (P&CP) Act, 1974 for discharge of effluent:

Sr No	Description	Permitted (in CMD)	Standards to Acheive	Disposal
1.	Trade effluent	6	As per Schedule -I	Recycle/Reuse on land for gardening.

Sr No	Description	Permitted (in CMD)	Standards to Acheive	Disposal
2.	Domestic effluent	65	As per Schedule - I	Recycle/Reuse on land for gardening.

5. Conditions under the Air (P& CP) Act, 1981 for air emissions:

Sr.No	Description of stack / source	Number of Stack	Standards to be achieved
1	NA	1	As per Schedule -II

Conditions under Hazardous & Other Wastes (M & T M) Rules 2008 for treatment and disposal of hazardous waste:

Sr No	Type of Waste	HW Category.	Quantity	UoM	Treatment	Disposal
1		NA	0	NA	NA	NA

7. Conditions about Non Hazardous Wastes:

Sr No	Type of Waste	Quantity	UoM	Treatment	Disposal
1	NA	00	NA	NA	NA

8. Treatment and Disposal of Biomedical Waste generated to CBMWTSDF:

Sr.No	Category	Type of Waste	Quantity not to exceed (Kg/M)	Segregation Color coding	Treatment & Disposal
		a) Human Anatomical waste	4.60	N. N	
		b) Soiled Waste	3782.00		
1	Yellow	c) Expired or Discarded Medicines	65.00	Yellow colored non- chlorinated plastic bags or containers	CBMWTSDF
		d) Microbiology Biotechnology and other clinical laboratory waste	4.00		
2	Red	Contaminated waste (Recyclable)	5000.00	Red colored non chlorinated plastic bags or containers	CBMWTSDF
3	White (Translucent)	Waste sharps including Metals	490.00	Puncture proof, Leak proof, tamper proof container	CBMWTSDF
4	Blue	a) Glassware	900.00	Puncture proof & leak proof boxes or containers with blue colored marking.	CBMWTSDF

- 9. PP shall comply the following guidelines published by the CPCB on February-2019 regarding handling of BMW for utilization
  - HCE shall preferably handover Bio-medical wastes such as pleural fluid, ascetic fluid, HBsAG positive blood, placenta etc. to the Pharmaceutical industry / Biotechnology firms for production of drugs, reagent chemicals, markers etc. if any such as Pharmaceutical industry / Biotechnology firm approaches them for the same. If there are any difficulties in the matter, the same may be communicated to such firm and copied to the board also.
  - HCE shall strictly follow the procedure for packaging & transportation of Bio-medical Wastes such as pleural fluid, ascetic fluid, HBsAG positive blood, placenta etc. to the Pharmaceutical industry / Biotechnology firms as per the guidelines of CPCB published in Feb-2019 for "Handling of BMW for utilization".

- 3. HCEs shall submit the report to the Board office about type, quantity and frequency of handling over such BMW on yearly basis.
- 4. Industry to enter into legal agreement with HCE's and inform the MPC Board and competent authority of State Public Health Department about such collection of BMW along with quantity and type of waste collected.
- 5. In case of any technical difficulty towards handing over the required BMW, you shall inform to the Board accordingly.
- 6. HCEs shall properly dispose and handover the waste to authorised user / facilities having valid consent to operate from MPCB.
- 10. This consent is issued subject to conditions mentioned below:
  - a. The "authorized Person" shall comply with provisions of the Environment (Protection) Act, 1986, and the Rules made there under.
  - b. Any unauthorized change in equipment or working conditions as mentioned in the application by the person authorized shall constitute a breach of this Authorization.
  - c. You shall submit details of Management and Handling of outdated, discarded, unused Cytotoxic drugs generated in the Cancer centers, research and health care in the format prescribed by CPCB which is available on www.cpcb.nic.in alongwith Annual Report to MPCB with a copy to CPCB before 31st January every year.
  - d. You shall manage the Mercury Waste in the HCE in environmentally sound manner (including storage, spilled collection, transportation and disposal) as per CPCB guidelines published on CPCB website www.cpcb.nic.in dated: 07.09.2010 as detailed in document entitled "Environmentally Sound Management of Mercury Waste in Health Care Facilities"?.
  - e. You shall ensure phase out of chlorinated plastic bags, gloves and blood bags by HCEs within two years.
  - f. You shall establish Bar code system within one year.
  - g. You shall ensure that the liquid waste is treated and disposed by all the occupier or operator of a CBWTF in accordance with the Water Act, 1974;
  - h. You shall maintain day to day basis and display the monthly record Including Annual report on its website within two years from the date of Notification.
  - i. You shall submit separate Bank Guarantees towards compliance of condition mentioned at Annexure IV to Regional Office, within 30 days.
  - j. You shall submit compliance of Bank Guarantee conditions every six months to Regional Officer, for verification purpose.
  - k. You shall submit application for renewal of Combined Consent and Biomedical Waste authorization before 120 days along with appropriate fees.
- 11. This Board reserves the right to review, amend, suspend, revoke etc. this consent and the same shall be binding on the industry.
- 12. This consent should not be construed as exemption from obtaining necessary NOC/permission from any other Government agencies.
- 13 HCE shall provide STP and ETP for treatment of effluent within 6 months.
- 14 HEC shall submit Bank Guarantee as per BG regime.

15 Health Care Establishment shall submit BMW annual report.

This consent is issued as per communication letter dated 03/11/2022 which is approved by competent authority of the board.





