



AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with 'A+' Grade

Permanently affiliated to JNTU GURAJADA VIJAYANAGARAM,

Approved by AICTE Makavarapalem, Narisipatnam, Visakhapatnam-531113, A.P

7.1.4 : Water conservation facilities available in the Institution

S.NO.	Name of the facility with location	Description	Links for geotagged photos and bills
1.	Rainwater harvesting	Rain water Harvesting pits constructed in college campus to sinking the rain water and waste water from canteen and roof of the building	https://avanthienggcollege.ac.in/assets/images/gallery/harvesting4.jpg
	Location: Opposite of the canteen. Near to Kabbadi court		https://avanthienggcollege.ac.in/assets/images/gallery/harvesting1.jpg
			https://avanthienggcollege.ac.in/assets/images/gallery/harvesting2.jpg
			https://avanthienggcollege.ac.in/assets/images/gallery/pump1.pdf
2.	Borewell/Open well recharge	There are three bore water wells in campus. Water bore wells recharged with water sinking pits and storing Of the water in the pond.	https://avanthienggcollege.ac.in/assets/images/gallery/borewell1.jpg
	Location: Back side of Decennial Block		https://avanthienggcollege.ac.in/assets/images/gallery/borewell2.jpg
			https://avanthienggcollege.ac.in/assets/images/gallery/borewell3.jpg
3.		A Pond is also constructed along with two natural boundaries for the absorption of	https://avanthienggcollege.ac.in/assets/images/gallery/motorbill2.pdf
	Construction of tanks and bunds		https://avanthienggcollege.ac.in/assets/images/gallery/pond1.jpg
	Location: A		https://avanthienggcollege.ac.in/assets/images/gallery/pond2.jpg



AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with 'A+' Grade

Permanently affiliated to JNTU GURAJADA VIJAYANAGARAM,

Approved by AICTE Makavarapalem, Narisipatnam, Visakhapatnam-531113, A.P

	contourtrenchis locate behind DecennialBlock	rainwater.	https://avanthienggcollege.ac.in/assets/images/gallery/motorbill.pdf
4.	Wastewater recycling	Waste water from septic tanks and canteens will be used for gardening, wateringtrees,R.OPlant Waste water is used to the plants through pipes, etc.	https://avanthienggcollege.ac.in/assets/images/gallery/wastewater1.jpg
	Location-		https://avanthienggcollege.ac.in/assets/images/gallery/wastewater2.jpg
			https://avanthienggcollege.ac.in/assets/images/gallery/wastewater3.jpg
			https://avanthienggcollege.ac.in/assets/images/gallery/waterbill.pdf
5.	Maintenance of waterbodiesand distribution system in the campus Location-All BuildingsRoof Water	Waste water is used to theplantsthroughpipes, Rain water on the roof will becollected through pipe lines and sendtotheharvestingfit	https://avanthienggcollege.ac.in/assets/images/gallery/water5.jpg
			https://avanthienggcollege.ac.in/assets/images/gallery/watermaint1.jpg
			https://avanthienggcollege.ac.in/assets/images/gallery/watermaint2.jpg
			https://avanthienggcollege.ac.in/assets/images/gallery/tiles2.pdf


