

## Activities

Under the MOU's between Indore Institute of Science and Technology and Enviroessentials Pvt. Ltd, Indore

### 1. Industrial Training

Enviroessentials Pvt. Ltd. provides free industrial training for our students (**Ms. Kavya Mishra, Mr. Sanjay Chouhan, Mr. Ayush Chouhan, Mr. Bisal Samantha and Mr. Tarun Khedre**) from **9th Nov. 2021 to 8th Dec. 2021** in the environment field and after completion, students get real industry exposure by working on real live project.



DATE:-08.12.2021

### To WHOM IT MAY CONCERN

This is to certify that **Miss. Kavya Mishra** pursuing **B. Tech (Chemical Engg)-VII Semester** from **Indore Institute of Science and Technology**, has undergone industrial training in our organization from **9/11/2021 to 8/12/2021**.

During this period, we found her hardworking and committed towards work and we wish her all the best in her future endeavors for her life.

With Best Wishes

For Enviro Essentials



Mr. Ajit Galkwad

Director



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Corporate Office: C-10, 3rd Floor, No. 2,  
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✉ Sales@enviroessentials.in  
🌐 www.enviroessentials.in



DATE:-08.12.2021

### To WHOM IT MAY CONCERN

This is to certify that **Mr. Sanjay Chouhan** pursuing **B. Tech (Chemical Engg)-VII Semester** from **Indore Institute of Science and Technology**, has undergone Industrial training in our organization from **9/11/2021 to 8/12/2021**.

During this Period, we found his hardworking and committed towards work and we wish him all the best in his future endeavors for his life.

With Best Wishes

For Enviro Essentials

  
Mr. Ajit Gaikwad  
Director



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DATE:-08.12.2021

## To WHOM IT MAY CONCERN

This is Certify that **Mr. Ayush Chouhan** pursuing **B. Tech (Chemical Engg)-VII Semester** from **Indore Institute of Science and Technology**, has undergone industrial training in our organization from **9/11/2021 to 8/12/2021**.

During this Period, we found his hardworking and committed towards work and we wish him all the best in his future endeavors for his life.

With Best Wishes

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MR. Ajit Gaikwad

Director



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DATE: 08.12.2021

### To WHOM IT MAY CONCERN

This is to certify that **Mr. Bisal Samanta** pursuing **B. Tech (Chemical Engg)-VII Semester** from **Indore Institute of Science and Technology**, has undergone Industrial training in our organization from **9/11/2021 to 8/12/2021**.

During this Period, we found his hardworking and committed towards work and we wish him all the best in his future endeavors for his life.

With Best Wishes

For Enviro Essentials



Mr. Ajit Gaikwad

Director



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DATE:-08.12.2021

## To WHOM IT MAY CONCERN

This is Certify that **Mr. Tarun Khedre** pursuing **B. Tech (Chemical Engg)-VII Semester** from **Indore Institute of Science and Technology**, has undergone Industrial training in our organization from **9/11/2021 to 8/12/2021**.

During this Period, we found his hardworking and committed towards work and we wish him all the best in his future endeavors for his life.

With Best Wishes

For Enviro Essentials



Mr. Ajit Gaikwad

Director



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**Date: 14/01/2022**

# **Approval Letter**

IIST is known for giving in hand practical experience to the students. So, in order to give practical knowledge to students of chemical engineering, Chemical Engineering department is planning to give installation of Sewage Treatment Plant (STP) for our existing MOU with Enviroessential Pvt. Ltd. In this student will get exposure at time of installation of STP and also they can solve the practical problem when Sewage Treatment Plant (STP) is in service with help of Enviroessential Pvt. Ltd. (MOU).

Kindly approve the above Sewage Treatment Plant (STP) Establishment in our Institute.

**Head**  
Department of Chemical Engineering



2. **STP Plant Establishment in our Institute:** Sewage Treatment Plant (STP) established in the Institute by the Enviroessential Pvt. Ltd.. The Work Order/Purchase Order are as follows.

## Shail Educational and Welfare Society

### Work Order

PO No: SEWS/WO/2021-22/282  
PR./ CIVIL P/83

Date: - 17.01.2022

To,

**M/s ENVIRO ESSENTIALS**

Mr. Ajit kumar bhaskar gaikwad

41, Naykunar, Wadarwadl, Ahmednagar.

Maharashtra (414001)

Local Add. Branch Office 19, Mangal NX Besides petrol pump.

