


7.1.5 (QnM) Water conservation facilities available in the Institution									
Rain water harvesting		Borewell / Open well recharge		Construction of tanks and bunds		Waste water recycling		Maintenance of water bodies and distribution system in the campus	
Yes		Yes		Yes		Yes			No

N. Singh



Water conservation facilities available in the Institution



Rishikesh, UT, India
Coordinates: 24.84°N, 78.17°E
Lat: 24.840000, Long: 78.170000
09/19/2022 02:00 PM

Rainwater collection



Rishikesh, Uttarakhand, India



Rishikesh, Uttarakhand, India
Coordinates: 24.84°N, 78.17°E
Lat: 24.840000, Long: 78.170000
09/19/2022 02:00 PM

Water conservation



Rishikesh, Uttarakhand, India



Waste Water Recycling System



Rishikesh, UT, India
Coordinates: 24.84°N, 78.17°E
Lat: 24.840000, Long: 78.170000
09/19/2022 12:23 PM



Rishikesh, Uttarakhand, India
Coordinates: 24.84°N, 78.17°E
Lat: 24.840000, Long: 78.170000
09/19/2022 11:53 AM GMT +05:30

Water recycling plant located in the college



Rishikesh, UT, India
Coordinates: 24.84°N, 78.17°E
Lat: 24.840000, Long: 78.170000
09/19/2022 12:22 PM

Internal architecture of the system





**Seema
Dental College
and Hospital**
(First Post Graduate Dental College of The State)

- Recognized by:
Dental Council of India
vide Govt. Gazette Notification No.
V-12017/49/2001-DE dated 25/06/2008
- Awarded As The Best Dental College

Virbhadrha Road, Post Office : Pashulok
Rishikesh-249 203 {Uttarakhand}
Mobile: +91-9837087627
E-mail : sdchquery@gmail.com
Web : www.seemadentalcollege.org

Date: 23 January 2023

Ref.: SDCH/WO/2022-23/01

Er Pravesh Gupta (Project Director)
Toza India Pvt Enterprise,
229 - Neelkanth Arcade, 43 Rajpur
Road, Dehradun -Uttarakhand,
www.tozaindia.com; info@tozaindia.com,

(M) - 9058002121, 9758828989

Subject: Work Order for Rainwater Harvesting

Dear Mr Gupta,

We are pleased to place the Rain Water Harvesting system order at Seema Dental College & Hospital, Rishikesh.

We have received your quotation of Rs. 6,37,193/- (inclusive of GST) for the same. TDS will be deducted from the above-mentioned amount as per Income Tax Act.

50% payment on total cost i.e., Rs 3,18,600/- will be released along with this work order, the next 30% i.e., Rs 1,91,200/- will be released after the complete material is reached at the site and the remaining amount will be released after successful completion of the project.

We will need a proper invoice bill soon after paying the advance along with a complete project drawing.

The project will be serviced/maintained by you for one year from the date of commissioning and in case of any expenses incurred on the smooth running of the project, the same will be borne by you.

For **Seema Dental College & Hospital**,


Vivek Sangh
Executive Director



Toza India Pvt Enterprise

GSTIN: - 05AIDPG0568N1Z7

भारतं विश्वगुरुः सदा हरितः भव

Office Address:-

229-Neelkanth Arcade,
43-Rajpur Road Dehradun-Uttarakhand,
(M) 9758828989; 9058002121
Email: info@TozaIndia.com
Web: www.TozaIndia.com

Billing Details for Rainwater Harvesting - Rishikesh

Seema dental College and Hospital
Virbhadra Road, Post Office : Pashulok
Rishikesh - Uttarakhand - 249203
GST - 05AAAAD1330P2ZY
(PH) 9837087627

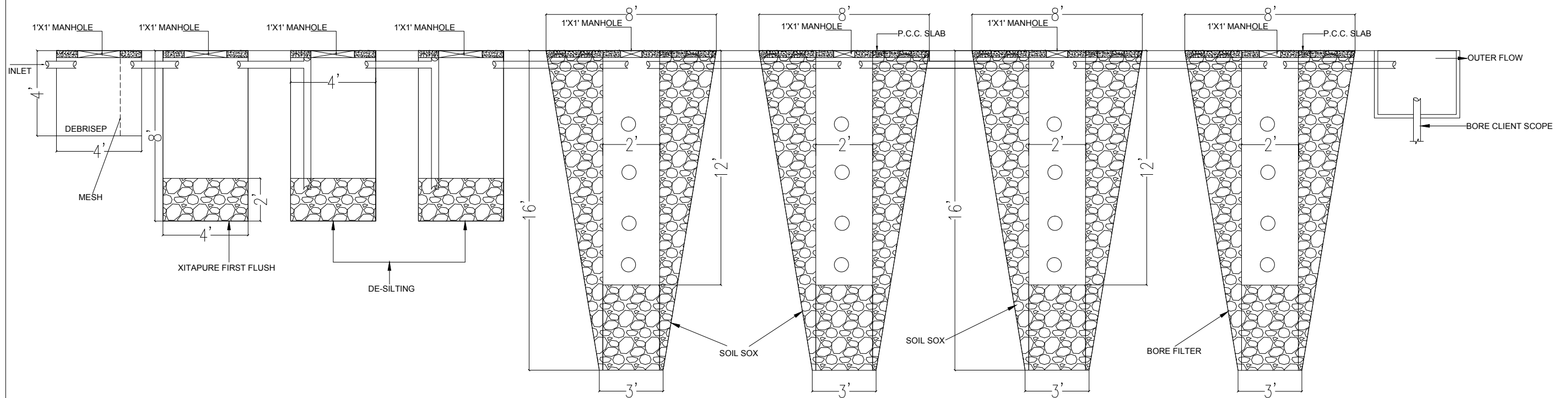
Invoice No	Invoice Date	Payment Terms	Due Date		
RST/03/2023/00056	14/03/2023	Advance + After Bill	20/03/2023		
Description	Rates	CGST@ 9%	SGST @ 9%	Qty	Total (Rs)
1 - DebrisSep Screen Chamber	Included				
2 - XitaPure Precast First flush	39999/-	3600/-	3600/-	01	47199/-
3 - Precast Desalting unit	99999/-	9000/-	9000/-	01	117999/-
4 - RWH BioCompaQ SoilSox Syatem	99999/-	9000/-	9000/-	03	353997/-
5 - Orta Purifix Borewell Filter	99999/-	9000/-	9000/-	01	117999/-
6 - Drain line PVC 4 inch Up to 50 f	Included			50 F	