Co-Ordinator

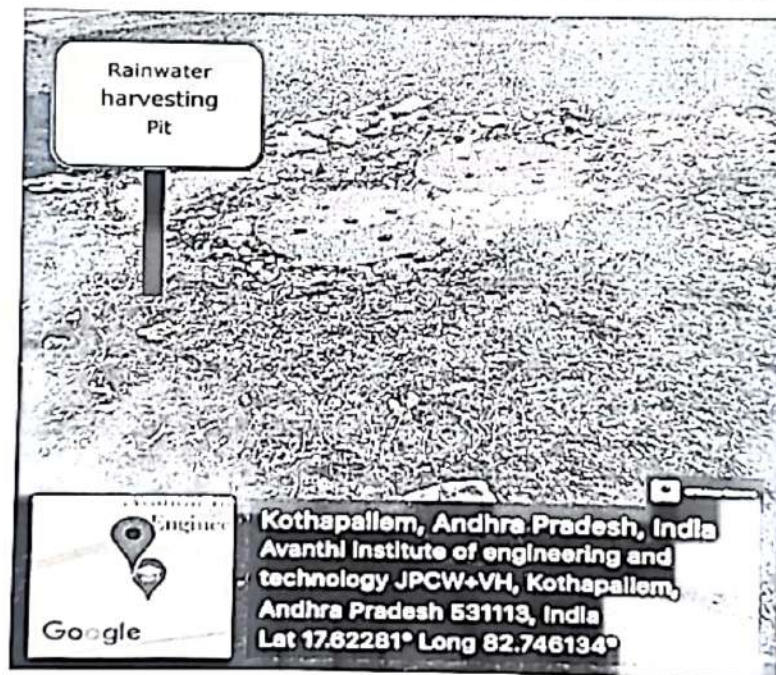

Principal
Avanthi Institute of Engineering & Technology
Narisipatnam, Visakhapatnam-531113
Anakapalle District



AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
NAAC with 'A+' Grade, Affiliated JNTU-GV
Tamaram, Makavarapalem, Visakhapatnam

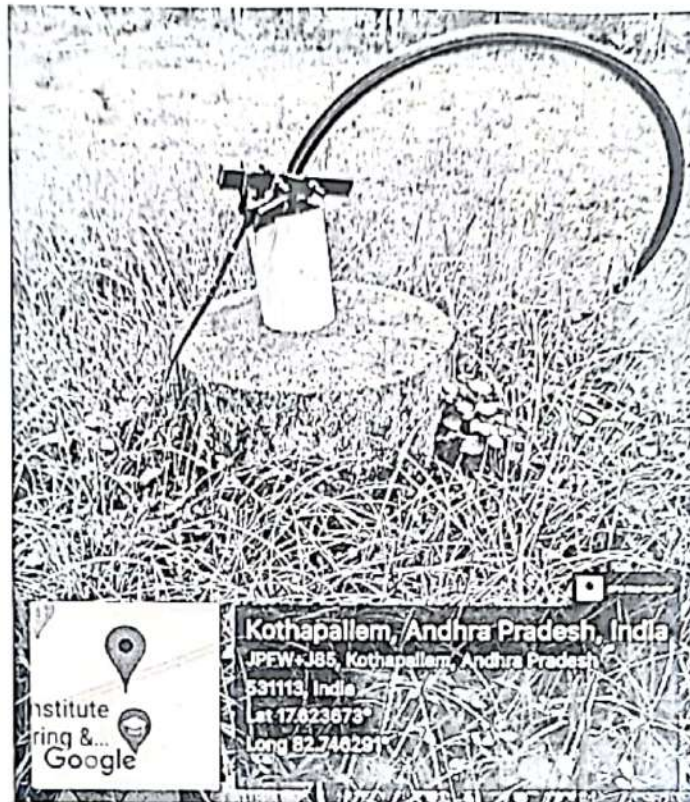
7.1.4 WATER CONSERVATION FACILITIES AVAILABLE IN THE INSTITUTION

- 1) Rain water harvesting pits constructed college campus



BOREWATERWELLS

There are three bore water wells on campus. These wells also receive water from the pond and are recharged.

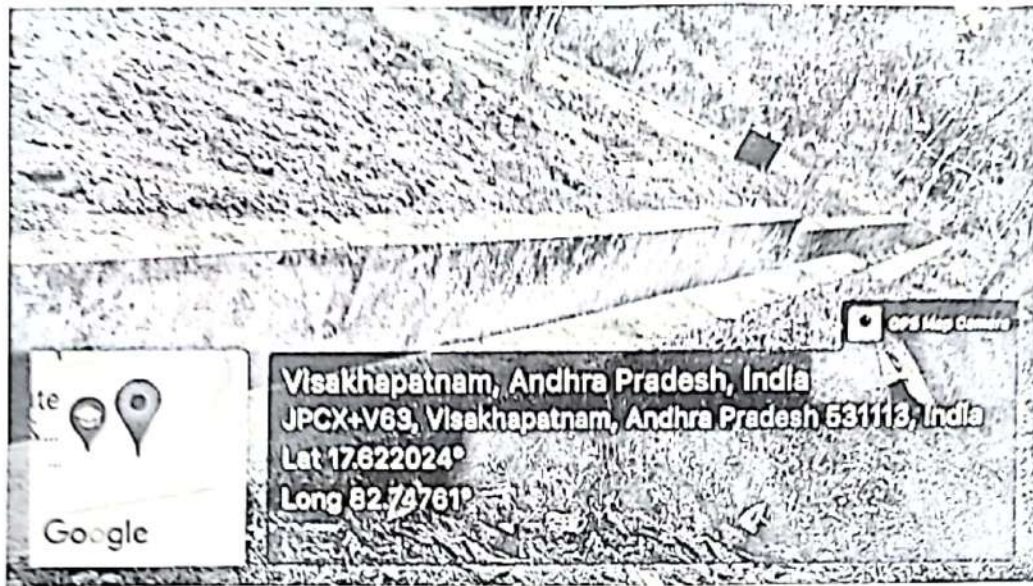


CONSTRUCTION OF CONTOUR TRENCH

Construction of counter trench In the college for the collection of rain water.

