6.3.1 Wastewater Treatment

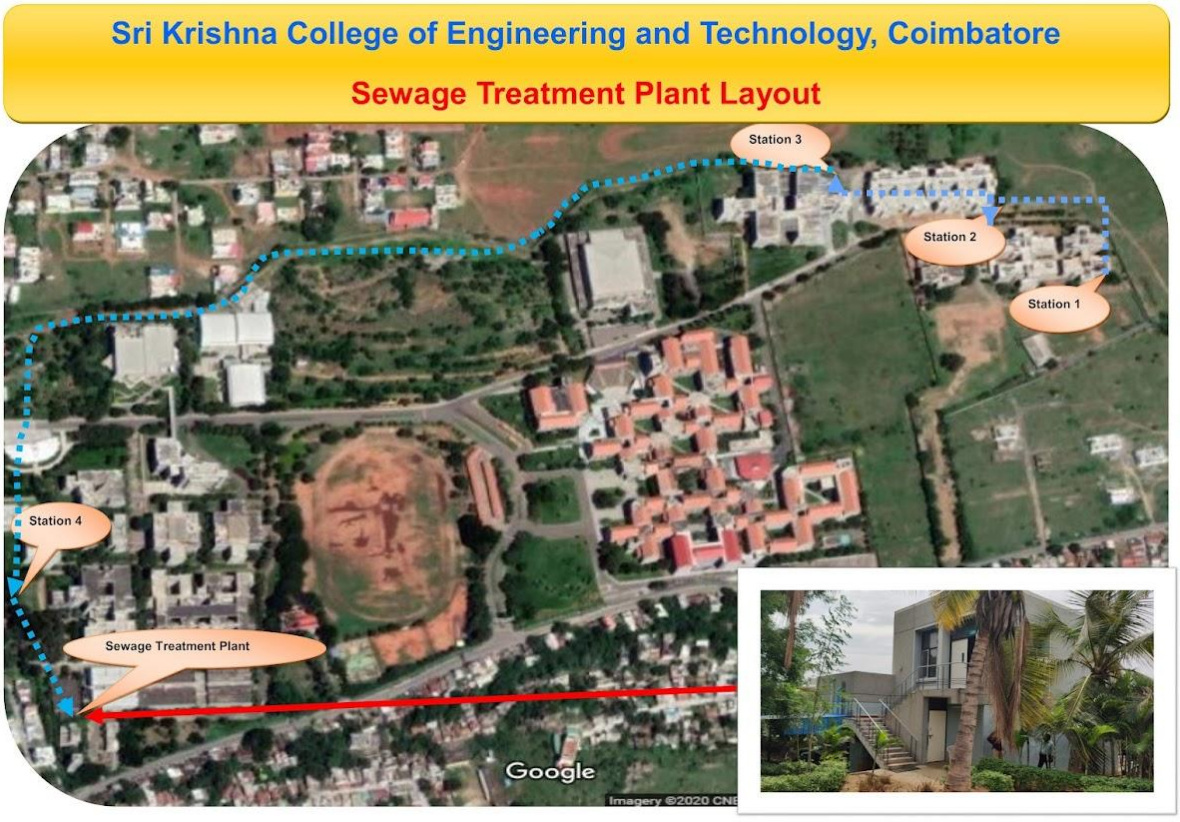


6.3.1 Waste water treatment

Process in place to treatwaste water

A 450 KLD sewage treatment plant is situated on campus to recycle the wastewater that is released from the canteen, restrooms, and laundry facilities. The treated wastewater is reused for gardening, toilet flushing, and vehicle cleaning.

The on-campus Sewage Treatment Plant (STP), situated behind the laboratory block, treats the liquid waste generated by the canteens, mess, and restrooms. The recycled water, which is enhanced with nutrients that promote plant development, is used for gardening purposes.



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SEWAGE TREATMENT PLANT











6 CLEAN WATER AND SANITATION

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Sri Krishna College of Engineering and Technology, Coimbatore

Collection Station Pictures



Collection Station 1 (10° 56' 21.3648" N, 76° 57' 43.6716" E)
Located beside the Hall of Residence Men (E-block)



Collection Station 2 (10° 56' 23.4024" N, 76° 57' 41.31" E)
Located adjacent to the Hall of Residence Men (B-block)



Collection Station 3 (10° 56' 24.6984" N, 76° 57' 37.0872" E)
Located backside of the Hall of Residence Men (Mess block)

