Shop no. 2143, Ahir falia, Village Mohangam, Di. Valsad, Ta umbergaon, Mohangam: 396191
TOTAL RANGE OF WATER TREATMENT PLANT& CHEMICALS & SERVICE.

E- MAIL:- kejaltechnology@gmail.com Mo. 9427007018 GST: 24AZQPP9087M1Z9

To, Date: 26/09/2023

YSK laboratories private limited Plot no-A-595,MIDC Industrial area, Mahape,navi Mumbai, Maharshtra 400710

Quotation of UF & 500 LPH & 250 LPH R O PLANT

Respected Sir,

This is with reference to the aforesaid subject. We are very much thankful for your interest in **KE-JAL TECHNOLOGIES** range of water treatment products. **KE-JAL TECHNOLOGIES** manufactures a broad spectrum of unique water purification, softening and filtration systems servicing the Industrial, commercial and laboratory markets.

At, **KE-JAL TECHNOLOGIES** we are a group of dedicated & result-oriented professional having rich experience in the field of Water treatment Industry, at various hierarchy in the different departments like Design & Engineering, Marketing & Project execution of Reverse Osmosis systems, De ionization systems, Filtration system of different capacities and up to turnkey projects for various reputed concerns. At this juncture we appreciate your keen interest towards our product range and very much pleased to submit our Techno-Commercial proposal as per the following Annexure:

- 1. Annexure I: Basis of design and Treatment Scheme
- 2. Annexure II: Technical Description
- 3. Annexure III: Scope of Supply
- 4. Annexure V: Prices and commercial Terms and conditions

ANNEXURE - I

BASIS OF DESIGN AND TREATMENT SCHEME

1.1) Plant Introduction:

Considering your requirement of RO Water, we have suggested the proposed plant based on the State-of-the-art Reverse Osmosis Technology which shall produce the output water 500 LPH with less than 1 ppm TDS.

1.2) Raw Water Analysis given by your side

SR. NO.	CHATERISTICS EXMINED	RESULT OF ANALYSIS
1	TDS	< 200 mg / ltr
2	Total Hardness	< 90 mg/ lit
3	Chloride	Present
4	Turbidity	Present
5	Sulphates	Present
6	Iron	present
7	Silica	present

1.3) End Water Quality:

I TDS	< 10 ppm
103	< 10 ppiii
	• •

The above quality shall be achieved subject to:

- 1] Feed quality is same as specified in your enquiry. In case of any change in the quality of raw water, the same may have implications on the Operating parameters and End-water quality of the system.
- **2] Feed** limiting condition mentioned in our offer is strictly maintained.
- 3] Operation of Water treatment plant is strictly followed in totality as per our operating manual and instructions.
- **4]** Pure chemicals, Original Spares and consumables, recommended by us, are used in W.T.P

1.4	Operating conditions (RO plant)					
	R.O. Productwater :		500 + 250 LPH			
	OperatingPressure	:	10 to15 Bar			
	Feed Flow	••	1500 LPH			
	Recovery	••	45 %			

Treatment Scheme

Sr No.	Treatment Scheme
1	Raw Water Transfer Pump
2	MULTI GRADE FILTER & ACTIVATED CARBON FILTER
3	Anti Scalene Chemical Dosing System
4	Micron Cartridge Filter
5	High Pressure Pump
6	RO Module
7	CIP Arrangement
8	Skid - Piping & Control Panel

ANNEXURE - II

TECHNICAL DESCRIPTION

UF SYSTEM

1.	RAW WATER TRANSFER PUMP				
	Quantity	:	One No.		
	Туре	:	Horizontal Multistage Centrifugal pump		
	Material of Construction	:	SS		
	Make	:	LUBI / CRI PUMPS		
	Power consumption	:	1 HP		
	Type of Drive	:	I Phase		
	Capacity	:	1500 LPH		
	Discharge Pressure	:	1.50 -3 kg/cm ²		
	Purpose	:	To pump raw water at required pressure so as to		
			Enable transfer through the RO pre-treatment stage.		

2.	MULTI GRADE FILTER & ACTIVATED CARBON FILTER					
	Quantity	:	2 No.			
	M.O.C. of Vessel	:	FRP			
	Make of Vessel	:	Ke-jal			
	Diameter of Vessel	:	13"			
	Length of Vessel	:	54"			
	Capacity	:	1500 LPH			
	Frontal Pipe Work	:	FRP			
	Operating Pressure	:	3.0 kg/cm ²			
	Make of valve	:	AUTO MPV			
	Type of Valve	:	25 NB Multi port Valve			
	Filtering Media	:	Silica Quartz Sand, Gravel, Pebbles & activated Carbon etc.			
	Application	:	To filter out suspended solids up to 25micron size & To remove color, odor and some of organics Impurities.			