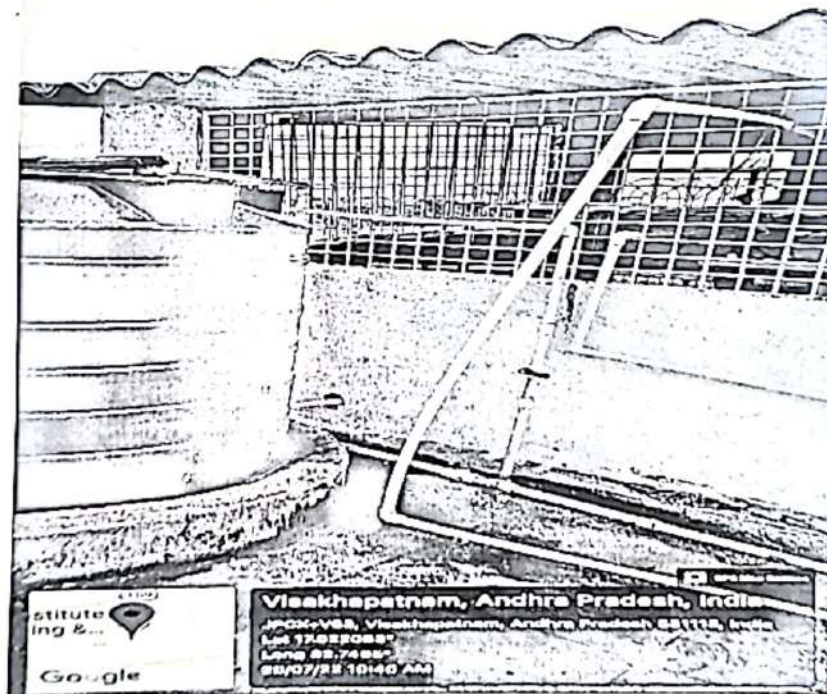


Rain water sent through can also Contour Trench

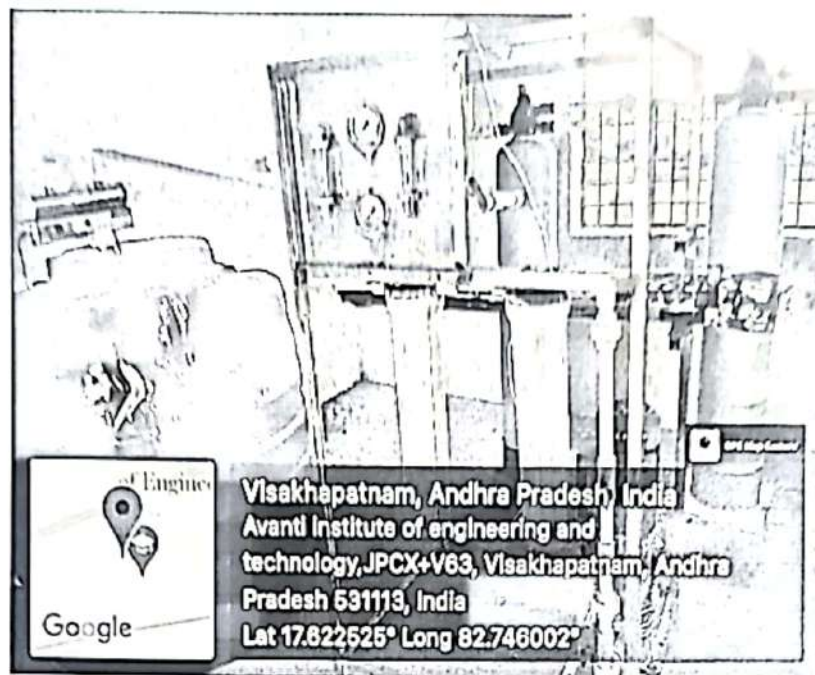


MAINTENANCE OF WATER DISTRIBUTION SYSTEMS IN THE CAMPUS

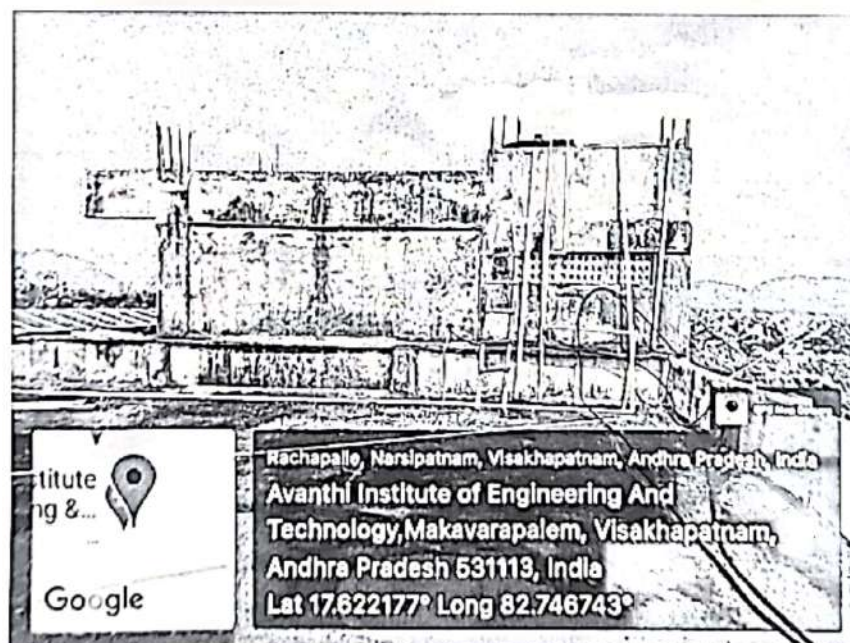
Overhead Tank on Main Block



R.O Plant installed on Main Building



OverHead Tank constructed roof of the Decennial block Building





AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

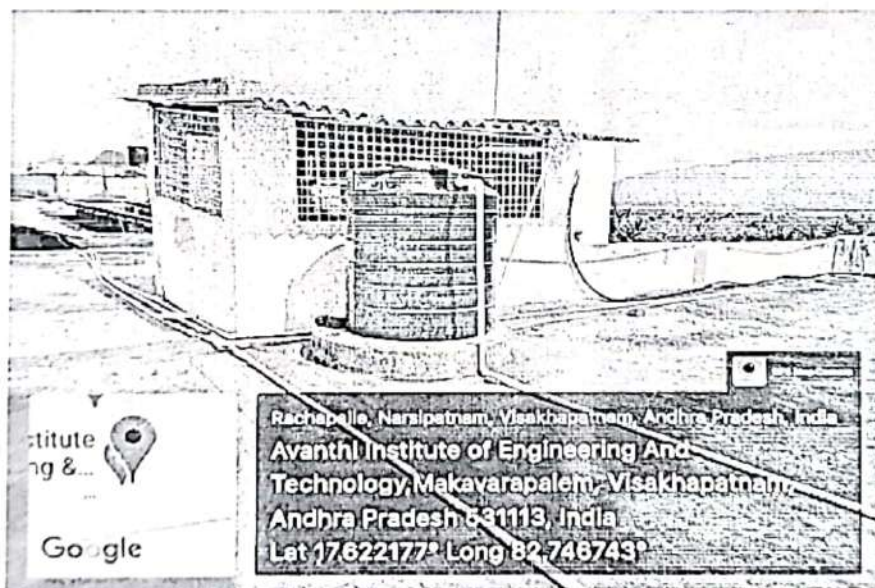
Accredited by NAAC with 'A+' Grade

Permanently Affiliated to JNTU GURAJADA VIJAYANAGARAM, Approved by AICTE
Makavarapalem, Narisipatnam, Visakhapatnam-531113, A.P

OverHead Tank on Hostel Building



OverHead Tank on Main Building for RO plant




PRINCIPAL
Principal

Avanthi Institute of Engg. & Technology
Tamaram, Makavarapalem Md.,
Anakapalli District., Pin: 531 113



TESCON™
WATER TREATMENT

D No 16-709 Plot No C 15 GVMC Layout
Srikanth Nagar, Anlova, Visakhapatnam - 530 041
Cell : 9949232731, 9633232731
Email tesconwatertech@yahoo.com
Website www.tesconwatertreatment.com

No 18

INSTALLATION / SERVICE BILL

Date 9/12/2023

CUSTOMER ADDRESS	M/S Avanthi Institute Engineering & Technology Tamarani(V) Mahavaram(M). Anala Palla Dist.
CUSTOMER'S ORDER NO.	0V MAY 583
WORKING TIME	

WORK DESCRIPTION	No. of Days / Units	RATE / DAY	TOTAL
500 CPH R.O. System with all accessories	1 set		1,20,000/-
			1,20,000/-

Rupees (one lakh Twenty thousand only.)