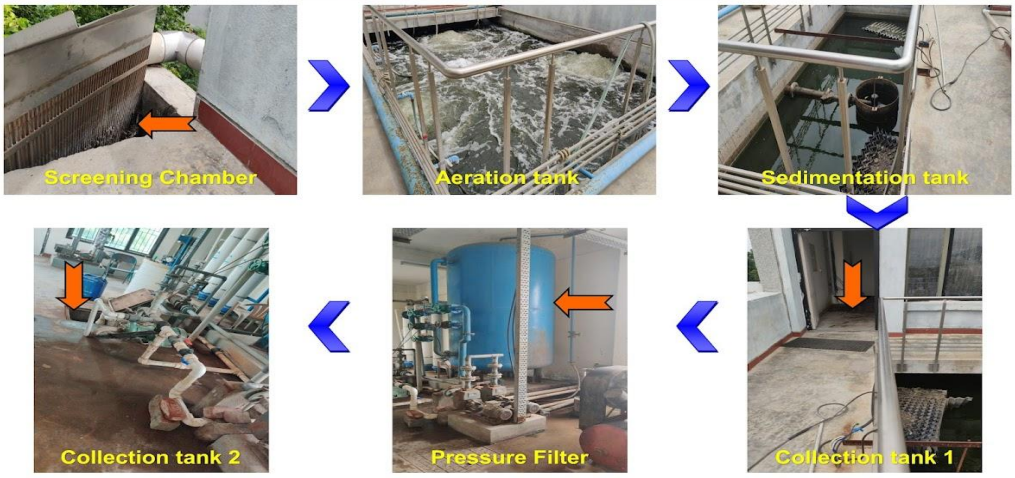


Collection Station 4 (10° 56' 10.9248" N, 76° 57' 19.3752" E)
Located backside of the C3 block men's restroom

The treatment process involves several stages:

Sri Krishna College of Engineering and Technology, Coimbatore

Sewage Treatment Plant Layout



6 CLEAN WATER AND SANITATION

Stage 1: Screening Chamber



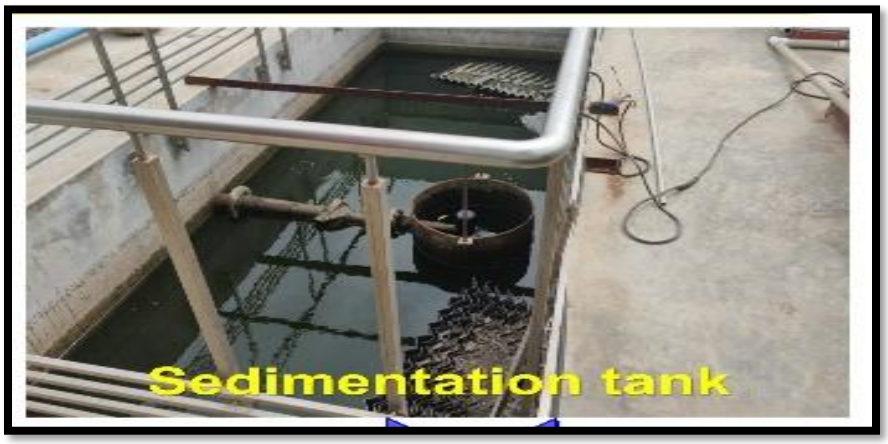
Screening chamber is the first unit operation used at STP. Screening removes objects such as rags, paper, plastics, and metals to prevent damage and clogging of downstream equipment, piping, and appurtenances. The screened wastewater then flows to an aerated grit chamber. Some modern wastewater treatment plants use both coarse screens and fine screens.

Stage 2: Aeration Tank



Waste water ***Aeration*** is the process of adding air into wastewater to allow aerobic bio-degradation of the pollutant components. It is an integral part of most biological wastewater treatment systems. Unlike chemical treatment which uses chemicals to react and stabilize contaminants in the wastewater stream, biological treatment uses microorganisms to degrade wastewater contaminants.

Stage 3: Sedimentation Tank



Sedimentation tank allows the particles in suspension in water to settle out of the suspension under the effect of gravity. The particles that settle out from the suspension become sediment, and in water treatment this residue is known as sludge.

Stage 4: Collection Tank 1



Collection tank 1 collects the aerated water flowing from the aeration tank. This collection tank 1 acts as a storage reservoir of the water which is to be fed into the pressure filter.

Stage 5: Pressure Filter



A ***Pressure filter*** is a closed tank with a single or a combination of filter media for removal of one or several contaminants. Sand-bed filters are operated under pressure in closed vessels to give high-capacity service.

Stage 6: Collection Tank 2



Collection tank 2 collects the filtered water flowing from the Pressure Filter. This collection tank 2reserves the treated water which will be supplied for campus re-use in Gardening, Vehicle Washing and Rest rooms (Toilet Flushing).

