

Itarhi Road, Near Bachpan School,
Buxar, Bihar, 802103, Email – growindia40@gmail.com,
www.growindia.co.in Ph – 9612942489, 8210368884

Subject:- Project I:- Reverse osmosis Plant 1500 LPH.

To,

Dear Sir,

We take pleasure in introducing ourselves as one of the leading Engineering Companies offering projects and services in the fields of **mineral water plant, Paper plate making machine, silver paper lamination machine, paper cup making machine etc.**

We specialize in:

- Reverse Osmosis plant (R.O.Plant).
- Mineral water plant with ISI license.
- Paper plate making machine.
- Paper cup making machine.
- Silver paper lamination Machine
- Non Woven Bag Making machine
- Kulhad making machine
- Notebook making machine
- Sterilization by Ultraviolet Systems & Ozonation
- Pet blowing machine unit with compressor

We are committed to consolidating our position and reputation by adopting a flexible and open approach towards the needs of our clients by listening to and respecting their view, and being ahead of emerging trends and potential technologies breakthroughs. We are developing a stable client base with significant repeat business.

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R.O.PLANT

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PROJECT- I

WATER TREATMENT PLANT BASED ON REVERSE OSMOSIS TECHNOLOGY

ANNEXURE-I

Capacity: **1500 Lts. Per Hour (1.5 m³ per Hour)**

TECHNICAL SPECIFICATIONS

CONTENTS

PRE-TREATMENT SECTION:

- ☐ Raw Water Feed Pump
- ☐ Multi-grade sand bed filter
- ☐ Activated Carbon Filter
- ☐ Anti scalant Dosing System

FINE FILTRATION & REVERSE OSMOSIS BLOCK

- ☐ Micron Filter
- ☐ R.O. membrane
- ☐ SS Vertical High Pressure Pump with motor.
- ☐ SS – Powder Coated Skid for mounting R.O. equipment's and controls.

CONTROL INSTRUMENTS:

- ☐ Electrical Control panel
- ☐ Switches for Control with indication.

MEMBRANE FLUSHING SYSTEM

Membranes flushing / cleaning system with tank, SS pump, micron filter.

PRETREATMENT: FOR R.O.

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COARSE FILTRATION BY HIGH CAPACITY MULTIGRADE SAND FILTER

Raw water after oxidation is passed through FRP vessel Multi-grade sand bed pressure filter to remove suspended impurities and precipitate of iron and manganese.

ACTIVATED CARBON FILTER

Water stream coming from coarse filter is passed through FRP vessel Activated carbon filter which ensures odour, colour free filtered water also free from residual chlorine.

To maintain desired level of minerals / TDS in final product, major part of pretreated water shall be desalinated by R.O. with molecular rejection of dissolved solids. In molecular rejection, the hardness forming ions (Ca & Mg) may get deposited over membrane surface as a scale. Thus to avoid scale formation, the R.O. feed is softened by converting Ca, Mg to Na ions.

IRON REMOVAL FILTER (OPTIONAL)

Water stream coming from coarse filter is passed through iron removal filter which ensures iron free filtered water also free from residual iron.

PRETREATMENT FOR REVERSE OSMOSIS STREAM

Anti- Scalent Dosing to prevent formation of scale on membrane.

FINE FILTRATION BY MULTIMICRON CARTRIDGES FILTER

By above process of pretreatment, water becomes free from un-dissolved solids, iron, manganese and organic matters & filtered water upto 20 microns by particle filtration.

Keeping in view of porosity below 0.0005 microns and other characteristics of R.O. membranes, the make have specified that ideal SDI of R.O. feed water should be below 3 which is possible if water is properly filtered by micron cartridges of rating below 5 microns. Therefore we provided multi micron cartridges in stainless steel housing rating 5 microns to achieve ideal SDI level.

Since in blending stream purification (RO) everything has to be removed except minerals therefore the membranes is selected of such porosity / molecular weight cut off that there should not be molecular rejection of inorganic dissolved solids / minerals. As a result hardness do not precipitate over membranes and there shall not be any requirement of water Softening plant and blending stream has to be fine filtered before ultrafiltration membranes feed.