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Signed by: Dr. Y.B.Sontakee
Joint Director(WPC) & InCharge Of CAC-Cell
For and on behalf of,
Maharashtra Pollution Control Board
cac-cell@mpcb.gov.in

2022-11-15 14:50:13 IST

#### Received Consent fee of -

Sr.No	Amount(Rs.)	Transaction/DR.No.	Date	Transaction Type
1	25000.00	TXN2206000312	03/06/2022	Online Payment
2	10000.00	TXN2205003678	31/05/2022	Online Payment

#### n

#### Copy to:

- 1. Regional Officer, MPCB, Kolhapur and Sub-Regional Officer, MPCB, Sangli
- They are directed to ensure the compliance of the consent conditions.
- 2. Cheif Accounts Officer, MPCB, Sion, Mumbai
- 3. CAC-CC desk for record & website updation.



#### SCHEDULE-I

#### Terms & conditions for compliance of Water Pollution Control:

- 1. A] As per your application, you have segregate trade effluent into weak stream & high stream and provided Effluent Treatment Plant (ETP) comprising of:
  - i) High COD/TDS Comprising treatment system of .
  - ii) Low COD/TDS Comprising treatment system having capacity CMD as .
  - B] The Applicant shall operate the effluent treatment plant (ETP) to treat the trade effluent so as to achieve the following standards prescribed by the Board or under EP Act, 1986 and Rules made there under from time to time, whichever is stringent:

Sr.No	Parameters	Standards
	I. Compulsory Parameters	Limiting Concentration in mg/l, except for pH
(1)	рН	5.5 to 8.5
(2)	Oil & Grease	10 mg/l
(3)	BOD (3 days 27°C)	30 mg/l
(4)	Total Suspended Solids	100

- C] The treated sewage shall be recycled for secondary purposes to the maximum extent and remaining shall be discharged on land for gardening within premise and remaining shall be disposed in sewerage system provided by local body. In no case, sewage shall find its way for gardening / outside hospital premises.
- A] As per your application, you have proposed to provide Sewage Treatment Plant of designed capacity 70 CMD with mbbr technology for the treatment of 65 CMD of sewage.
  - B] The Applicant shall operate the sewage treatment system to treat the sewage so as to achieve the following standards.

1	рН	Not to exceed	5.5 to 8.5
2	BOD	Not to exceed	30 mg/l
3	COD	Not to exceed	100 mg/l
4	SS	Not to exceed	50 mg/l
5	Total Suspended Solids	Not to exceed	100 mg/l

- C] The treated sewage shall be recycled for secondary purposes to the maximum extent and remaining shall be discharged on land for gardening within premise and remaining shall be disposed in sewerage system provided by local body. In no case, sewage shall find its way for gardening / outside hospital premises.
- 3. The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification there of & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions. The Applicant shall obtain prior consent of the Board to take steps to establish the unit or establish any treatment and disposal system or an extension or addition thereto.

- 4. The industry shall ensure replacement of pollution control system or its parts after expiry of its expected life as defined by manufacturer so as to ensure the compliance of standards and safety of the operation thereof.
- 5. The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974 and as amended, by installing water meters and other provisions as contained in the said act:

Sr. No.	Purpose for water consumed	Water consumption quantity (CMD)
1.	Industrial Cooling, spraying in mine pits or boiler feed	0.00
2.	Domestic purpose	70.00
3.	Processing whereby water gets polluted & pollutants are easily biodegradable	10.00
4.	Processing whereby water gets polluted & pollutants are not easily biodegradable and are toxic	1.00
5.	Gardening	5

6. The Applicant shall provide Specific Water Pollution control system as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance/ CREP guidelines.

#### **SCHEDULE-II**

#### Terms & conditions for compliance of Air Pollution Control:

1. As per your application, you have proposed to provide the Air pollution control (APC) system and also to erect following stack (s) to observe the following fuel pattern:

Stack No.	Stack Attached To		Height in Mtrs.	Type of Fuel	Quantity & UoM	5%	<b>50</b> <sub>2</sub>
00	NA 00	00	00	NA	00NA	0.00	0.00

2. The applicant shall provide stack height of mtrs operate and maintain above mentioned air pollution control system, so as to achieve the level of pollutants to the following standards:

Total Particulate matter Not to exceed 150 mg/Nm<sup>3</sup>

- The Applicant shall obtain necessary prior permission for providing additional control
  equipment with necessary specifications and operation thereof or alteration or
  replacement/alteration well before its life come to an end or erection of new pollution
  control equipment.
- 4. The Board reserves its rights to vary all or any of the condition in the consent, if due to any technological improvement or otherwise such variation (including the change of any control equipment, other in whole or in part is necessary).
- 5. Conditions for D.G. Set
  - Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.

- b) Industry should provide acoustic enclosure for control of noise. The acoustic enclosure/ acoustic treatment of the room should be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on higher side. A suitable exhaust muffler with insertion loss of 25 dB (A) shall also be provided. The measurement of insertion loss will be done at different points at 0.5 meters from acoustic enclosure/room and then average.
- c) Industry should make efforts to bring down noise level due to DG set, outside industrial premises, within ambient noise requirements by proper sitting and control measures.
- d) Installation of DG Set must be strictly in compliance with recommendations of DG Set manufacturer.
- e) A proper routine and preventive maintenance procedure for DG set should be set and followed in consultation with the DG manufacturer which would help to prevent noise levels of DG set from deteriorating with use.
- f) D.G. Set shall be operated only in case of power failure.
- g) The applicant should not cause any nuisance in the surrounding area due to operation of D.G. Set.
- h) The applicant shall comply with the notification of MoEF dated 17.05.2002 regarding noise limit for generator sets run with diesel.