For TESCON WATER TREATMENT

Principal
Avanthi Institute of Engg. & Techno.
Tamarani, Mahavaram(M)
Visakhapatnam Dist. Pin-531113

Authorized Signatory

THE DETAILED TERMS AND CONDITIONS OF THE CONTRACT:

Our price for the supply of the R.O.Plants models

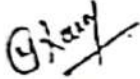
500 LPH R.O System is Rs.1,45,000(Rupees One Lakhs Forty Five Thousand only)

- F.O.R. : Ex-Our office, H.B. Colony, Visakhapatnam.
- Frieght : Extra
- Taxes : GST @ 18% Extra
- Payment : 80% as advance, 20% against delivery and installation.
- Delivery : One Week from the date of receipt of P.O. with advance
- Installation Charges :Included (Providing Lodging & Boarding)
- Warranty : We shall give warranty of the equipment for a period of 06 months from the date of commissioning of the plant.

Thanking you and assuring you of our best attention and services at all times.


Yours sincerely,

for TESCON WATER TREATMENT,



(N.MRANGA)
Proprietor

*Fixed for
Rs. 1,20,000/-
including GST.*



Principal
Avanithi Institute of Engg. & Technology
Tamararam, Makavarapalem Md
Visakhapatnam District, Pin-531113



TESCON™

WATER TREATMENT

D.No. 18-708 Plot No. C-15, GVMC Layout
Srikanth Nagar, Arilova, Visakhapatnam - 530 001
Cell : 9849232731, 95332327
Email : tesconwatertech@yahoo.co.in
Website : www.lesconwatertreatment.co

✓ Water & Waste Water Treatment Plants & Chemicals ✓ Water Harvesting Recharge Projects
✓ Pumps ✓ Solar Systems ✓ Security Systems ✓ Electrical Infra Structures

Our Ref: TWT/VSP/199

Date: 09/11/2023

TO

Avanthi Institute engineering & Technology
Tamaram Makavarapalem Anakapalli Dist.

Sub: Techno Commercial Proposal for 500 LPH for Reverse Osmosis system
(SS) for Drinking water Usage – Reg.

Dear Sir,

We acknowledge with thanks the receipt of your enquiry for the requirement of Reverse Osmosis System. Based on enquiry, we are pleased to submit our Techno-Commercial Proposal for the same.

OPERATION PHILOSOPHY

At TWT we take utmost care to design any Water Treatment system to give required output at all the times. At each stage of design we are taking minute details into consideration, which can optimize the system.

REVERSE OSMOSIS DESIGN SECTION:

The scheme proposed in this section is as follows:

FEED PUMP → SAND FILTER → CARBON FILTER → ANTISCALANT DOSING →
CARTRIDGE FILTER → HIGH PRESSURE PUMP → RO SKID → POST CARTRIDGE
FILTER → UV SYSTEM .

BASIS OF DESIGN:

The system being proposed by us is designed based on the raw water analysis report (Source : Borewell) – Parameters Assumed.

Total Dissolved Solids: 1500 ppm (Parts Per Million)
Hardness : 400 ppm

TREATED WATER QUALITY:

The TDS of water should be the treated water quality expected in RO as per ISI standards.

TDS	...	Between 30-50 ppm
Hardness	...	Between 20-40 ppm

PROCESS DESCRIPTION

The raw water is fed in the inlet of the sand filter for removing of Suspended Solids and Turbidity from the water.

After Sand filter, Activated Carbon filter is provided to reduce colour, odor, smell & etc., Then anti Scalant Dosing have been provided to prevent the membranes scaling due to Calcium carbonate and Calcium sulphate salts.

Then softened water is passed through the cartridge filter to reduce the SDI below acceptable limits for RO membranes i.e. 4. The cartridge filter also takes care of any foreign particle and prevents it from going to high-pressure pump to prevent the damage of high-pressure pump.