3.	ANTI – SCALANT DOSING SYSTEM				
	Quantity of Dosing pump	:	3 No.		
	Туре	:	Electronic Metering		
	Operating Capacity	:	0- 5 LPH @ 5 Kg/Cm2		
	MOC Of Pump	:	PP Head & Teflon Diaphragm		
	Make of Pump	:	I dose		
	Quantity of Tank	:	3 No.		
	MOC of Tank	:	HDPE		
	Make of Tank	:	KE-JAL		
	Capacity of tank	:	70 liters		
	Application	:	To ensure non-adherence of scale causing salts on the membrane surface by adhering to the crystals of scale causing salts. Not much change in pH value.		

4.	MICRON CARTRIDGE FILTER		
	Quantity	:	2 Nos.
	Type of Cartridge	:	Replaceable spun type slim
	Material of Cartridge	:	Poly Propylene
	Make of Cartridge	:	PP
	M.O.C. of Housing	:	PLASTIC
	Make of Housing	:	KE-JAL TECHNOLOGIES
	Diameter of Cartridge	:	4.5 Inches * 5 element
	Length of Cartridge	:	20 Inches
	Capacity	:	1500 LPH
	Cartridge Rating	:	5micron
	Frequency of change	:	1 months(1 NOS)
	Application of Cartridge	:	To protect the membrane and the high-pressure pump from suspended particles.

5.	HIGH PRESSURE PUMP					
	Quantity :		:	Or	ne No.	
	Ту	ре	:	Ve	ertical, Multi Stage, Centrifugal pump	
	M.O.C. Of Pump :		:	SS	3 304	
	Ma	ake	÷	GF	RUNDFORCE Pumps	
	Po	ower Consumption	:	1.5	5 hp	
	Ту	pe of drive	:	Ιp	hase, 50Hz, 240V	
	Ca	apacity	:	15	00 LPH	
	Di	scharge Pressure	:	10	to15 bar	
	Ap	pplication	:	me	boost water energy so as to pass through the embrane module at high pressure for obtaining the esired permeate quality.	
				De	sired permeate quality.	
6.		RO MODULE				
		Quantity		:	TWO Lot	
	Item			:	RO Module consisting of Membrane Housing with ROmembranes Mounted on skid.	
		Type of Membrane		:	Thin Film Composite Polyamide	
		MOC of Membrane		:	Polyamide	
		Make of Membrane		:	DuPont	
		Size of Membrane		:	40" & 40 Length UF MEMBRANE	
		No. of Membranes Required	k	:	2 Nos.	
		MOC of Membrane Housing		:	FRP	
		Make of Membrane Housing	3	:	KEJAL TECHNOLOGIES	
		Size of Housing		:	2 element long	
		No. of Housing Required		:	1 Nos. BY US	
		Operating Pressure		:	10 to 15 kg/cm ²	
	Feed Flow			:	1500 LPH	
	Product Flow Rate Recovery			:	500 LPH	
				:	45%	
		Application of membrane		:	To reduce dissolved salts, present in water.	
		Skid		:	SS 304	

7.	CIP ARRANGEMENT					
	CLEANING SYSTEM	IN	PLACE	:	A CIP system is given to carry chemical cleaning of the membrane at specified intervals. Two types of chemicals are used: - Acid based and Alkaline based. Acid based chemical is used to remove inorganicdeposits including iron, while the alkaline based chemical is used to remove organic fouling including biological matter. This cleaning carried out every 3 months helps in proper maintenance of the plant.	