Total Cost - Rs 637194/-

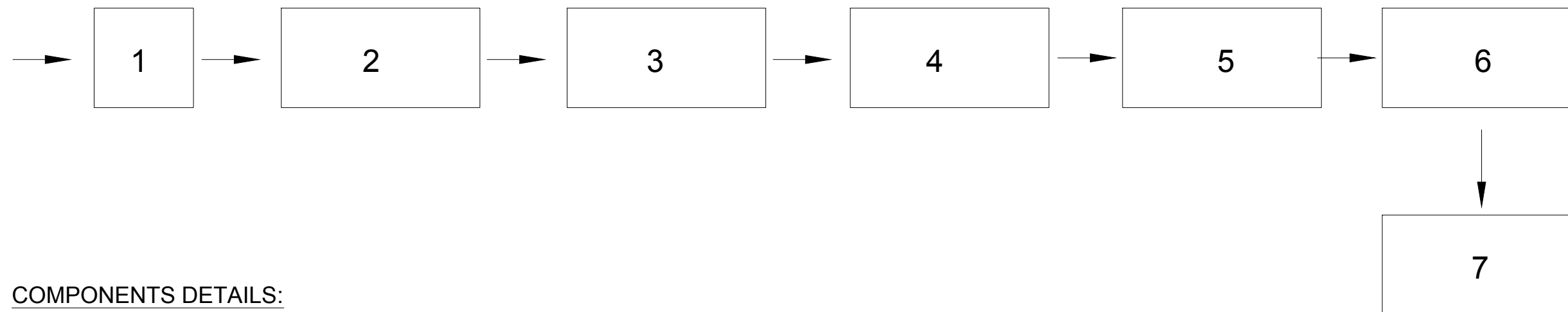
Cost Of Project = Rs- 539994/-
Total GST Value - = **Rs- 97200/-** (CGST - 48600/- + SGST- 48600/-)
Total bill value (Rate + GST) = Rs- 637194/-
Advance Paid = Rs- 312228/- + 186200/- = Total - 498428/
Balance to be paid = Rs -138766/-

For Toza India Pvt Enterprise

Er P k Gupta



FLOW /BLOCK DIAGRAM CHART



COMPONENTS DETAILS:

1. R.C.C. PRECAST DEBRISEP CHAMBER (SIZE 04 FEET DIA, LENGTH 04 FEET.)
2. R.C.C. PRECAST XITAPURE FIRST FLUSH CHAMBER (SIZE 04 FEET DIA, LENGTH 08 FEET.)
3. R.C.C. PRECAST DE-SILTING UNIT (SIZE 04 FEET DIA, LENGTH 08 FEET, TWO COMPARTMENTS.)
4. FIRST SOILSOX PRECAST RCC PIT FOR PASSIVE RECHARGE (SIZE 08 FEET DIA, 16 FEET.)
5. SECOND SOILSOX PRECAST RCC PIT FOR PASSIVE RECHARGE (SIZE 08 FEET DIA, 16 FEET.)
6. THIRD SOILSOX PRECAST RCC PIT FOR PASSIVE RECHARGE (SIZE 08 FEET DIA, 16 FEET.)
7. FILTER FOR BORE WELL (8 FEET X 16 FEET)

PROJECT TITLE:-

RAINWATER HARVESTING SYSTEM AT
SEEMA DENTAL COLLEGE, RISHIKESH, UTTARAKHAND

DATE	REV. NO	DETAILS
06-04-2023	R0	COMPANY NAME
DRWAN BY	ANIL	TOZA INDIA DEHRADUN
EMAIL ID. er.pkgupta1967@gmai.com		WWW.TOZAININDIA.COM 9058002121,9758828989



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• Affiliated to:
HNB Garhwal University, Srinagar Garhwal

Virbhadra Road, Post Office : Pashulok
Rishikesh-249 203 (Uttarakhand)
Phones: 0135- 2453465, 2453725, 2453726
Fax : 91-135-2453743
E-mail : sdchquery@rediffmail.com
Web : www.seemadentalcollege.org

Date: 15th oct 2019

TO WHOMSOEVER IT MAY CONCERN

This is to certify that M/s Heron India Pvt Ltd, has successfully installed & commissioned A. O Smith Heat Pump Model CAHP10 HP in quantity 02 with Two SS-304 hot water tank of 5000Ltr capacity at our premises **Seema Dental College, Rishikesh, UttraKhand**. Total Billing amount is Rs 2180000/- (Twenty One Lakh Eighty Thousand only)

We are fully satisfied with the quality and the performance of AO Smith products, as well as services offered to our organization by AO Smith service team.