Then water is pumped at high pressure through RO block, wherein, the major quantity of dissolved salts are rejected in the reject stream and almost the pure water or permeate comes as a separate stream.

Then water is fed in to the Post micron filter and then through Ultra Violet System for killing biological contents like Bacteria, Virus, etc. Thus 100% pure water is ready.

SCOPE OF SUPPLY

1.	Feed Pump	..	1 No.
2.	Sand Filter	..	1 No.
3.	Activated Carbon filter	..	1 No.
4.	Anti scalant Dosing System	..	1 No.
5.	Cartridge Filters	..	1 No.
6.	High Pressure Pump	..	1 No.
7.	R.O. Block	..	1 No.
a)	4"Membranes	..	2No.
b)	4" pressure tubes(300psi)	..	1/2 No.
8.	<u>Instrumentation</u>		
	a) Pressure Gauges	..	3 Nos.
	b) Flow Indicators	..	2 Nos.
9.	Interconnecting piping	..	1 Lot.
10.	Elec. control Panel (Stainless Steel)	..	1 No.
11.	UV System	..	1 No.

TECHNICAL SPECIFICATIONS:

FEED PUMP:

Numbers offered	:	<u>500 LPH</u> One
Max. flow	:	2000 Liters per hour
H.P	:	1
Make	:	CRI/Loo/Cnp

SAND FILTER

Numbers Offered	:	One
Dia (mm)	:	325
H.O.S.	:	1254
Material of Construction	:	FRP (Pentair)
Service Flow Rate(ltrs/hr)	:	2000
Media	:	Sand, Pebbles
Accessories	:	Top mounted multiport valve.

CARBON FILTER

Numbers Offered	:	One
Dia (mm)	:	325
H.O.S.	:	1254
Material of Construction	:	FRP(Pentair)
Service Flow Rate(ltrs/hr)	:	2000
Media	:	Activated Cabon
Accessories	:	Top mounted multiport valve.

ANTI SCALENT DOSING:

Numbers offered	:	One
Dosing pump capacity	:	6 lph
Make	:	e-dose/Ftps
Storage tank	:	80 Liters

CATRIDGE FILTER

Numbers Offered	:	One
M o C of housing	:	PP
Cartridge Rating	:	5 Microns
Cartridge Type	:	Polypropylene, Wound
Service Flow (m3/hr)	:	2

HIGH PRESSURE PUMP

Numbers Offered	:	One
Type	:	Multistage centrifugal pump
Service Flow (ltrs/hr)	:	2000
Material of Construction	:	SS
Make	:	CRI/Cnp/Loo
Power	:	Single.

R.O. SYSTEM

No. of Blocks offered	:	One
Product Flow Rate (lira/hr)	:	500
Membrane type	:	4
No. of Membranes offered	:	2
Make	:	Rlo/polymax/ Suozo

PRESSURE TUBES

Nos. Offered	:	1
Material of Construction	:	FRP
Electrical panel board	:	Stainless Steel

Instrumentation:

Pressure gauges	:	3 Nos.
Flow indicators	:	2 Nos.

Post Micron Filter

Numbers Offered	:	One
M O C of housing	:	PP
Cartridge Rating	:	1
Cartridge Type	:	Polypropylene, Wound
Service Flow (m ³ /hr)	:	1

U.V. System

Numbers Offered	:	One
MOC	:	Stainless Steel
Service Flow	:	500 Liters per Hour
Electrical Panel	:	One

SCHEDULE OF EXCLUSIONS (CUSTOMER SCOPE):

1. All types of Civil Works like foundations, drain Line Provision.
2. The raw water supply at the inlet with raw water feed pump.
3. Electrical supply to our instrument panel Box and earthing provision.
4. Handling and safe storage of the material at site.
5. All consumables and chemicals required during commissioning of the plant.

THE DETAILED TERMS AND CONDITIONS OF THE CONTRACT:

Our price for the supply of the R.O.Plants models

500 LPH R.O System Is **Rs.1,45,000**(Rupees One Lakhs Forty Five Thousand only)

F.O.R. : Ex-Our office, H.B. Colony, Visakhapatnam.
Frieght : Extra
Taxes : GST @ 18% Extra
Payment : 80% as advance, 20% against delivery and installation.
Delivery : One Week from the date of receipt of P.O. with advance


Installation Charges :Included (Providing Lodging & Boarding)

Warranty : We shall give warranty of the equipment for a period of 06 months from the date of commissioning of the plant.