# SCHEDULE-III Details of Bank Guarantees:

Sr. No.	Consent(C2E/C 2O/C2R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
			NA			

<sup>\*\*</sup> The above Bank Guarantee(s) shall be submitted by the applicant in favour of Regional Officer at the respective Regional Office within 15 days of the date of issue of Consent. # Existing BG obtained for above purpose if any may be extended for period of validity as above.

Statement of conditions to be complied and Bank Guarantee imposed to ensure timely compliance to be observed by:

Sr.No	Activity / Condition to be Complied	Compliance Timeline(Months)	Bank Guarantee Amount
1A	Operation and Maintenance		
1	To Segregate and Handle BMW as per Rule	Continuous	25000
2	Towards Operation and Maintenance of STP/ETP to achieve prescribed discharge standards	Continuous	100000
1B	Records		
1	To Maintain records of BMW and submission of Annual Report in Form –II before 31st January	Continuous	25000
2	To maintain records of BMW material delivered to CBMWTSDF	Continuous	25000

Sr.No	Activity / Condition to be Complied	Compliance Timeline(Months)	Bank Guarantee Amount
2	Performance		
1	To provide BMW separate storage facility as per guidelines of CPCB	Continuous	25000

#### **BG Forfeiture History**

Srno.	Consent (C2E/C2O/C2R)	Amount of BG imposed	Submission	AF DC	Amount of BG Forfeiture	BG
			NA			

#### **BG Return details**

Srno. Consent (C2E/C2O/C2R)	BG imposed	Purpose of BG	Amount of BG Returned
	NA		

#### **SCHEDULE-IV**

#### **General Conditions:**

- You shall provide facility for collection of environmental samples and samples of trade and sewage effluents, air emissions and hazardous waste to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.
- 2. You should monitor effluent quality, stack emissions, noise and ambient air quality quarterly
- 3. You shall provide ports in the chimney/(s) and facilities such as ladder, platform etc. for monitoring the air emissions and the same shall be open for inspection to/and for use of the Board's Staff. The chimney(s) vents attached to various sources of emission shall be designated by numbers such as S-1, S-2, etc. and these shall be painted/displayed to facilitate identification.
- 4. Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess of standards laid down, such information shall be forthwith Reported to Board, concerned Police Station, office of Directorate of Health Services, Department of Explosives, Inspectorate of Factories and Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.
- 5. You shall provide an alternate electric power source sufficient to operate all pollution control facilities installed to maintain compliance with the terms and conditions of the consent. In the absence, the applicant shall stop, reduce or otherwise, control production to abide by terms and conditions of this consent.
- 6. You shall submit, the Environmental Statement Report for the financial year ending 31st March in the prescribed Form-V as per the provisions of rule 14 of the Environment (Protection) (Second Amendment) Rules, 1992 to Regional Office, , the 30th day of September every year.

- 7. You shall recycle/reprocess/reuse/recover Hazardous Waste as per the provision contain in the HW (MH&TM) Rules 2008, which can be recycled /processed /reused /recovered and only waste which has to be incinerated shall go to incineration and waste which can be used for land filling and cannot be recycled/reprocessed etc should go for that purpose, in order to reduce load on incineration and landfill site/environment.
- 8. You shall comply with the Hazardous Waste (M, H & TM) Rules, 2008 and submit the Annual Returns to RO- as per Rule 5(6) & 22(2) of Hazardous Waste (M, H & TM) Rules, 2008 for the preceding year April to March in Form-IV by 30th June of every year.
- 9. An inspection book shall be opened and made available to the Board's officers during their visit to the HCE.
- 10. You shall strictly comply with the Water (P&CP) Act, 1974, Air (P&CP) Act, 1981 and Environmental Protection Act, 1986 and industry specific standard under EP Rules 1986 which are available on MPCB website (www.mpcb.gov.in).
- 11. You shall constitute an Environmental cell with qualified staff/personnel/agency to see the day to day compliance of consent & authorization condition towards Environment Protection.
- 12. Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided at the end of the collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers downstream of the terminal manholes. No effluent shall find its way other than in designed and provided collection system.
- 13. Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the HCE.
- 14. You shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants and air pollution control system. A register showing consumption of chemicals used for treatment shall be maintained.
- 15. You should not cause any nuisance in surrounding area.
- 16. You shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standard in respect of noise to less than 75 dB (A) during day time and 70 dB (A) during night time. Day time is reckoned in between 6 a.m. and 10 p.m. and night time is reckoned between 10 p.m. and 6 a.m.
- 17. You shall maintain good housekeeping.
- 18. You shall bring minimum 33% of the available open land under green coverage/ plantation. The applicant shall submit a yearly statement to Regional Office by 30th September every year on available open plot area, number of trees surviving as on 31st March of the year and number of trees planted by September end.
- 19. The non-hazardous solid waste arising in the factory premises, sweepings, etc. be disposed of scientifically so as not to cause any nuisance / pollution. The applicant shall take necessary permissions from civic authorities for disposal of solid waste.
- 20. You shall not change or alter the quantity, quality, the rate of discharge, temperature or the mode of the effluent/emissions or hazardous wastes or control equipments provided for without previous written permission of the Board. You will not carry out any activity, for which this consent has not been granted/without prior consent of the Board.
- 21. You shall submit Six Monthly statement in respect of obligation towards consent and pollution control compliance's duly supported with documentary evidences (format can downloaded from MPCB official site).