Sukhliya, Indore (M.P.-452010)

Mob.9039433403, 9503221150, 7709386770

Subject : Work order for Sewage treatment Plant installation.

Dear Sir,

With reference to your quotation, we are pleased to award you work order for the same

#### Basics of Design:-

#### Sewage Treatment Plant:-

a) Plant Capacity	:	100KLD (m <sup>3</sup> /day)
b) Operation Time	:	20 hrs.
c) Hourly Flow (Feed to STP)	:	5m <sup>3</sup> /hr
d) Mode of Operation	:	Manual.
e) Process	:	MBBR Technology

#### 1. Characteristics of Raw & Treated Sewage

The characteristics of raw sewage assume are given below:

Sr. No.	Parameters	Unit	Raw Sewage	Treated Sewage
1	pH	-	5.5 - 8	6.5 - 7.2
2	Biochemical Oxygen Demand(BOD)	mg/l	300	≤ 10
3	Chemical Oxygen Demand(COD)	mg/l	400	≤ 30
4	Total Suspended Solids(TSS)	mg/l	250	≤ 30
5	Oil & Grease	mg/l	15	≤ 5

*Amalika*

*P. Singh*

*Sanjay*  
17/1/2022

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## 1. Scheme of Treatment:

This sewage treatment plant will be designed for a capacity of 100 KLD. Sewage treatment plant scheme will be based on an Aerobic Process.

### > Pretreatment:

Pretreatment will consist of Screening, Oil & Grease removal & Flow equalization.

### > Secondary/Biological Treatment:

Secondary Treatment process will consist of Biological Aeration (MBBR) and Biological Clarification.

### > Tertiary Treatment:

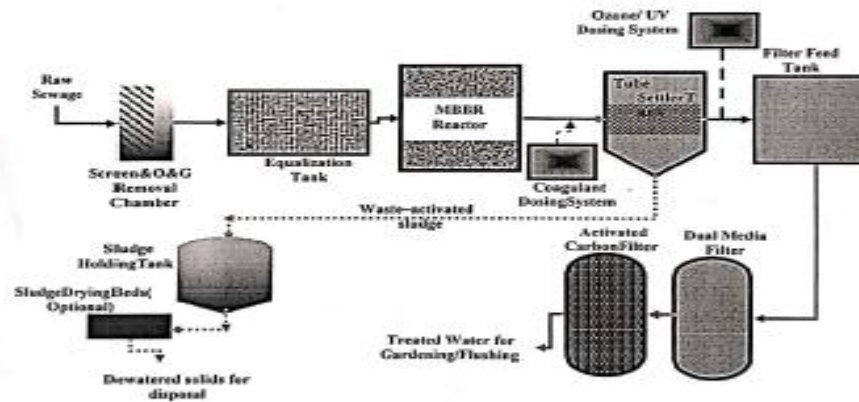
Tertiary treatment process will consist of Media (Sand & Carbon) Filtration & Disinfection.

### > Sludge Treatment:

Sludge treatment process will consist of Sludge Drying Bed.

## Plant Data Details:

### 1. Process Flow Diagram STP



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## 2. Process Description Sewage Treatment Plant:

The sewage treatment plant will be designed for a capacity of 100 KLD. The scheme of treatment plant will be based on MBBR Technology. Raw sewage will be passed through fine manual bar screen store move solids, floatables, and Oil & Grease chamber for removal of oil & grease from raw sewage before passing to equalization tank. The sewage then will be collected in Tank. The Equalization cum collection Tank will be provided with aeration by blowers for mixing and aseptic conditions. Raw sewage from equalization Tank will be lifted by Raw Sewage Lifting Pumps to MBBR Aeration Tank. Aeration tank is provided with Aeration Systems for biological aeration purpose with MBBR Media.

In the aeration tank oxidation of biological matter occurs. The aerobic bacteria present in activated sludge help in digestion of organic matter degradation for reduction of BOD. Aerobically digested sewage water is then passed to secondary clarifier where it biological Floes formed will be removed and separated by means of gravity. The excess bio sludge is sent sludge drying bed. Clarified water is then passed through multimedia and activated carbon filters for removing turbidity by means of Filter Feed Pumps. Multimedia filtration removes fine particulate and suspended solids while activated carbon filter removes odour and organic traces. Ozonation / UV treatment issued for disinfection of treated water.