Thanks & Regards

• Vivek Sang
(Executive Director)

05th July, 2019.

Mr. Vivek Sang
Seema Dental College & Hospital
Rishikesh, Uttrakhand

Project: Commercial for Water heating for Hospital

Dear Sir,

As per the discussion of Mr. Raman sending you the payment details of hot water system in your hospital as follows:-

S.No	MATERIAL	PAYMENT
1	ADVANCE FOR PROCUREMENT	400000
2	MATERIAL DELIVERED	400000
3	INSTALLATION AND COMMISSIONING	300000
	TOTAL	1100000

FOR PURCHASE ORDER:-

**HERON INDIA PVT LTD
14 OLD SURVEY ROAD
DEHRADUN
GSTIN : 05AADCH806982ZS**

BANK DETAILS:-

**HERON INDIA PVT LTD
A/C NO 0674002190421318
IFSC CODE: PUNB0067400
BRANCH: GHAZIABAD**

In case of any Clarifications please feel free to contact us.

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

For, Heron India Pvt. Ltd.

Prashant Sagar

Terms & Conditions:-

1. 50% Advance with P.O, 40% against PI before dispatch of material, 10% after installation and commissioning.
2. Wiring /cabling for heat pump till control panel under our scope.
3. **Lifting Inclusive.**
4. Plumbing work of heat pump to tank would be under our scope.
5. Warranty for hot water system would be for 1 yrs.
6. Civil work for Heat Pump would be provided by customer.
7. **Transportation Inclusive**
8. Tax of 18% GST Extra on total system.
9. Time of completion for total hot water system would be 30-45 days from the date of P.O and Advance.

For Heron India Pvt. Ltd.

Prashant Sagar

Tax Invoice

Heron India Pvt. Ltd. 11, 11th Floor, Navvud Market 110002, New Delhi, India Tel: +91 11 2610 1111 Email: sales@heronindia.com	Invoice No. HIPL/18-19/29 Delivery Note	Dated 4-Sep-2018 Mode/Terms of Payment
	Supplier's Ref.	Other Reference(s)
Seema Dental College & Hospital Virpur Khurd Rishikesh U.P. India Tel: +91 0511 234 1234 Email: info@seemadentalcollege.com	Buyer's Order No.	Dated
	Despatch Document No.	Delivery Note Date
Dispatched through	Destination	

Description of Goods and Services	HSN/SAC	Quantity	Rate	per	Amount
A.O. Smith Heat Pump (N)	84186100	1 pcs	4,50,000.00	pcs	4,50,000.00
CAHP-MC-38					
Hot Water Tank	8421	1 pcs	3,45,850.00	pcs	3,45,850.00
GROUND FOS PUMPS	8413	2 pcs	26,000.00	pcs	52,000.00
Electric Heat Elements with Control Panel	8537	1 set	32,000.00	set	32,000.00
CPVC Pipes	3917	1 set	35,000.00	set	35,000.00
Installation & Commissioning	9987				20,000.00
					9,34,850.00
IGST					1,65,153.00
Total					₹ 11,00,003.00

INR Eleven Lakh Three Only E. & O.E

AADCH8069A for Heron India Pvt. Ltd.

Authorised Signatory

Seema Dental College & Hospital (2018-2019)

A Unit of Dr B.S.G.M.C.Society
Virbhadra Road, PO-Pashulok
Rishikesh-249203 {Uttarakhand}

M/s Heron India Pvt.Ltd.

Ledger Account

71,3rd Floor, Navyug Market, Ghaziabad

1-Apr-18 to 31-Mar-19

Date	Particulars	Vch Type	Vch No.	Debit	Credit
3-Aug-18	Cr PNB-3714000110074475 (SDCH)	Payment	BANK TRF.	4,00,000.00	
4-Sep-18	Dr Plant & Machinery	Journal	HIPL-29		11,00,000.00
7-Sep-18	Cr PNB-3714000110074475 (SDCH)	Payment	BANK TRF.	4,00,000.00	
16-Oct-18	Cr PNB-3714000110074475 (SDCH)	Payment	BANK TRF.	2,00,000.00	
10-Jan-19	Cr PNB-3714000110074475 (SDCH)	Payment	NBANK TRF.	1,00,000.00	
				11,00,000.00	11,00,000.00

Third Party Funds Transfer

Congratulations, your RTGS/NEFT transaction is completed successfully!

You've won yourself a **Special Offer.**

Avail now

*T&C apply



 [Print This Page](#)

Your request has been successfully taken for onward processing and debiting your account . Please ensure that Adequate Funds are available in your account to process this transaction.