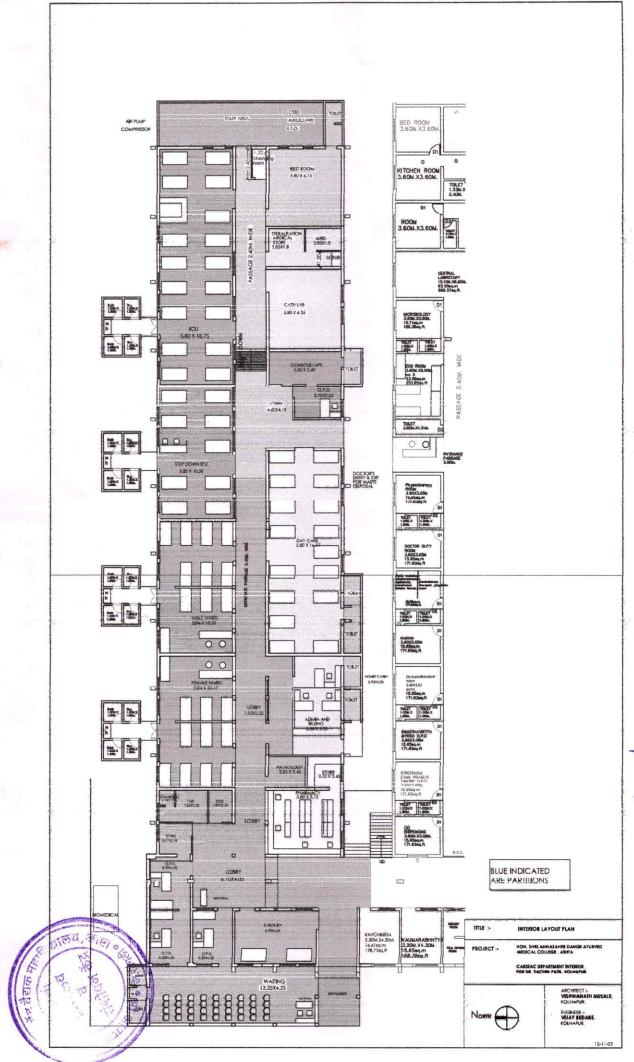
- 22. You shall submit official e-mail address and any change will be duly informed to the MPCB, forthwith.
- 23. You shall achieve the National Ambient Air Quality standards prescribed vide Government of India, Notification dtd. 16.11.2009 as amended
- 24. You shall observe provisions of E-waste (Management and Handling) Rules 2011 and Battery Waste (Management and Handling) Rules 2001, as amended.

This certificate is digitally & electronically signed.



# Incineration

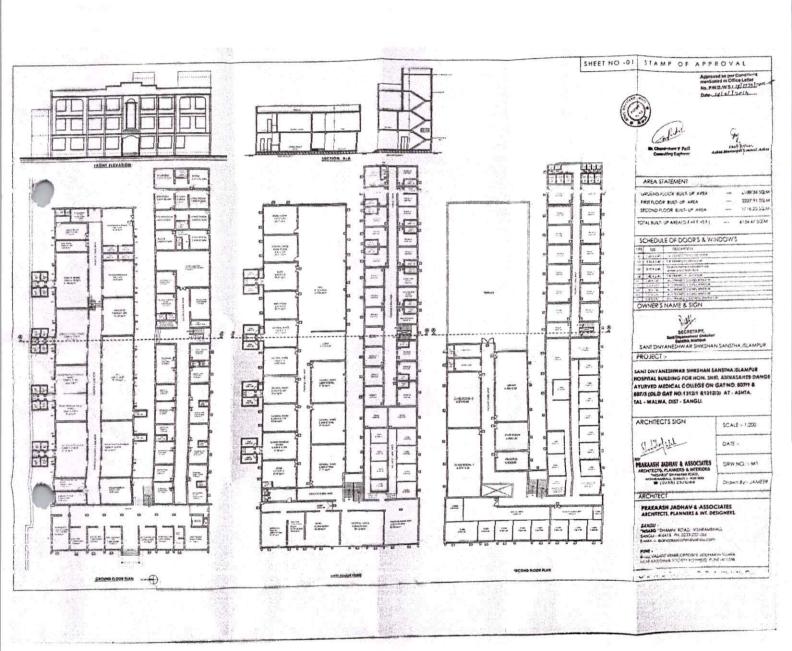
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MPCB Authorization No.: Format 1.0/PSO/UAN No.0000095183/CR 2112001727				
Certificate No.:IPD/ 805 /22-23				
प्रमाणपन				
9) वैद्यकीय व्यावसायिकाचे नांव-				
Dange Ayurvedic Medical				
२) हॉस्पिटलचे नांव eollege Thanvantam Hosp				
3) पता- Sangli Road Ashta				
२) हॉस्पिटलमधील बेडसची एकूण संख्या - 244				
उपरोक्त संस्थेत उत्पन्न होणारा जैव वैद्यकीय कचरा, भस्मीकरण( Incineration) व इतर प्रक्रिया करण्यासाठी प्रकल्पस्थळी नेला जातो				
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प्रमाणपत्राची वैद्यता मुदत				
दि. 14 2023 ते 313 2024 पर्यंत हे प्रमाणप्रत्र वैध राहील.				
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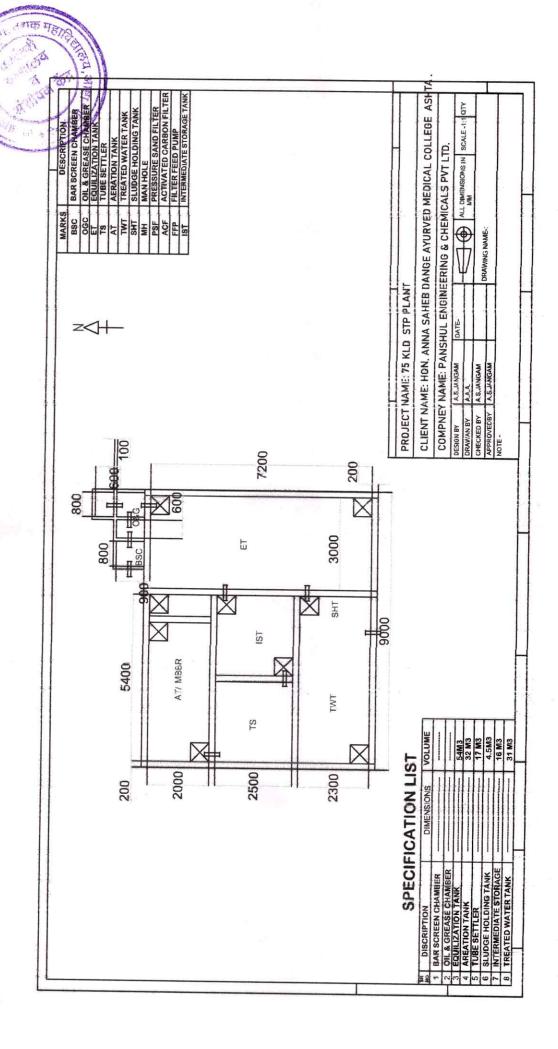
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Shri Annasaheb Dange Ayurved Medica. College, Ashla, Tal.Walwa, Dist.Sangli.