TREATED WASTE WATER QUALITY TEST REPORT

Greenlink Analytical and Research Laboratory (India) Private Ltd.
S.F. No. 414/1, Tex Park Road, Opp. Good Luck Syndicate,
Civil Aerodrome Post, Coimbatore - 641 014. Tamilnadu, INDIA.
Tel : +91 422 2901999 | Mob : +91 95245 81999, +91 95249 81999
Email : enquiry@greenlinklabs.com, info@greenlink.in

NABL ISO / IEC 17025:2017 | ISO 9001:2015

TEST REPORT

Report No.	GLARL/STP/2640	**Date**	02-09-2024

Details of Customer

Customer Name and Address	SRI KRISHNA COLLEGE OF ENGINEERING & TECHNOLOGY Kuniyamuthur, Coimbatore – 641 008.
Customer Reference	HAYMAN ENVIROMENTAL ENGINEERING PVT LTD

Details of Sample

Sample Received Date		**Sample By**	Customer
Nature of Sample	STP – Treated water	**Description**	Clear
Sample Code	B	**Received Condition**	Packed in a PET bottle
Analysis Started on		**Analysis Completed on**	

Result of Analysis

S. No	Parameter	Test Method	Unit	Results	Standard
1.	pH @ 25°C	Standard. Methods 23rd Ed.4500 H^+ B	-	7.384	5.5-9.0
2.	Total Suspended Solids	Standard. Methods 23rd Ed.2540 -D	mg/L	14	30
3.	Biochemical Oxygen Demand (3 days @ 27°C)	IS 3025 Part 44-1993 (RA 2009)	mg/L	12	20
4.	Chemical Oxygen Demand	Standard. Methods 23rd Ed.5220 -B	mg/L	75	100
5.	Phosphate (as PO_4)	Standard. Methods 23rd Ed.4500 P -D	mg/L	0.892	1.0
6.	Total Nitrogen	Standard. Methods 23rd Ed.4500 N	mg/L	3.14	15

BDL- Below Detectable Level ***DL-Detectable Level***

*****End of Report******

Authorized Signatory
(M.Amsaveni)
Technical Manager

STP Incharge

Dr.P.Muthupriya, M.E.,(Struct),Ph.D.,
Professor and Head, Department of Civil Engineering,
Sri Krishna College of Engineering and Technology,
Kuniamuthur, Coimbatore - 641 008.
Mobile No: +91 96777 72322
E-Mail: hodcivil@skcet.ac.in

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RAW WASTE WATER QUALITY TEST REPORT

Greenlink Analytical and Research Laboratory (India) Private Ltd.
S.F. No. 414/1, Tex Park Road, Opp. Good Luck Syndicate,
Civil Aerodrome Post, Coimbatore - 641 014, Tamilnadu, INDIA.
Tel : +91 422 2901999 , Mob : +91 95245 81999, +91 95249 81999
Email : enquiry@greenlinklabs.com, info@greenlink.in

NABL ISO / IEC 17025 2017 ISO 9001 2015

TEST REPORT

Report No.	GLARL/STP/2640	Date	30-08-2024

Details of Customer

Customer Name and Address	SRI KRISHNA COLLEGE OF ENGINEERING & TECHNOLOGY Kuniyamuthur, Coimbatore – 641 008.
Customer Reference	HAYMAN ENVIROMENTAL ENGINEERING PVT LTD

Details of Sample

Sample Received Date	30-08-2024	Sample By	Customer
Nature of Sample	STP – Raw water	Description	Pale yellow, turbid liquid
Sample Code	A	Received Condition	Packed in a PET bottle
Analysis Started on		Analysis Completed on	

Result of Analysis

S. No	Parameter	Test Method	Unit	Results	Standard
1.	pH @ 25°C	Standard. Methods 23rd Ed.4500 H+ B	-	8.12	4.5 – 7.5
2.	Total Suspended Solids	Standard. Methods 23rd Ed.2540 -D	mg/L	168	200 - 300
3.	Biochemical Oxygen Demand (3 days @ 27°C)	IS 3025 Part 44-1993 (RA 2009)	mg/L	92	200 – 300
4.	Chemical Oxygen Demand	Standard. Methods 23rd Ed.5220 -B	mg/L	478	300 – 500
5.	Phosphate (as PO_4)	Standard. Methods 23rd Ed.4500 P -D	mg/L	5.824	10
6.	Total Nitrogen	Standard. Methods 23rd Ed.4500 N	mg/L	19	75

BDL- Below Detectable Level *DL-Detectable Level*

****End of Report****

CBE - 14

Authorized Signatory
(M.Amsaveni)
Technical Manager

Varified.
9/9/24
STP Incharge

11/9/24
Dr.P.Muthupriya, M.E.,(Struct),Ph.D.,
Professor and Head, Department of Civil Engineering,
Sri Krishna College of Engineering and Technology,
Kuniamuthur, Coimbatore - 641 008.
Mobile No: -91 96777 72322
E-Mail: hodcivil@skcet.ac.in