8.	SKID - PIPING & CONTROL PENAL				
	Quantity	:	One Lot		
	MOC of Skid	:	SS 304		
	MOC of Piping	:	SS 304		
	Size of Piping	:	20 NB		
	Make	:	KEJAL TECHNOLOGIES		

INSTRUMENTATION AND PANEL

		INS	STRUMENTS			
Α	CONDUCTIVITY / TDS METER					
	Quantity	:				
	Range	:	0-200ppm			
	Make	:	KE-JAL TECHNOLOGIES			
	Location	:	RO Product Outlet			
В	ROTAMETER					
	Quantity	:	TWO Nos.			
	Make	:	KEJAL TECHNOLOGIES			
	Location	:	1) RO Product flow			
			2) RO Reject Flow			
С	PRESSURE GAUGE					
	Quantity	••	4 Nos.			
	Range	••	0-7 & 0- 21 kg/cm ²			
	Make	:	KEJAL TEHNOLOGIES			

FIRST R O PLANT 500 LPH

1.	RAW WATER TRANSFER PUMP		
	Quantity	:	One No.
	Туре	:	Horizontal Multistage Centrifugal pump
	Material of Construction	:	SS
	Make	:	LUBI / CRI PUMPS
	Power consumption	:	0.5 HP
	Type of Drive	:	I Phase
	Capacity	:	1500 LPH
	Discharge Pressure	:	1.50 -3 kg/cm ²
	Purpose	:	To pump raw water at required pressure so as to
			Enable transfer through the RO pre-treatment stage.

2.	MICRON CARTRIDGE FILTER		
	Quantity	:	1 Nos.
	Type of Cartridge	:	Replaceable spun type slim
	Material of Cartridge	:	Poly Propylene
	Make of Cartridge	:	PP
	M.O.C. of Housing	:	Ss 304
	Make of Housing	:	KE-JAL TECHNOLOGIES
	Diameter of Cartridge	:	4.5 Inches * 5 element
	Length of Cartridge	:	20 Inches
	Capacity	:	1500 LPH
	Cartridge Rating	:	1 micron
	Frequency of change	:	1 months(1 NOS)
	Application of Cartridge	:	To protect the membrane and the high- pressurepump from suspended particles.

3.	ANTI – SCALANT DOSING SYSTEM			
	Quantity of Dosing pump	:	1 No.	
	Туре	:	Electronic Metering	
	Operating Capacity	:	0- 5 LPH @ 5 Kg/Cm2	
	MOC Of Pump	:	PP Head & Teflon Diaphragm	
	Make of Pump	:	E dose / veritog	
	Quantity of Tank	:	1 No.	
	MOC of Tank	:	HDPE	
	Make of Tank	:	KE-JAL	
	Capacity of tank	:	70 liters	
	Application	:	To ensure non-adherence of scale causing salts on the membrane surface by adhering to the crystals of scale causing salts. Not much change in pH value.	

4.	HIGH PRESSURE PUMP		
	Quantity	:	One No.
	Туре	:	Vertical, Multi Stage, Centrifugal pump
	M.O.C. Of Pump	:	SS 304
	Make	:	GRUNDFORCE Pumps
	Power Consumption	:	1.5 hp
	Type of drive	:	I phase
	Capacity	:	1500 LPH
	Discharge Pressure	:	10 to15 bar
	Application	:	To boost water energy so as to pass through themembrane module at high pressure for obtaining the
			Desired permeate quality.

5.	RO MODULE			
	Quantity	:	TWO Lot	
	Item	:	RO Module consisting of Membrane Housing with RO membranes Mounted on skid.	
	Type of Membrane	:	Thin Film Composite Polyamide	
	MOC of Membrane	:	Polyamide	
	Make of Membrane	:	DuPont	
	Size of Membrane	:	40" & 40 Length MEMBRANE	
	No. of Membranes Required	:	2 Nos.	
	MOC of Membrane Housing	:	SS 304	
	Make of Membrane Housing	:	KEJAL TECHNOLOGIES	
	Size of Housing	:	2 element long	
	No. of Housing Required	:	1 Nos. BY US	
	Operating Pressure	:	10 to 15 kg/cm ²	
	Feed Flow	:	1500 LPH	
	Product Flow Rate	:	500 LPH	
	Recovery	:	45%	
	Application of membrane	:	To reduce dissolved salts, present in water.	
	Skid	:	SS 304	
6.	CIP ARRANGEMENT			
	CLEANING IN PLACE SYSTEM	:	A CIP system is given to carry chemical cleaning of the membrane at specified intervals. Two types of chemicals are used: - Acid based and Alkaline based. Acid based chemical is used to remove inorganic deposits including iron, while the alkaline based chemical is used to remove organic fouling including biological matter. This cleaning carried out every 3 months helps in proper maintenance of the plant.	