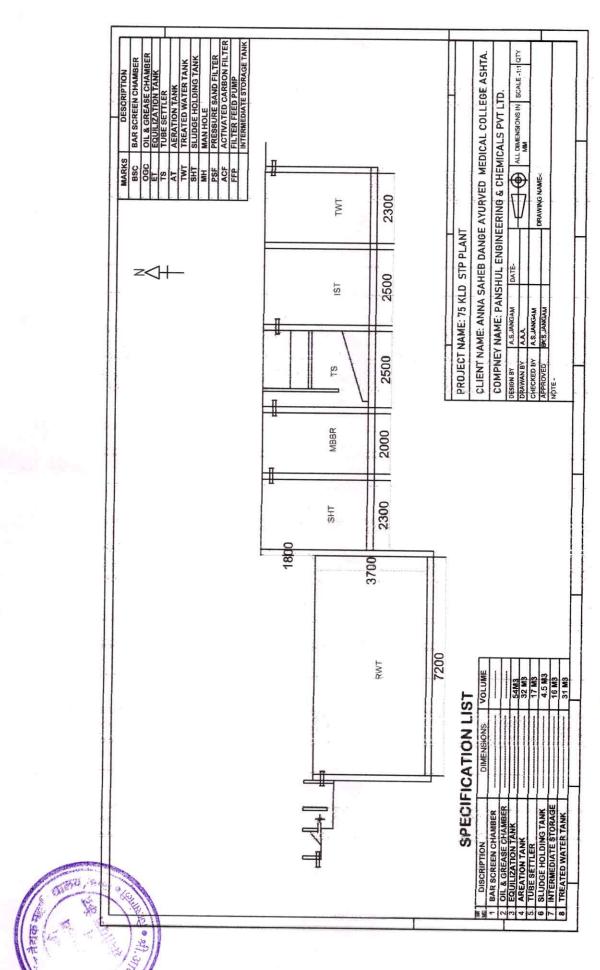


Shri Annasaheb Dange Ayurved Medical Initege Ashta, Tal Walwa, Dist Sanoli



FORINCIPAL 2215 14

Shri Annasaheb Dange Ayurved Medical College, Ashta, Tal Walwa, Dist.Sandii



SEPRINCIPATION 124

Shri Annasaheb Dange Ayurved Medical Chiege, Ashta, Tal Walwa, Dist. Sangii



#### Sant Dnyaneshwar Shikshan Sanstha's

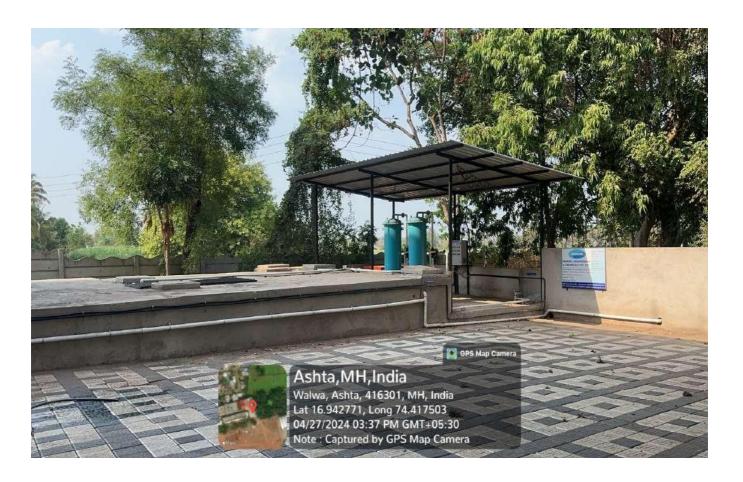
# Hon. Shri. Annasaheb Dange Ayurved Medical College & Post Graduate Research Center