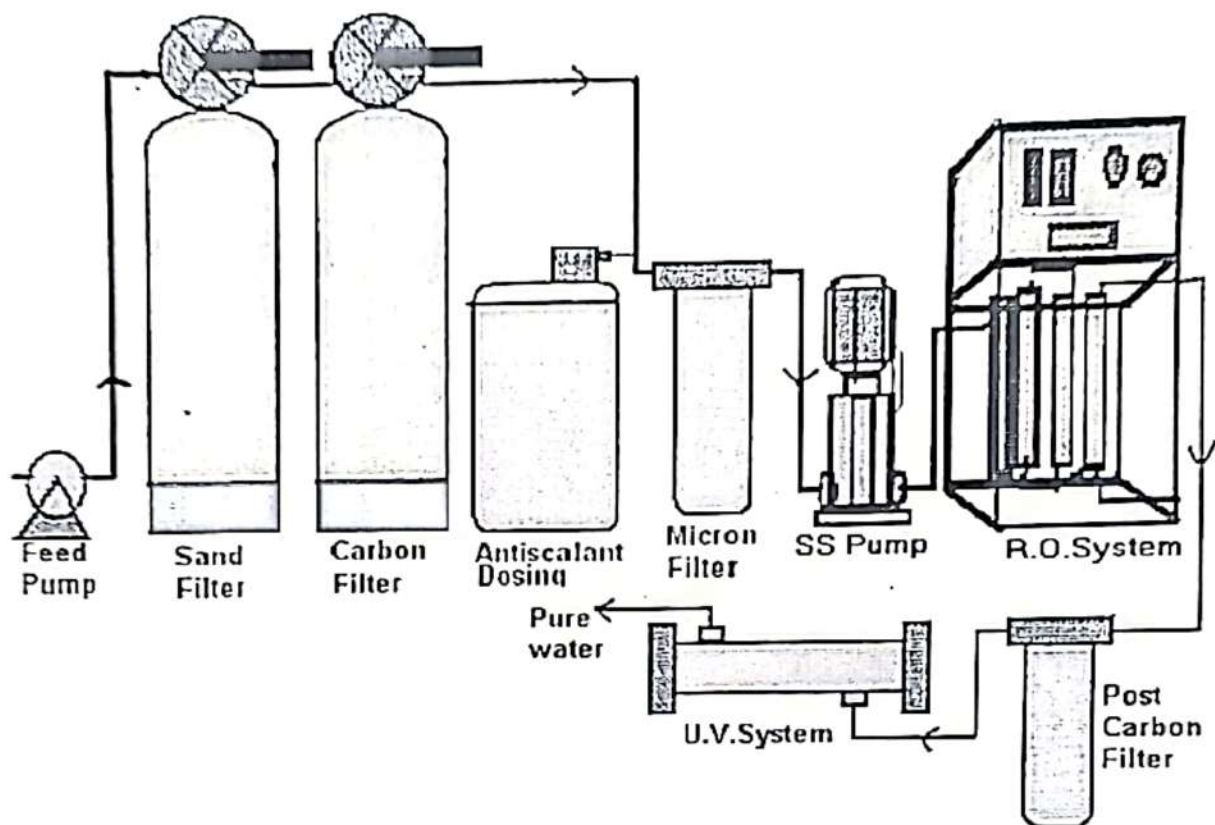
Thanking you and assuring you of our best attention and services at all times.
Yours sincerely,
for TESCON WATER TREATMENT,


(N.MRANGA)
Proprietor

Fixed for
Rs. 1,20,000/-
including GST.


Principal
Avanthi Institute of Engg. & Technology
Tamarani, Mahavarampalem Md
Visakhapatnam District, Pin-531113

SCHEMATIC DIAGRAM OF R.O. PLANT WITH PRE & POST TREATMENT



APPLICATIONS

SAND FILTER: To reduce physical impurities like mud and dirt.

CARBON FILTER: To remove colour, odour, smell, organic matter.

ANTISCALANT: To save the membranes from scaling of Calcium & Magnesium salts.

MICRON FILTER: To reduce suspended solids upto 5 micron.

HIGH PRESSURE PUMP: To feed water with high pressure into membranes.

R.O. SYSTEM: To reduce dissolved solids upto 90% (like Fluoride, Silica, etc.)