To Other Bank (RTGS)

STEP 1 ENTER DETAILS		STEP 2 CONFIRM TRANSACTION		STEP 3 ACKNOWLEDGEMENT	
Reference Number	RRR0132013255370				
From Account	50100125828813				
Beneficiary Name	Mentor Water Experts Pvt Ltd				
Beneficiary IFSC Code	ANDB0001209				
Beneficiary Account Number	120931100000797				
Bank Name	ANDHRA BANK				
Transfer Amount	540,760.00				
Transfer Description	SDCH				
<p>Make Another Transfer</p>					

Note:

- The actual time taken to credit the account depends on the time taken by the Payee's Bank to process the payment.
- The money will reach the Payee's bank within the time stipulated by the Reserve Bank of India.
- HDFC Bank is not responsible for any charges / commission of any kind levied/charged by the Beneficiary Bank.
- For details on safe NetBanking practices please [click here](#)

Reference ID: 5035707849
Transaction Type: RTGS Payment
Debit Account Number : 3714009300660384
Beneficiary Nickname: Mentor Water Experts Pvt Ltd
Beneficiary Bank Name: ANDHRA BANK
IFSC Code: ANDB0001209
Amount: INR 5,00,000.00
Transaction Date:(dd-MM-yyyy): 14-01-2020
Frequency Type: One Time
Remark: SDCH

Reference ID: 5027427300
Transaction Type: RTGS Payment
Debit Account Number : 3714000110074475
Beneficiary Nickname: Mentor Water Experts Pvt Ltd
Beneficiary Bank Name: ANDHRA BANK
IFSC Code: ANDB0001209
Amount: INR 5,20,380.00
Transaction Date:(dd-MM-yyyy): 26-02-2019
Frequency Type: One Time
Remark: Seema Dental College





Seema Dental College and Hospital

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Affiliated to:
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Virbhadra Road, Post Office : Pashulok
Rishikesh-249 203 (Uttarakhand)
Phones: 0135- 2453465, 2453725, 2453726
Fax : 91-135-2453743
E-mail : sdchquery@rediffmail.com
Web : www.seemadentalcollege.org

Date: February 26, 2019

Ref.:SDCH/PO/2019/02

M/s Mentor Water Experts Pvt Ltd.
Cubic Tower, Charata Road
Dehradun

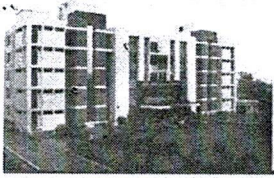
Sir,

Please find attached work contract for Supply installation testing & commissioning (SITC) of Sewage Treatment plant Capacity of 80 KLD as under

Scope of Work

S. No.	Details of Mechanical work	Quantity
1	S. S. Bar Screen 10mm	1 No.
2	Sewage Feed Pumps from EQ to STP Type- Non Submersible self priming Flow rate – 4 m3/Hr Head – 10 meter HP/RPM- 2/2900	2 Nos. (one working + standby)
3	Air Blowers for Aeration in STP and EQT Capacity – 120 m3/hr HP/RPM- 3/1500	2 Nos.
4	Membrane Diffusers for EQ Sizes – 1 Meter DIA - 3 Inch	1 Lots.
5	Membrane Diffusers for STP Sizes - 1 Meter DIA - 3 Inch	1 Lots for each ZONE
6	Diffuser Lines for EQ and STP	1 Lots.
7	FMR/MBBR/ Media	3 m3
8	Lamella/ Tube Settler modules with plates	1 Nos.
9	Filter Feed Pumps Flow Rate – 8 m3/hr @ 25 M. Head HP/RPM - 2/2900	2 Nos. (one working + one standby)
10	Multi Grade Filter Capacity –8 m3/hr DIA- 600mm HOS-1875 mm	1 No
11	Activated Carbon Filter Capacity – 8m3/hr DIA-600mm HOS-1875 mm	1 No.
12	Sludge Transfer Pump from SHT to Filter Press/Centrifuge Type- Sewage Pump Flow rate - 1 m3/hr HP/RPM- 1.5/1500	1 No.
13	Filter Press Plates- 14 Size – 12"x12"	1 No.
14	Agitator for Anoxic Chamber With all accessories and mounting Arrangements	1 Nos.

Nagan
PRINCIPAL
SEEMA DENTAL COLLEGE & HOSPITAL
RISHIKESH



Seema Dental College and Hospital

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Virbhadra Road, Post Office : Pashulok
Rishikesh-249 203 {Uttarakhand}
Phones: 0135- 2453465, 2453725, 2453726
Fax : 91-135-2453743
E-mail : sdchquery@rediffmail.com
Web : www.seemadentalcollege.org

15.	Electrical Control panel having sufficient drives, along with all pumps automation and control level switches.	1 No.
16.	Complete set of Architectural Drawing for STP Plan, Drawing of P & I , Drawings Sections.	1 Set
17.	Complete Set of DPR of STP for submission with PCB	1 Set
18.	Supervision of Civil Work during execution of civil works by Client	1Job
19.	Supervision of O&M during Stabilization Period of STP	1 Job
20.	Training of O&M Staff/s – One Time Training during Commissioning Training Includes – General Operation of STP and ETP, General Troubleshooting of STP and ETP Operational Problems, General Preventive Maintenance of Mechanical and Electrical Equipments. Log Books Preparation and maintenance of O&M of STP.	1 Job

MAKE & MATERIAL OF CONSTRUCTION

Description	Make	MOC
Feed pump	JOHNSON	CI
Bar Screen	ION EXCHANGE	SS
Aeration Tank/Reactor	CIVIL TANKS	RCC
FMR Media	ION EXCHANGE	PP
Diffuser (Tube Type)	EDI, USA	Rubber (EPDM)
Blower	EVEREST	CI
Secondary Clarifier Tank	CIVIL	RCC
Lamella Boxes	ION EXCHANGE	MSFRP
Chlorination tank	CIVIL	RCC
Chlorine dosing pump	IEIL/Asia LMI/ Milton ray	HOPE Tank/ LOPE tank
MGF	ION EXCHANGE	MSEP
MGF Feed Pump	JOHNSON	CI
ACF	ION EXCHANE	MSEP
Screw Pump	UT/Roto	CI
Filter Press	Water to people/ Pharmtech	
Butterfly valve	CRANE/ Audco.	CI
Pressure gauqe	H GURU / Gluke	
Pipe	JINDAL/TATA- B class /SUPREME	MS/PVC
Electrical panel-	MCB,switch gear etc Siemens/ L&T/ Havels	





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E-mail : sdchquery@rediffmail.com
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5 KLD ETP Related:

- Drawing to be provide by you.
- Civil/PVC tank will be provided by us.
- Dosing pumps and agitators will be purchased by us as per your recommendation.
- Commissioning and general operation of ETP will be done by you.