6 CLEAN WATER AND SANITATION

SEWAGE TREATMENT PLANT DETAILS

Treatment Plant Capacity = 450 KLD

Total Quantity of sewage water at inlet of aeration tank = 20500 litres / hour

Total plant operation hours = 20 hours

Total treated quantity/ day = 410 KLD

HAYMAN ENVIROMENTAL ENGINEERING PVT LTD - ERODE

SKCET - SEWAGE TREATMENT PLANT - 450 KLD PLANT - REPORT

Month	AUGUST'24	No of pumps	Plant	Date : 31/08/2024
S.No	Process		Status/Condition	Requirements
1	Collection tank - feed (sub)pump	3	Good in working.	Station 4 want to fix a screener.
2	Biological		Sludge load 850/1000 mg/l.	
	i) Diffuser		Good in working	-
	ii) Blower	2	Good in working	
3	Clarifier System		Lamella sheets and clarifier drum is good working condition	-
4	Recycle pump - sub pump	2	Good in working	
5	Filter feed pump - monoblock	2	Good in working	
6	PSF & ACF Filter Media/carbon media	2	No chock good in working	
7	PSF & ACF Filter pressure gauge	3	Good in working.	In PSF want to change a flange-1 nos
8	PSF & ACF Filter valve and other valves	10 + 4	All valves are in good condition	-
9	Dosing pump & tank		Manual dosing is given	-
10	Filter press system		Good in working	During filterpress operation need one person required for sludge handling(sludge drying,Packing,weighing and storing)
11	UV System	2	Good in working.	
12	Garden Motor	1	10hp - motor- Good in working.	
13	General remarks	Flow meter required(Quotation given).		
SITE INCHARGE		PLANT INCHARGE		MANAGEMENT STAFF

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STP OPERATING AND MAINTENANCE INVOICE

TAX INVOICE (ORIGINAL FOR RECIPIENT)

Hayman Enviromental Engineering (P) Ltd
1st Floor A, Sree Kumaran Silver Park,
Perundurai Main Road
Opp AET School,
Vallipurathanpalayam Post
Erode-638112
GSTIN/UIN: 33AADCH9320C1Z2
State Name : Tamil Nadu, Code : 33
Contact : 04242556466
E-Mail : haymaniniernational@gmail.com

Invoice No: **160**	Dated: **3-Sep-24**
Delivery Note	Mode/Terms of Payment
Reference No. & Date	Other References
Buyer's Order No.	Dated
Dispatch Doc No.	Delivery Note Date
Dispatched through	Destination: **COIMBATORE**
Terms of Delivery	

Consignee (Ship to)
Sri Krishna College of Engineering and Technology
BK Pudur, Sugunapuram East, Coimbatore - 641042
State Name : Tamil Nadu, Code : 33

Buyer (Bill to)
Sri Krishna College of Engineering and Technology
BK Pudur, Sugunapuram East, Coimbatore - 641042
State Name : Tamil Nadu, Code : 33

Sl No	Particulars	HSN/SAC	GST Rate	Quantity	Rate	per	Amount
1	**Operating and Maintenance** *Rs.23375 x 3 Persons* *August 2024*	998337	18 %				**70,125.00**
	CGST 9%				9	%	**6,311.25**
	SGST 9%				9	%	**6,311.25**
	ROUND OFF						**0.50**
	Total						**₹ 82,748.00**

PRINCIPAL
SRI KRISHNA COLLEGE OF
ENGINEERING AND TECHNOLOGY
KUNIAMUTHUR
COIMBATORE - 641 008

Amount Chargeable (in words) E. & O.E
Indian Rupees Eighty Two Thousand Seven Hundred Forty Eight Only

HSN/SAC	Taxable Value	Central Tax Rate	Central Tax Amount	State Tax Rate	State Tax Amount	Total Tax Amount
998337	70,125.00	9%	6,311.25	9%	6,311.25	12,622.50
Total	**70,125.00**		**6,311.25**		**6,311.25**	**12,622.50**

Tax Amount (in words) : **Indian Rupees Twelve Thousand Six Hundred Twenty Two and Fifty paise Only**

Company's Bank Details
A/c Holder's Name : **Hayman Enviromental Engineering (P) Ltd**
Bank Name : **STATE BANK OF INDIA C/A**
A/c No. : **36071676728**
Branch & IFS Code : **URC NAGAR,ERODE & SBIN0012779**

Declaration
We declare that this invoice shows the actual price of the goods described and that all particulars are true and correct.

Customer's Seal and Signature

Sadhana 9/9/24
M.S Sadheesh
TP I/c

11/9/24

for Hayman Enviromental Engineering (P) Ltd

Authorised Signatory

SUBJECT TO ERODE JURISDICTION
This is a Computer Generated Invoice

Dr.P.Muthupriya, M.E.(Struct) Ph.D.
Professor and Head, Department of Civil Engineering.