DESALINATION BY REVERSE OSMOSIS UNIT

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Reverse osmosis is based on the technology which removes total dissolved solids by their molecular rejection. In the process pretreated water is pumped to membrane and feed pressure is increased above osmotic pressure. As a result pure water migrates from the concentrate to produce perfectly sterilized desalinated water. The system is designed based on raw water analysis treated water quality & recovery. We offer R.O. block fully automatic with synchronized logic control & instruments for on-line measurement of parameters to ensure safe and efficient working as well as treated water quality control.

ROUTINE MEMBRANE FLUSHING / CLEANING SYSTEM

Though our pretreatment is perfect to prevent any deposition over membranes yet for additional safety measures, we have made provision of flushing the membranes by pure water after every fixed interval so that if any residual impurity traps over the membranes could be flushed out.

Thus by providing a foolproof system, we avoid the cleaning of membranes for the maximum

possible period. Since cleaning may revive the unit, but it never produce the specified outputs as well as quality of treated water also Detroit after cleaning.

MULTI STAGE STERILISATION

As described above, R.O. not only balance the level of minerals also sterilize the water then by rejecting microbiological and other impurities. Even then for a high purity as well as long shelf life water should be highly oxidized with various processes as under:

HIGH DEGREE OXIDATION WITH OZONE

To make perfect and absolute oxidation, Ozone is the latest technology which converts oxygen mole to ozone by electronic device and when ozone (O₃) is diffused in water, plenty of nascent oxygen (O) which not only increase the dissolved oxygen to saturation level also the residual level 0.2 – 0.4 of ozone ensure a perfect quality of long shelf life.

ULTRA VIOLET UNIT

The unit- produces ultra violet radiation of specified wave length 254 Nm, which are radially passed through the water columns. As a result water get sterilized at one more step to ensure water free from microbiological impurities.

EQUIPMENT / COMPONENTWISE DETAILS:

Raw Water Feed Pump

Quantity	:	One No.
Type	:	Horizontal Multistage Centrifugal

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Material of Cons. : CI
Capacity : 4000 Lts/hr @ 30 MWC
Make : **CRI**

Power : 1½ HP

COMMON PRETREATMENT FOR R.O.

PROCESS – FRP MULTIGRADE SAND BED FILTER – TO REMOVE SUSPENDED /
UNDISSOLVED IMPURITIES PLACED AFTER OZONATION.

Technical Data

Nos. off : One
Working : Down-flow
Max. Working Pressure (Kg/Cm2) : 3.5
Min. Working Pressure (Kg/Cm2) : 2.1
Max. flow rate (Lts/hr) : 4000
Min flow rate (Lts/hr) : 2500

Pressure Vessel

Type : Vertical Cylindrical
MOC : Seaflo
Testing Pressure (Kg/Cm2) : 10.0
Working dia. (inch) : 14
Height on Straight (inch) : 65

Filtration Media

Type : Multimedia sand with under-bed

Operation System

Type : Semi Automatic
Flow Monitoring unit : Multiport Valve
Quantity : One No.
Size (inch) : 1

MOC : FRP
Quantity : One Lot

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Size . (inch) : 1

COMMON PRETREATMENT FOR R.O.

PROCESS – FRP **ACTIVATED CARBON FILTER**– FOR DECHLORINATION,
DEODOURING, & DECOLOURING PLACED AFTER SAND BED FILTER.

Technical Data

Nos. off	:	One
Working	:	Down-flow
Max. Working Pressure (Kg/Cm2)	:	3.5
Min. Working Pressure (Kg/Cm2)	:	2.1
Max. flow rate (Lts/hr)	:	4000
Min flow rate (Lts/hr)	:	2500

Pressure Vessel

Type	:	Vertical Cylindrical
MOC	:	Seaflo

Product

Testing Pressure	(Kg/Cm2)	:	10.0
Working dia.	(inch)	:	14
Height on Straight	(inch)	:	653.
Filtration Media			
Type	:		Activated Carbon

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Operation System

Type	:	Semi Automatic
Flow Monitoring unit	:	Multiport Valve
Quantity	:	One No.
Size (mm)	:	25

Frontal Pipe Line

MOC	:	FRP
Quantity	:	One Lot
Size (inch)	:	1

PRETREATMENT FOR R.O. STREAM

PROCESS – ANTI-SCALANT DOSING -TO AVOID SCALING OVER R.O. MEMBRANES.