A/p: Ashta, Tal.: Walwa, Dist: Sangli – 416 301

Website: www.adamcashta.com E-mail: <u>ashta.adamc@gmail.com</u>

ISO Certified 9001-2015,14000-2015

## **Sewage Treatment Plant**





Office Add: F. No. 106, I Wing, Ramya Factory Add: Sr. No. 1613, Uruli Devachi Nagari Society, Bibwewadi, Dist: Pune 037 Shewalewadi, Tal.Haveli, Dist: Pune 308 Email: admin@panshulengineering.com / project@panshulengineering.com Contact: 8999671236/9923918207

# TECHNICAL DATA SHEET

Shri Annasaheb Dange Ayurved Medical Ollege Ashta, Tal. Walwa, Dist. Sangli,



Office Add: F. No. 106, I Wing, Ramya | Factory Add: Sr. No. 1613, Uruli Devachi Nagari Society, Bibwewadi, Dist: Pune 037 | Shewalewadi, Tal.Haveli, Dist: Pune 308 | Email: admin@panshulengineering.com / project@panshulengineering.com Contact: 8999671236/ 9923918207

#### TREATMENT PHILOSOPHY

#### 1. DESIGN BASIS

The plant is designed to Treat sewage generated having following characteristics.

Nature of Waste Water	Sewage
Flow	75 m³ /day / Average

## DOMESTIC SEWAGE FROM TOWERS TOILET FLOW

] RAW SEWAGE PARAMETER	R( At the inlet of Collection tank / Septic tank)
pH	6.5 -8.5
COD	400 mg/lit
BOD (5 days @ 200C)	650 mg/lit
Suspended Solids	100 mg/lit
Oil & Grease	60 mg/lit

B] TREATED WATER PARAM	METER ( After tertiary Filtration system )
pH	6.0 – 7.5
BOD(5 days @ 20°C)	≤ 10 mg/lit
Suspended Solids	≤ 10 mg/lit
COD	≤ 10 mg/lit
Oil and Grease	≤ 5 mg/lit

Shri Annasaheb Dange Ayurved Medical College Ashta, Tal Walwa, Dist Sangli,



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#### 2. TREATMENT SCHEME

To have eco-friendly & natural treatment, this plant is designed based on the biological treatment concept. This means naturally occurring microbes (which are present in sewage water itself) removes or degrade the organic matter present in the sewage & at the end clean water is available for the non-potable usage or to dispose safely in the drainage or river bodies as per the norms.

#### \* PROCESS SCHEME

#### **Primary Treatment**

- · Bar screen chamber
- · Oil and Grease Chamber
- · Equalization tank
- Primary Clarifier

#### **Secondary Treatment**

- · Aeration tank
- Secondary Clarifier
- Intermediate storage Tank

#### **Tertiary Treatment**

- Filtration
- Disinfection

#### **Sludge Treatment**

- Sludge Holding Tank
- Sludge Drying Bed

Shri Annasaheb Dange Ayurved Medica College, Ashta, Tal Walwa, Dist Sangli



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#### PRIMARY TREATMENT:-

**Screening:** This is the first units of the plant in which large or floating materials in the Sewage gets arrested and blockage or choking of the downstream equipment's can be avoided. This arrested material will be removed manually and then will be disposed of suitably

Oil & Grease trap: Sewage sometimes gets waste water from pantries or kitchen which contains free oil. This oil if not removed then creates the problem of scum accumulation and affects the functioning of microbes.

To avoid this, oil & Grease trap is provided after the bar screen, where free floating oil is arrested prior to entry in the plant. Accumulated oil will be removed periodically and disposed of properly.

**Neutralization**: In neutralization tank PH Valve can be control and water can be neutralize by addition of proper amount of chemicals and proper mixing with the aid of agitator

**Equalization**: To absorb variation in quantity and quality of Sewage and to provide uniform flow at the downstream treatment process, a collection or equalization tank is provided. This will avoid shock loading and process upsets of the treatment plant. To avoid settling of suspended solids in this tank, continues air agitation is provided.

**Primary Clarifier:-**Gravity overflow from the Flocculation Tank is collected in the Primary Clarifier tank. In this Clarifier tank, generated sludge from the Flocculation and Coagulation Undergoes a gravity settling. Clear supernatant from settling tank will flow by gravity to and Aeration tank.

#### SECONDARY TREATMENT

Biological Treatment: This is the main section of the plant where degradation of organic pollutants with the help of aerobic micro-organism takes place. To provide higher surface area for micro-organism, floating media is provided. On which micro-organism growth takes place. This makes bioreactor is of hybrid concept in which both suspended growth as well as attached growth principal for micro-organism is achieved. Due to higher population of micro-organism, effective volume of bioreactor reduced drastically as compared to conventional aeration tanks .To maintain the aerobic condition in the bioreactor, air supply arrangement is provided by means of aeration equipment which has high oxygen transfer efficiency.

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**AEROBIC PROCESS:** Aerobic biological treatment involves microbial degradation and oxidation of waste in the presence of oxygen. Treatment of dairy wastewater by aerobic processes includes processes such as activated sludge, trickling filters, aerated lagoons, or a combination of these.