We will be providing you

- a) All Kind of Civil works, Foundations for Equipments etc.
- b) Sewer lines into Bar Screen Chamber.
- c) Ventilation Duct for underground STP.
- d) Safety & Security of material at site.
- e) Approach Road to STP site.
- f) Fresh Water Line up to STP Area.
- g) Sump and Sump pump for Underground STP.
- h) Irrigation line and Pump to carry out treated water.
- i) 3 Phase Electrical cable up to the Control Panel (Plant Room) of STP.
- j) Earthing Pits for earthing of STP Electrical Equipments.
- k) Free Water & Electricity during Erection and commissioning.

Total Cost of 80 KLD STP Rs 17,70,000/- (Inclusive of 18% GST & Freight). TDS will be deducted on actual payment made.

PAYMENT TERMS:

- 30% of total value already transferred after deducting TDS (copy enclosed).
- 60% against Performa invoice.
- 5% on delivery of the plant.
- 5% within 15days of handover of the plant.

Architecture Drawings: Architectural Drawing will be provided by you within 1-2 days of receiving of purchase order.

DELIVERY:

The work is to be completed with 20 days after the civil work is completed.

Kindly acknowledge and return the signed copy of the order as the token of your acceptance.

For Seema Dental College & Hospital,

Vivek Sang
Executive Director

Encl.: As above.

Jyoti Singh
28/12/2019
Principal
Seema Dental College & Hospital
Rishikesh

Ref: MWEPL/STP/2018-19/Feb017 /Revised(18th Feb19)

Dated-8th /Feb/2019

To,
The Chairman,
Seema Dental College,
Rishikesh

Subject :: Offer for Packaged Type Modular Sewage Treatment Plant of 80 KLD

Dear Sir,

Refer to your requirement of Sewage Treatment Plants of Cap.80 KLD based on same we are pleased to submit our proposal for 80 KLD for your kind consideration and approval.

We are authorized channel partner of M/s- Ion Exchange (I) Ltd.- which is world leader in water & waste water for the last 60 years.

Our offer consists of the following Annexure:

Annexure I	Design Basis
Annexure II	Introduction
Annexure III	Process Details
Annexure IV	Technical Details of Electrometrical & Civil work
Annexure V	Make and Material of Construction
Annexure VI	Price and Commercial terms& Exclusions

We hope the above is in line with your requirement. Please revert for any further information / clarifications.

Thanking you,

FOR MENTOR WATER EXPERTS PVT. LTD.


Arvind Chauhan
7351011033

Auth. Channel Partners

ZERO B
PURE WATER SOLUTIONS

GRUNDFOS

ELECTROTHERM

- Registered Office : 16-A, Prakash Nagar, Chakrata Road Dehradun (Uttarakhand)
- Corporate Office : Cubic Tower, 65 Ballapur, Chakrata Road Near Hotel Ramada Dehradun 248001 (UK) (India)
- Branch Office : 1st Floor, Sunori complex, Nawabi road Near Haldwani Public school, Haldwani, Dist- Nainital (UK)
- Branch Office : Shop No-4, Lovely Complex, Near-Govt. High School, Hallo Majra Chandigarh,
- 0155 - 4752443 , 7551002102 , Chandigarh - 07351011033,09592911033
- www.mentorwater.in sales@mentorwater.in, support@mentorwater.in, mentorwaterexperts@yahoo.com / gmail.com

ANNEXURE – I

PACKAGE SEWAGE TREATMENT PLANT USING FLUIDISED MEDIA REACTOR (FMR) TECHNOLOGY.

DESIGN BASIS

Design Capacity	80 m ³ /day
Operating Hours	20
Design flow rate	4 m ³ /hr

Sewage Characteristics	Raw Sewage	Treated Water	CPCB Norms
BOD (ppm)	250 -450	5 PPM	<30
COD (ppm)	500-700	20 PPM	<250
TSS (ppm)	250-450	<5 PPM	<100
Oil and Grease	< 50	<10 PPM	<10
Temperature	Ambient		
Inflow time	24 hours		
Peak factor	3		
Color		5 hazen unit	
Odor		Unobjectionable	
Taste		Agreeable	

Use of treated water:

For low end purposes such as gardening ,car washing ,flushing and other low end uses like construction ,etc.....