## 3. Scope of Supply:

### Electro-Mechanical Equipments:

Sr. No.	Description	Quantity
1.	Manual Bar Screen	1No.
2.	Raw Sewage Lifting Pumps	2No.
3.	Blowers	2No.
4.	Air Diffusion Grid For Equalization & Aeration and sludge Holding Tank	1 lot
5.	Air Diffusers for Aeration Tank	1 lot
6.	MBBR Media	1Lot
7.	Tube Settler Media	1No.
8.	Sludge Recycle Pump	2No.
9.	Disinfection system	1No.
10.	Filter Feed Pump	2No.
11.	Dual Media Filter	1No.
12.	Activated Carbon Filter	1No.

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## 4. Instrumentation and Controls:

Sr.No.	Description	Quantity.
1	Electrical Panel	1No.
2	Pressure gauge	As per Requirement
3	Level Switch	0No.
4	Flow Meter	1No.

## Technical Specifications of Electro-Mechanical Equipments:

### 1. Manual Bar Screen-

Sr. No.	Description	Unit	Specification
1	Quantity	Nos.	1
2	Size of Bar	mm	10
3	MOC	-	MSEP/GI/SS316
4	Make	-	EE

### 2. Blowers for Equalization Tank & Aeration Tank-

Sr.No.	Description	Unit	Specification
1	Quantity	Nos.	2
2	Air Capacity	m <sup>3</sup> /hr.	90
3	Power	HP	3
4	Motor Speed	rpm	1440
5	Make	-	Everest/Equi.

### 3. Air Diffusion Grid for Equalization Tank-

Sr.No.	Description	Unit	Specification
1	Quantity	Nos.	1 lot
2	MOC	-	UPVC
3	make	-	Astral/Finolex

### 4. Raw Sewage Lifting Pump-

Sr.No.	Description	Unit	Specification
1	Quantity	Nos.	2
2	Capacity	m <sup>3</sup> /hr.	5.0
3	Head	m	12
4	Power	HP	1.0
5	Make	-	Kirloskar /Lubi

### 5. Air Diffusion Grid for Aeration Tank + Diffusers -

Sr. No.	Description	Unit	Specification
1	Quantity	Nos.	1
2	MOC	-	UPVC
3	Make	-	Astral/Finolex/equivalent
	Diffusers		
4	Quantity	Nos.	8Nos
5	Type	-	Tube/Disc
6	MOC	-	Membrane-EPDM
7	Make	-	S-Cogen/EDt

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## 7. MBBR Media For Aeration Tank-

Sr.No.	Description	Unit	Specification
1	Media Volume	m <sup>3</sup>	1 Lot
2	Media Type	-	MBBR
3	MOC	-	Stabilized PP
4	Make	-	Cool deck /MMAqua

## 8. Tube Settler Media-

Sr.No.	Description		Specification
1	Media volume		1 lot
2	Filtering Media	-	Tube Settler Media
3	Application	-	Solids Separation

## 9. Sludge Recycle Pump -

Sr.No.	Description	Unit	Specification
1	Quantity	Nos.	2
2	Capacity	m <sup>3</sup> /hr	0.75
3	Head	m	8
4	Type	-	Centrifugal
5	Power	HP	0.50
6	Make	-	Kirloskar/Equiv.

## 10. Ozone Dosing System -

Sr.No.	Description	Unit	Specification
1	Discharge	-	Ozone Gas
2	Dosing System	Nos.	1
3	Pump capacity	HP	0.5Hp

## 11. Filter Feed Pump-

Sr.No.	Description	Unit	Specification
1	Quantity	Nos.	2
2	Capacity	m <sup>3</sup> /hr.	5.5
3	Head	m	26
4	Type	-	Centrifugal
5	Power	HP	2
6	Pump make	-	Kirloskar/Equi.

## 12. Dual Media Filter-

Sr.No.	Description	Unit	Specification
1	Quantity	Nos.	1
2	Capacity	m <sup>3</sup> /hr.	5.5
3	Type	-	Downflow
4	Operating design pressure	Kg/cm <sup>2</sup>	3.5
5	Shell diameterxHOS	mm	750 x1200
6	Operation	-	Manual
7	Vessel Material	-	MSEP/FRP
8	Valvetype	-	MPV
9	Mediatype	-	FineSand +Coarse sandGravel+Pebbles

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Dr.