All compounds of dairy wastewater are biodegradable except protein and fats which are not easily degraded. Amongst the various aerobic technologies, Moving Bed Bio film Reactor (MBBR) technology

Moving Bed Bio film Reactor (MBBR) processes improve reliability, simplify operation, and require less space than traditional wastewater treatment systems. MBBR seems to be the most promising technology for treatment of dairy wastewater. It is a fill- and draw-activated sludge system. In this system, wastewater is added to a MBBR system treated to remove undesirable components, and then discharged. Equalization, aeration, and clarification can all be included in this system. Hence, The treatment efficiency of MBBR depends on the operating parameters such as phase duration, hydraulic retention time (HRT) and organic loading, temperature, mixed liquor-suspended solid (MLSS), pH, dissolved-oxygen concentration, and the strength of the wastewater. More than 90% COD removal efficiency was achieved when COD concentration was varied from 400 to 2500 mg/l when a bench scale aerobic MBBR is used to treat milk factory wastewater. The optimum dissolved oxygen in the reactor was 2 to 3mg/l and the mixed-liquor volatile-suspended solids (MLVSS) were around 3000 mg/l. Sometimes a membrane is Used in to MBBR When required. Nitrogen and phosphorus removal were found to be 96 and 80%, respectively; whereas BOD removal was found to be in the range of 97-98%. Nitrogen is the main source of eutrophication. In this regard, the complete oxidation of ammonia during the treatment is favourable.

**Secondary Clarifier:** Gravity overflow from the bioreactor is collected in the tube settler tank. In this settling tank, generated sludge from the bioreactor undergoes a gravity settling. Clear supernatant from settling tank will flow by gravity to a chlorine contact tank. To reduce the plan area of settling tank, tube modules are placed in this tank to increase the settling area of the tank. Since this tank is a hopper bottom tank due to which there is no need of sludge scrapping mechanisms.

Inter mediate storage Tank: The overflow from the Secondary Clarifier is collected in Intermediate storage tank before passing thru Pressure Sand Filter and Activated carbon filter.

#### TERTIARY TREATMENT :

**Disinfection:** Hypo solution is added for disinfection of the intermediate storage tank. The disinfected water is pumped through Pressure sand filter, for removal of the residual suspended solids. And harmful bacteria in the treated water as well as to remove the refractory organics from treated water.

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#### Filtration:

Secondary treated water will be further passed through sand media filter followed by activated carbon filter.

Filtered water will be collected in the Treated water Storage tank from where it will be for desired non potable application. Backwashed water from filters will return back to equalization tank.

#### Sludge Treatment:

Settled sludge from tube settler will be removed by pumping to the sludge holding tank or Transfer to sludge drying bed.

#### If Sewage treated & operated properly this Sewage treatment plant will give enormous benefits such as

It will avoid the water pollution

- It will help us to give hygienic surrounding

After required treatment, treated water can reduce your 60-70 % fresh water requirement, which otherwise we use for toilet flushing, gardening, construction etc. Thus we can save a lot on water expenditure as well as provide us a remedy on present water crises.

Being a water recycling & conservation system, commercial establishment gets depreciation benefits for promoting green & eco-friendly development.

Above all, we will be ensuring safe & hygienic environment to our society.

## Advantages of treatment scheme

This plant will produce the treated water which can be recycled back.

This plant is based on biological principle hence no need use of any excessive hazardous chemicals for the main degradation process.

Being an attached growth process there is no need of Return sludge recycling.

Due to media technology, foot print area required for the plant is very less.

Due to smaller unit sizes, civil construction cost & overall project cost is very less

Due to efficient aeration system, electrical power requirement is very low. Due to user friendly equipment, plant maintenance is very less.

Due to inbuilt automation, plant machinery life is high & ensures trouble free operation

All process rotating electromechanical equipment's are provided with standby equipment to ensure the uninterrupted operation.

Due to effective after sales service from our qualified staff, maintenance issues to the owner are less.

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#### LEVEL OF AUTOMATION:

The plant is designed based on moving media aerobic process which needs no skilled manpower. The operations involved are ON / OFF of the pumps and air blower, sludge drain, filter backwash. These operations can be done by the security or gardener. The pumps are provided with level switch for ON /OFF based on PLC Program & the tank water level and to avoid dry run and mechanical damage. This is SEMI-AUTOMATIC.

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## **TECHNICAL SPECIFICATIONS**

#### 1. BAR SCREEN

Quantity	1 No.
Make	PE
Size	H 600 x L 600 x W 500 mm( ASSUME)
MOC	SS

#### 1. NEUTRALISATION CUM OIL & GREASE CHAMBER

Neutralization Tank	IN RCC	
Make	(Client scope)	
Quantity	1 Nos.	

#### 2. SEWAGE TRANSFER PUMP

Туре	Self-Priming, non-clog, centrifugal, Coupled	
Capacity	5 m³/hrs. @ 10 m head	
Duty	To pump Sewage Water	
Accessories	Standard Base Frame	
Power	1 HP / 3 Phase	
MOC	CI	
Make	Kirloskar/CRI	
Quantity	2 No.(1W+1SB)	

#### 3. AIR BLOWER FOR ARIATION

Air Blower Type	Twin Lobe
Capacity	75 m <sup>3</sup> /hrs. air flow @ 0.4 Kg/cm <sup>2</sup>
Duty	Air supply to AT, ET, SHT, TWT
Air Blower Make	Everest / A-1/ Akash / Equiv.
MOC	CI
Motor Rating	2.25 KW
Motor Make	Crompton / Siemens /Equiv.
Quantity	2 No.(1W+1SB)

#### 4. AIR GRID AND DIFFUSER

Quantity	1 Lot
Diffuser Member	1 m in length/ 14" round shape
Duty	Uniform air distribution & oxygen transfer
MOC	PVC Sch 40
Туре	Tubular

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## 5. MEDIA FOR BIORECTOR (MBBR)