Auth. Channel Partners

ZERO B
PURE WATER SOLUTIONS

GRUNDFOS

ELECTROTHERM

Registered Office : 16-A, Prakash Nagar, Chakrata Road Dehradun (Uttarakhand)

Corporate Office : Cubic Tower, 65 Ballapur, Chakrata Road Near Hotel Ramada Dehradun 248001 (UK) (India)

Branch Office : 1st Floor, Sunori complex, Nawabi road Near Haldwani Public school, Haldwani, Dist- Nainital (UK)

Branch Office : Shop No-4, Lovely Complex, Near-Govt. High School, Hallo Majra Chandigarh,

0135 - 4752443 , 7551002102 , Chandigarh - 07351011053,09592911053

www.mentorwater.in

sales@mentorwater.in, support@mentorwater.in, mentorwaterexperts@yahoo.com / gmail.com

ANNEXURE -II

INTRODUCTION FMR - FLUIDISED MEDIA REACTOR

Conventional waste water treatment technologies like submerged aerated fixed film (SAFF) reactor, Trickling filters or other activated sludge processes have inherent disadvantages of large area of operation, higher power inputs and constant operator attention.

In line with our endeavor to introduce latest technologies related to Water & Waste water treatment, Ion Exchange (I) Ltd. has developed FMR a **Fluidized Media Reactor** using attached growth process for Waste water treatment. As compared to conventional Technologies FMR media reactors are compact, energy efficient and user friendly.

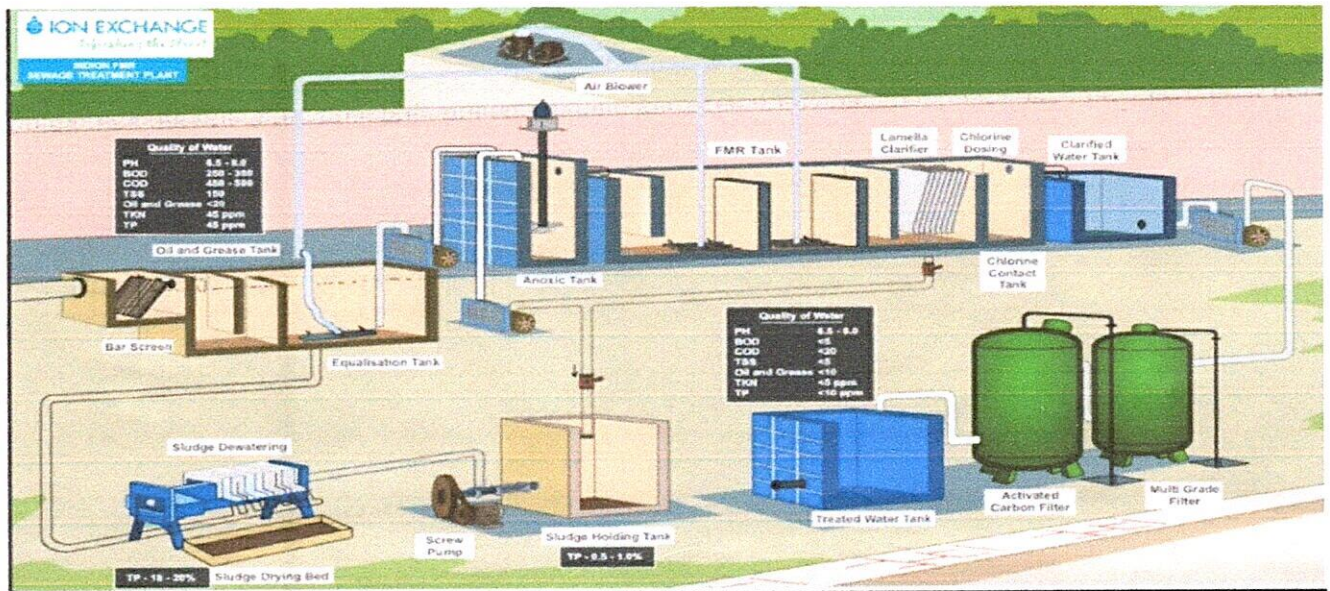
The FMR process refers to the operation of activated sludge tanks in various configurations in a combination of suspended biomass, MLSS (mixed liquid suspended solids) and attached biomass, which is attached to the FMR media.

This technology is based on MBBR /FAB technology.

Basic principle

Flock forming organism's form clusters or attach to available surfaces. The FMR carrier material allows high biomass concentrations per cubic meter of material, which increases the specific volumetric capacity of activated sludge tanks. Controls biomass activity Reduces operating cost

FMR SCHEME:



Auth. Channel Partners

ZERO B
PURE WATER SOLUTION

GRUNDFOS

ELECTROTHERM

Registered Office : 16-A, Prakash Nagar, Chakrata Road Dehradun (Uttarakhand)
 Corporate Office : Cubic Tower, 65 Ballapur, Chakrata Road Near Hotel Ramada Dehradun 248001 (UK) (India)
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 Branch Office : Shop No-4, Lovely Complex, Near-Govt. High School, Hallo Majra Chandigarh,
 0155 - 4752445 , 7551002102 , Chandigarh - 07551011033,09592911033
 www.mentorwater.in sales@mentorwater.in, support@mentorwater.in,mentorwaterexperts@yahoo.com /gmail.com

The FMR technology is a **single tank design unit**, incorporating

- A Oil grease trapper ,
- Specially designed tanks with synthetic media,
- A lamella settler, and
- A chlorine contact tank.

The **bar screen** removes larger floating matter and suspended particles. Screened sewage flows into the **FMR** tank, which contains the **FMR media**. The FMR media significantly increases the surface area for bacterial growth. Air is supplied through fine diffusers. Bacteria oxidize the organic matter present in the sewage oxidized sewage overflows in the lamella settler. Suspended particles in the treated wastewater settle, with a part of the settled sludge sliding back to the aeration tank.