Dr. Anil Kumar

### 13. Activated Carbon Filter –

Sr. No.	Description	Unit	Specification
1	Quantity	Nos.	1
2	Capacity	m <sup>3</sup> /hr.	5.5
3	Type	-	Down flow
4	Operating design pressure	Kg/cm <sup>2</sup>	2.5
7	Shell diameter x HOS	mm	750 x 1200
8	Operation	-	Manual
9	Vessel Material	-	MSEP/FRP
10	Valve type	-	MPV
11	Media type	-	Carbon + Coarses and Gravel + Pebbles

### 14. Piping Specifications:

Sr. No.	Description (Fluid)	Material of Construction
1	Raw Sewage	UPVC
2	Bio sludge	UPVC
3	Inter connecting pipes for STP	UPVC

### 15. Electrical Panel and Cabling:

Sr. No.	Description of Instruments	Nos.	Specification
1	Panel	-	Semi-Automatic
2	Cabling	-	Electrical cabling shall be provided from control panel to various units of water Treatment plant. Copper Flexible.

### Tank Description

Sr.No	Civil (Client's Scope)	MOC	Volume, Effective	Scope
1.	Bar Screen chamber	Brickwork	0.94 m <sup>3</sup>	client
2.	Oil & Grease Chamber	Brickwork	0.94 m <sup>3</sup>	client
3.	Equalization Tank	RCC	62.5 m <sup>3</sup>	client
4.	Treated Water Tank	RCC	25 m <sup>3</sup>	client
5.	Sludge Drying Bed	Brickwork	6.75 m <sup>3</sup>	client

6.	Aeration Tank	RCC	37.50 m <sup>3</sup>	client
7.	Tube Settler Tank	RCC	10.45 m <sup>3</sup>	client
8.	Intermediate Storage Tank	RCC	12.7 m <sup>3</sup>	client
9.	Plinth & Foundation for Equipments	RCC	As required	client

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## UTILITY CONSUMPTION :

To operate STP plants following heads are to be considered.

- o Electricity consumption
- o Chemicals & Manpower

### a. Electrical load

Sr.No.	Description	Installed load, Kw	Working load, Kw
01	STP Plant	10.2	5.25

### b. Chemical & Manpower

Sr.No	Description	Quantity
01	Alum	1 kg/day
02	2 Operator	9hrshift

## Battery Limits:

Battery Limit extends up to-

- Raw water—At inlet of Screen Chamber.
- Treated Water—At outlet of Carbon Filter.
- Sludge Handling—At outlet of Sludge Drying Beds.
- Electrical—At terminal of MCC panel.

The following are excluded from your scope of supply

- All civil works.
- Consents/permission from government authorities.
- Supply for electrical power and earthing to electrical control panel.
- Outlet piping to drain (from outlet of Filter)

## BATTERY LIMIT

1. Effluent at Inlet of Bar Screen Chamber to Outlet of Filters.
2. Sludge outlet to Sludge Drying bed.
3. Power supply of electrical panel.

**Total Amount – Rs.7,10,000 (Seven Lakh Ten Thousand Only) + 18% GST extra.**

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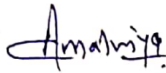


# Indore Institute of Science and Technology

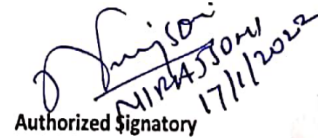
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## Terms & Conditions:-

1. Prices : F.O.R Shail Campus
2. Payment : 50% of total amount as an Advance (Within a week structure drawing will be provide by vendor)  
35% of total amount against Performa prior to dispatch  
10% of total amount against Erection & commissioning  
5% of total amount as a Security Deposit will be deducted from each RA bill & shall be released after 04 month of successful commissioning.
3. Acceptance : Services will be approved & certified by civil dept. Contractor has to take care of safety precautions while performing the work, institute will not be responsible for any loss of life & material.
4. Compensation : No. compensation will be provided for any theft or mishap
5. Others Terms: (1) 1year warranty period will be provided by you or company for any kind of machine failure.  
(2) Log Book either digital or manual will be provided by you.  
(3) Any problem in operation will be addressed within 24 hours by you (Till Warranty period)



Sr. Purchase Officer



Authorized Signatory



Token of Acceptance



### 3. Placement Support : (Under Process)

Enviroessential Pvt. Ltd. provided placement assistance to our student **Mr. Vinayak Kaushal** and his joining is under process.