8.	SKID - PIPING & CONTROL PENAL			
	Quantity	:	One Lot	
	MOC of Skid	:	SS 304	
	MOC of Piping	:	SS 304	
	Size of Piping	:	20 NB	
	Make	:	KEJAL TECHNOLOGIES	

SECOND R O PLANT 250 LPH

ANNEXURE - I

BASIS OF DESIGN AND TREATMENT SCHEME

1.4) Plant Introduction:

Considering your requirement of RO Water, we have suggested the proposed plant based on the State-of-the-art Reverse Osmosis Technology which shall produce the output water 250 LPH with less than 1ppm TDS.

1.5) Raw Water Analysis given by your side

SR. NO.	CHATERISTICS EXMINED	RESULT OF ANALYSIS
1	TDS	< 20 ppm
2	Total Hardness	< 0 ppm
3	Chloride	present
4	Turbidity	present
5	Sulphates	present
6	Iron	present
7	Silica	present

1.6) INPUT Water Quality:

TDS	:	< 20 ppm
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The above quality shall be achieved subject to:

- 5] Feed quality is same as specified in your enquiry. In case of any change in the quality of raw water, the same may have implications on the Operating parameters and End-water quality of the system.
- **6] Feed** limiting condition mentioned in our offer is strictly maintained.
- 7] Operation of Water treatment plant is strictly followed in totality as per our operating manual and instructions.
- **8]** Pure chemicals, Original Spares and consumables, recommended by us, are used in W.T.P

1.1) Treatment Scheme

Sr No.	Treatment Scheme
1	Raw Water Transfer Pump
2	Micron Cartridge Filter
3	High Pressure Pump
4	RO Module
5	CIP Arrangement
6	Skid - Piping & Control Panel

ANNEXURE II

1.	RAW WATER TRANSFER PUMF)	
	Quantity	:	One No.
	Туре	:	Horizontal Multistage Centrifugal pump
	Material of Construction	:	SS
	Make	:	LUBI / CRI PUMPS
	Power consumption	:	0.5 HP SS
	Type of Drive	:	I Phase
	Capacity	:	1000 LPH
	Discharge Pressure	:	1.50 -3 kg/cm ²
	Purpose	:	To pump raw water at required pressure so as to
			enable transfer through the RO pre-treatment stage.

2.	MICRON CARTRIDGE FILTER			
	Quantity	••	1 Nos.	
	Type of Cartridge	:	Replaceable spun type slim	
	Material of Cartridge	:	Poly Propylene	
	Make of Cartridge	:	PP	
	M.O.C. of Housing	:	SS 316 L	
	Make of Housing	:	KE-JAL TECHNOLOGIES	
	Diameter of Cartridge	:	4.5 Inches	
	Length of Cartridge	:	10 Inches	
	Capacity	:	1000 LPH	
	Cartridge Rating	:	0.5micron	
	Frequency of change	:	1 months (1 NOS)	
	Application of Cartridge	••	To protect the membrane and the high-pressure pump from suspended particles.	

3.	HIGH PRESSURE PUMP		
	Quantity	:	One No.
	Туре	:	Vertical, Multi Stage, Centrifugal pump
	M.O.C. Of Pump	:	SS 304
	Make	:	GRUNDFORCE Pumps
	Power Consumption	:	2/9
	Type of drive	:	I phase, 50Hz, 240V
	Capacity	:	1000 LPH
	Discharge Pressure	:	10 to15 bar
	Application	:	To boost water energy so as to pass through the membrane module at high pressure for obtaining the
			desired permeate quality.

4.	RO MODULE				
	Quantity	:	ONE Lot		
	Item : RO Module consisting of Membrane H ROmembranes Mounted on skid. Type of Membrane : Thin Film Composite Polyamide		RO Module consisting of Membrane Housing with ROmembranes Mounted on skid.		
			Thin Film Composite Polyamide		
	MOC of Membrane	:	Polyamide		
	Make of Membrane	Make of Membrane : Dupont			
	Size of Membrane	:	40" & 40 Length		
	No. of Membranes Required	:	1 Nos.		
	MOC of Membrane Housing	:	SS 316 L		
	Make of Membrane Housing : KEJAL TECHNOLOGIES		KEJAL TECHNOLOGIES		
	Size of Housing	ousing : 1 element long			
	No. of Housing Required : 1 Nos.		1 Nos. BY US		
	Operating Pressure	: 10 to 15 kg/cm ² Feed Flow			
	Product Flow Rate	:	250 LPH		
	Recovery	:	50%		
	Application of membrane	:	To reduce dissolved salts, present in water.		