The **lamella plates** provide larger surface areas, thus reducing the settling tank size. Treated water overflows into a chlorine contact tank, wherein the treated water is disinfected by dosing hypochlorite solution through an electronic dosing system.

Advantages using FMR

Significant reduction in space requirement due to high surface area & loading rate of FMR media.

Reduced power and operating costs

No Sludge recycle

No moving parts, less maintenance

FMR is best suitable when:

Designing a new waste water treatment plants when operating cost & space are constraints
Upgrading of existing waste water treatment plants
Operate plants in low temperature areas
Reduce bulking problems in existing treatment plants

Applications of FMR

I) Decentralized compact sewage treatment plants for Residential complexes, Hotels , Commercial Centers , Office Premises , Industries and Rural Communities.

II) Industrial wastewater treatment from: any kind of factories after COD removal

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ANNEXURE - III

PROCESS DETAILS

Bar Screen:

Raw sewage from the source is usually received into the bar screen chamber by gravity. Screen provided will remove all floating and big size matter such as plastic bottles, polythene bags, glasses, stones, etc., which may otherwise choke the pipeline and pumps.

Equalization Tank

Usually, sewage generation is more during morning hours and evening hours. Visually no sewage is generated during night hours. Any biological system needs constant feed for bacteria to work efficiently. Hence, it is important to put an equalization tank to collect the excess flow during peak hours and feed sewage in lean hours. A typical equalization tank has a capacity of 8 – 12 hours of average flow rate. The tank is generally of civil construction by client. Provision of air grid is to be made for thoroughly mixing the sewage to make it of homogenous quality and to keep the suspended matter in suspension and to avoid septic conditions.

Transfer of Sewage

Our scope starts from transfer of sewage from Equalization Tank to FMR tank. The distance of transfer should not exceed beyond 20 meter. The transfer pump can be either submersible or non-submersible type for this application. However we have considered centrifugal non-submersible type. The layout shall be as per our standard.

Fluidised Media Reactor (FMR)

Fluidised Media Reactor (FMR) as the name indicates consists of floating media of various shapes and sizes. The main objective of adding this media is to make available more surface area for bacteria to grow on, thereby maintaining and retaining maximum possible bacterial population in a limited volume. The FMR media material allows biomass Concentration of 20 – 40 Kgs/m³ material. Thus, FMR consists of combination of biomass in attached as well as suspended form. High concentration of biomass enables reduction of aeration tank and in turn reduction in overall cost. Volume of the media shall vary from 6 to 25 % based on the concentration of organic matter.

Another main feature of the FMR is its compactness. The FMR consists of biological system for removal of organic matter (BOD, COD), lamella for clarification and chlorine contact tank for disinfection. As all units are placed inside a single tank, it saves space and also increases operational ease.

In FMR, raw sewage enters at the top of the tank. Air is introduced at the bottom of the tank through fine bubble diffusers. Media will be in suspension because of the turbulence created by the air. The bacteria required for the oxidation of the organic matter is attached to the media and some part is suspended in the tank. After oxidation, the bacteria grow in number and need to be separated from the aeration tank liquor. The lamella section inside the FMR helps in clarification and separation of the bacteria (sludge) and clear overflow flows into chlorine contact tank. Lamella plates helps in increasing the settling area and removing the particles effectively in a smaller plan area.

In chlorine contact tank, Sodium hypo Chlorite (NaOCl) is added for disinfecting the clarified sewage Baffle plates are provided to make better contact. The chlorinated treated sewage then flows out of FMR either for further treatment or for disposal.

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Chlorination tank

After settling tank chlorine shall be dosed to remove bacterial effects at Chlorination tank by chlorine dosing pump.

Break water tank

The clarified water shall be stored in break water tank to feed in Filtration plant and carbon filter for final treatment.

Multi Grade Filtration Plant

After Break water tank it will be pumped to filtration plant to treat further

Activated carbon Filter

After Filtration plant filtered water shall be pass through ACF to remove chlorine and smell and colour .

Final treated water tank

Final treated water shall be stored in final tank for further re- uses and other low end applications.

Sludge:

The sludge from the Clarifier to be transfer from the bottom of the Clarifier once in a week by gravity/pump to SHT and it will be pumped to Filter press through screw pumps to final dewatering. Final solid shall be used as manure and water shall be re-circulated to EQ.

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ANNEXURE - IV

TECHNICAL DETAILS OF MECHANICAL EQUIPMENTS

S. No.	Details of Mechanical work	Quantity
1	S. S. Bar Screen 10mm	1 No.
2	Sewage Feed Pumps from EQ to STP Type- Non Submersible self priming Flow rate – 4 m3/Hr Head – 10 meter HP/RPM- 2/2900	2 Nos. (one working + standby)
3	Air Blowers for Aeration in STP and EQT Capacity – 120 m3/hr HP/RPM- 3 /1500	2 Nos.
4	Membrane Diffusers for EQ Sizes – 1 Meter DIA - 3 Inch	1 Lots.
5	Membrane Diffusers for STP Sizes - 1 Meter DIA - 3 Inch	1 Lots for each ZONE
6	Diffuser Lines for EQ and STP	1 Lots.
7	FMR/MBBR/ Media	3 m3
8	Lamella/ Tube Settler modules with plates	1 Nos.
9	Filter Feed Pumps Flow Rate – 8 m3/hr @ 25 M. Head HP/RPM - 2/2900	2 Nos. (one working + one standby)
10	Multi Grade Filter Capacity –8 m3/hr DIA- 600mm HOS-1875 mm	1 No
11	Activated Carbon Filter Capacity – 8m3/hr DIA-600mm HOS-1875 mm	1 No.
12	Sludge Transfer Pump from SHT to Filter Press/Centrifuge Type- Sewage Pump Flow rate - 1 m3/hr HP/RPM- 1.5/1500	1 No.
13	Filter Press Plates- 14 Size – 12"x12"	1 No.
14	Agitator for Anoxic Chamber With all accessories and mounting Arrangements	1 Nos.