Shape	Cylindrical	
MOC	PVC	
Quantity	1 Lot	

#### 6. TUBE MEDIA

Shape of Tube	Square
Angle of Tube	450
Length	1 m
Thickness	1.0 To 1.2 mm
Working Temp	50°C
MOC	PVC
Make	MM Aqua / Marvelous / Equiv.
Quantity	1Lot

#### 7. SLUDGE PUMP

Туре	Self-Priming, non-clog, Centrifugal
Capacity	3 m <sup>3</sup> /hrs. @ 10 m head
Duty	To pump sludge to IST
Accessories	Standard Base Frame
Power	1 HP /3 Phase
MOC	CI CI
Make	Kirloskar / CRI / Equiv.
Quantity	1 No (1W)

#### 8. CHLORIN DOSING SYSTEM

Quantity	1No.	
MOC	HDPE	
Tank Capacity	50 lit	
Make	E-dose / Minimax / Equiv.	
Power	0.025 kW	
Capacity	6 LPH @ 4 Kg/cm2	
Туре	Electronic Diaphragm	

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#### 9. FILTER FEED PUMP

Type	Self-priming, Mon bloc, Centrifugal
	5 m <sup>3</sup> /hrs. @ 28 m head
Duty	To pump water from intermediate tank to filter
Accessories	Standard Base Frame
Power	1 HP / 3 phase
MOC	CI
Make	Kirloskar / CRI / Equiv.
Quantity	2 No.(1W+1SB)

#### 10. PRESSURE SAND FILTER

Capacity	5 m <sup>3</sup> /hrs.
Size	500 X 1500 mm
MOC	MSEP
Make	PE
Pipeline Size	40 NB
Filter Media	Sand
Filter media Quantity	450 KG
Valve Type	Multiport Valve
Valve Size	40 NB
Quantity	1 No.

#### 11. ACTIVATED CARBON FILTER

Quantity	1 No.
Valve Size	40 NB
Valve Type	Multiport Valve
Filter media Quantity	300 KG + 250 kg
Filter Media	Sand + Carbon
Pipeline Size	40 NB
Make	PE
MOC	MSEP
Size	500 X 1500 mm
Capacity	5 m <sup>3</sup> /hrs.

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#### 12.SLUDGE BIO FILTER

Quantity	2 No.
Filter media Quantity	100 KG
Filter Media	Coco cake
Make	PE
MOC	FRP
Size	1000mm l X 1000mm w x 400mm H
Capacity	100 KG

#### 13. INSTRUMENTS

Pressure gauge	8 no
Make	Waree / equiv.
Level sensor	2 Nos.
Flow meter	2 Nos.
Make	Aster/ equivalent

## 14.INTERCONNECTING PIPING AND FITTING

MOC	White PVC Sch. 40	
Quantity	1 lot within the Battery Limit	
Make	Ashirwad / Astral / Equiv.	

## 15. ELECTRICAL EQUPMENTS

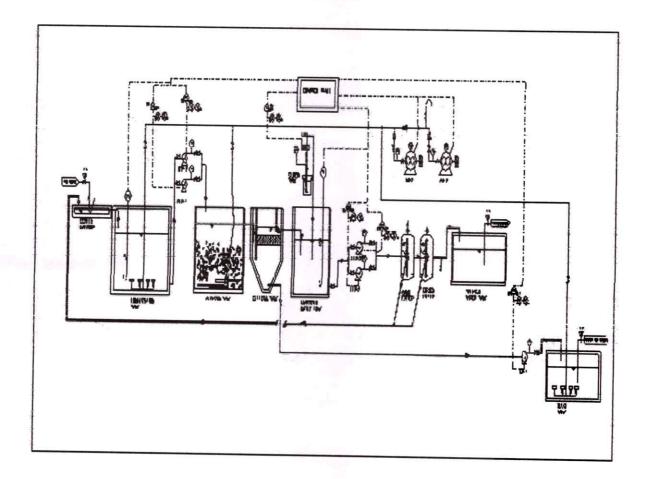
Control Panel type	Semi-Automatic PLC base
Quantity	1 no
Cabling	1 Lot
Cable Trey	1 Lot
PLC	1 No.
Make	L & T / Finolex / Polycab/Equiv.

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#### FLOW DIAGRAM

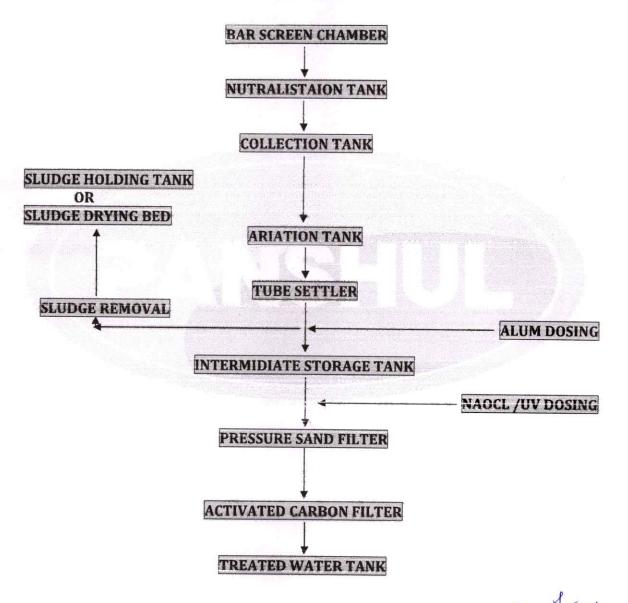


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#### STP SCHEMATIC FLOW CHART



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