5	CIP ARRANGEMENT				
	CLEANING SYSTEM	IN	PLACE	:	A CIP system is given to carry chemical cleaning of the membrane at specified intervals. Two types of chemicals are used: - Acid based and Alkaline based. Acid based chemical is used to remove inorganic deposits including iron, while the alkaline based chemical is used to remove organic fouling including biological matter. This cleaning carried out every 3 months helps in proper maintenance of the plant.

6	SKID - PIPING & CONTROL PENAL		
	Quantity : One Lot		One Lot
	MOC of Skid	:	SS 304
	MOC of Piping	:	SS 316 L
	Size of Piping : 1/2 inch		½ inch
	Make	:	KEJAL TECHNOLOGIES

INSTRUMENTATION AND PANEL

	INSTRUMENTS					
Α	CONDUCTIVITY METER					
	Quantity	:	One No.			
	Range	:	0-200ppm			
	Make	:	KE-JAL TECHNOLOGIES			
	Location	:	RO Product Outlet			
В	ROTAMETER					
	Quantity	:	TWO Nos.			
	Make	:	KEJAL TECHNOLOGIES			
	Location	:	RO Product flow RO Reject Flow			
С	PRESSURE GAUGE					
	•	:	2 Nos.			
	Range	:	0-7 & 0- 21 kg/cm ²			
	Make : KEJAL TEHNOLOGIES					

A N N E X U R E - V PRICE, COMMERCIAL TERMS AND

CONDITIONS

PRICE: 1 Our price for Design, Engineering and Supply of proposed water treatment plant, as described in our earlier Annexure shall be: REVERSE OSMOSIS PLANT CAPACITY: UF & 500 & 250 LPH WITH EDI Followed by 1. UF 1000 LPH 1 NOS 2. 500 LPH R O PLANT SS 1 SET 3. 250 LPH R O PLANT SS 1 SET 4. EDI (ELECTRONICS DIONNISED WATER) ION PURE 1 SET 5. UV 200 FLOW (ALFA) 2 NOS 6. TDS METER 2 NOS 7. CONDUCTVITY METER 3 NOS 8. CERCULETION SYSTEMS SS 316 L 1/2 INCH 1 SET 9. PHMETER 1 NOS 10. PIPING 1/2 INCH 120 METER VALVE & FITTING 1 SET 11. PLC (SIMENS) 1 NOS 12. TANK 1000 L SS 304 **2 NOS** 13. TANK (JEAKETING) 500 L SS 316 L air 1 NOS PUMP (GRUNDFORCE) SS 2 NOS **CONTROL PANEL WITH HEATER** 15. **2 NOS** 16. **SENSOR** 1 NOS DIGITAL TEMPRECURE METER 17. 1 NOS 18. PIPING 1/2 INCH INTERNAL 1 SET 19. **AUTO FLAUSHING VALVE** 1 NOS 20. **RETURN PIPE SPRINKLER** 3 nos **TOTAL: 18,50,900.00 GST 18 % EXTRA** TRANSPOTATION CHARGE: 20,000.00 2 GST: 18% Extra 3 **DELIVERY:** The Plant can be designed, assembled and made ready for dispatch in 4 weeks. However, an additional week is required for carrying out the Testing procedures. 4 **PAYMENT TERMS:** 30 % Advance along with formal purchase order.

60% Against dispatch 10% agaist work done

5 GUARANTEE / WARANTEE

The Water treatment system supplied is guaranteed for a period of 12 months from the date of commissioning OR 18 Months from the date of last major supply, whichever is earlier.

Equipment guarantee is valid against defective workmanship and / or poor performance of the system only. Our liability is limited to repair or replace the same and not subject to any wear/tear or supply of consumables/spares.

Above guarantee is subjected to:

- 1] Using spare parts / consumables recommended by us.
- 2] Operation and Maintenance of the plant as per our Operation manual.
- 3] Data Log sheet needs to be strictly maintained as per our instructions.4]

Free service every 3 months for a period of one year

OUTLET OF EDI UNIT: PURIFIED WATER AS PER USP STANDRAD				
Online PH	6 TO 7			
Conductivity	<0.6 us/cm			
TDS	< 0.4 ppm			
TOC	< 400 ppb			

Total bacteria count : < 100 cfu/ml						
Parameter	USP Grade	Expected value	Action level			
CONDUCTIVITY (25 C)	<1.25 mq	<0.5 mq	10.mq			
TOC	<500 ppb	<200 ppb	300 ppb			
BACTERIA COUNT	< 100 CFU/ML	< 50 CFU/ML	80 CFU/ML			

THANKS & REGRADS