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15.	Electrical Control panel having sufficient drives, along with all pumps automation and control level switches.	1 No.
16.	Complete set of Architectural Drawing for STP Plan, Drawing of P& I , Drawings Sections.	1 Set
17.	Complete Set of DPR of STP for submission with PCB	1 Set
18.	Supervision of Civil Work during execution of civil works by Client	1Job
19.	Supervision of O&M during Stabilization Period of STP	1 Job
20.	Training of O&M Staff/s – One Time Training during Commissioning Training Includes – General Operation of STP and ETP, General Troubleshooting of STP and ETP Operational Problems, General Preventive Maintenance of Mechanical and Electrical Equipments. Log Books Preparation and maintenance of O&M of STP.	1 Job

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Exclusions –

- Sewer lines into Bar Screen Chamber.
- Safety & Security of material at site.
- Approach Road to STP site.
- Fresh Water Line up to STP Area.
- Water & Electricity up to STP.

ANNEXURE – V

MAKE & MATERIAL OF CONSTRUCTION

Description	Make	MOC
Feed pump	JOHNSON/KIRLOSKAR/KSB	CI
Bar Screen	ION EXCHANGE	SS
Aeration Tank/Reactor	CIVIL TANKS	RCC
FMR Media	ION EXCHANGE	PP
Diffuser (Tube Type)	EDI, USA	Rubber (EPDM)
Blower	EVEREST	CI
Secondary Clarifier Tank	CIVIL	RCC
Lamella Boxes	ION EXCHANGE	MSFRP
Chlorination tank	CIVIL	RCC
Chlorine dosing pump	IEIL/Asia LMI/ Milton ray	HDPE Tank / LDPE tank
MGF	ION EXCHANGE	MSEP
MGF Feed Pump	KIRLOSKAR / JOHNSON	CI
ACF	ION EXCHANE	MSEP
Screw Pump	UT/Roto	CI
Filter Press	Water to people/ Pharmtech	
Butterfly valve	CRANE / Audco / Eqvt.	CI
Pressure gauge	H GURU / Gluke / Eqvt.	
Pipe	JINDAL/TATA – B class /SUPREME	MS/PVC
Electrical panel- MCB,switch gear etc	Siemens/ L&T/ Havels/ Eqv.	

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PRICE & COMMERCIAL TERMS

Basic Price For 80 KLD STP in Civil = Rs. 15,00,000.00

GST on Basic Price @ 18% = Rs. 2,70,000.00

Net Amount for SITC of STP of 80 KLD in Civil = Rs. 17,70,000.00 (Rupees Seventeen Lac and Seventy Thousand Only).

BASIS OF PRICE:

GST – 18% Extra.

Freight - As per Actual from our Ex Works Hosur (TN) to your site.

PAYMENT TERMS:

30% of total value as advance along with order.

60% against Performa invoice prior to dispatch (On Readiness of Material at Hosur (TN) Factory.

5% on delivery of the plant.

5% within 15days of handover of the plant.

DELIVERY:

Within 10-12 weeks after receipt of advance along with technically and commercially clear purchase order and E/C Time 10-15 days.

Note :- Early Delivery is possible and depends on the Progress of Civil Work at Site).

Architecture Drawings: "Good for Working" Architectural Drawing for above work will be provided with 2-4 Days from Confirmation of PO.

WARRANTY

The plant supplied by us will remain under warranty for a period of 12 months from the date of commissioning against any Manufacturing defects.

PLACEMENT OF ORDER you are requested to place your order in favor of M/s- Mentor Water Experts Pvt. Ltd.

Add- 16-A,Prakash Nagar,Chakrata Road, Dehradun

Ph-0135-2621387/6543777,Mo-9412950122,7351002100

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Banker Details Mentor Water Experts Pvt.Ltd.			
Vendor Name	MENTOR WATER EXPERTS PVT LTD		
Full Address	16-A Prakash Nagar Chakrata Road Dehradun		
Contact Person	Rajender Chamoli		
Designation	Director		
State	UTTARAKHAND	State	
City	DEHRADUN		
Country	INDIA	Ref. No	
Pin Code	248001		
Phone No	0135-2621387	Fax no	
Pan No. (Copy To Be Attached)	AAHCM1789Q	GSTIN No (Copy To Be Attached)	05AAHCM1789Q1ZQ
Legal form of Vendor (Put tick mark)	Company		
email id	mentorwaterexperts@yahoo.com / gmail.com		
Service Tax	AAHCM1789QSD001		
Contact Person	Rajender Chamoli		
Mobile No	7351002100		
Designation	Executive Director		
Bank Name	ANDHRA BANK RAJPUR ROAD DEHRADUN BRANCH		
Bank Account No (Cancelled Cheque Leaf To Be Attached)	120931100000797		
Branch Name	Rajpur Road Dehradun		
IFSC Code	ANDB0001209		
Bank contact Details	PH-0135-2740017		

For MENTOR WATER EXPERTS PVT LTD

Rajender Chamoli
FINANCIAL MANAGER

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