Anti- Scalant Dosing System:

Feeder	:	Electronic Metering Type
Quantity	:	One No.
Capacity	:	5-7 lph @ 6 bar
Make	:	Etatron/e-dose
Storage tank	:	PP
Chemical Grade		
Capacity	:	50 Ltr
Control	:	Synchronized for auto operation with feed pump.

MICRON CARTRIDGES FILTER**Technical Data**

Rating	:	5 microns
MOC	:	Polypropylene
Make	:	Kemflow/MMP
Size	:	4.0" (dia) x 20" (L)
Flow rate (Lts/hr)	:	4000
Nos. off	:	2

Cartridges Housing

Nos. off	:	2 No.
MOC	:	FRP

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Accessories. : Inlet, Outlet connections.

CONTROL INSTRUMENTS TO ENSURE QUALITY OF PRETREATMENT OUTLET / R.O.

FEED

a) Pressure Gauges : To check specified Pressures
Quantity : 4 Nos.
Type : Field Mounted
Make : **Mass/H-Guru**
Rating : 0 – 7 Kg/Cm2 Accessories
: Siphon & Cock assembly

REVERSE OSMOSIS BLOCK

Technical Data

Treated Water Quantity (Lts/hr) : 1500
(R.O. Outlet)
Working Pressure (PSIG) : 150 - 250
Permeate TDS : Less than 40 mg/l
Final water TDS : As per Requirement

Desalination Elements / Membranes

Type : TFC Brackish water High rejection
Polyamide type
Make : Toray/Dow
Model : 4040
Membrane Quantity : 6 Nos.

Membrane Housings

Type : Horizontal Pressure Vessel
MOC : FRP **Code line- Alpha/UK**

High Pressure Pump

Quantity : 1 No.
Type : Vertical Multistage Centrifugal
MOC : Stainless Steel
Make : **CRI/Lubi**
Drive Motor : TEFC, 1 PH., 220 V, 2900 rpm
Discharge Capacity (Lts/hr) : 4000 Lts/hr
Pressure : 110 mwc
Power : 3 HP

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Interconnecting Pipe Line

Quantity : 1 Lott
MOC : **FRP**
Size : 2/22

Micron Cartridges Filter

Rating : 5 microns
MOC : Polypropylene
Make : **Filtermation,**
Size : 4.0" (dia) x 20" (L)
Flow rate (Lts/hr) : 4000
Nos. off : 2
Cartridges Housing : FRP

CONTROL INSTRUMENTS FOR SAFE OPERATION FOR EACH R.O. UNIT.

- a) Flow Meter : To Measure Permeate & Concentrates & Blending flow rate
- Quantity : 2 Nos
Type : Rotameter (1,2,3,4)
Make : **Flowstar** / Equivalent
- b) Pressure Gauge : To measure feed & Concentrate
- Quantity : Two Nos.(E& F)
Range : 0-500 PSIG

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e

R.O. SMd : 1 No. for R.O. Unit SS

a
k

POST TREATMENT MICRON CARTRIDGES FILTER

Technical Data

Rating M : 5 microns
MOC a : Polypropylene – Wounded Type
Make s : **Filtermation/Filtek**
Size / : 2.5” (dia) x 20” (L)
Flow rate (Lts/hr) : 2000
Nos. off b : 1
Microns Ratings T : 0.5 micron

y

Cartridges Housing

Nos. off e : One No.
MOC : FRP
Accessories. B : Inlet, Outlet connections.
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ELECTRICAL PANEL

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A Control panel is to provide as a safety measure for
the pumps & other electrical items.

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- Complete Starters, Overload Relays
- MCB's, Indicating Light

- Push Buttons
- Rocker Switches for Dozers
- Incomers, Auto- Manual Switches

S.No.	Product	Amount
01.	Complete Reverse Osmosis 1500 LPH	2,30,000.00
	Total	2,30,000.00
	GST/IGST (18%)	41,400.00
	TOTAL	2,71,400.00

Assumptions and Facts

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- (I) In the projection stated here we have stated the maximum expense and the minimum profit that the owner can is likely to get in the toughest circumstances.
- (II) The profit will increase remarkably if the owner runs more than one machine as fixed costs gets divided and viable costs have more weight-age.
- (III) The projections would be true only if one is able to run the machine continuously.
- (IV) The rate of Fabrics and Bag are the Standard Rate prevailing in the market of India, at present. It is however subjected to change due to fluctuating market conditions.

Our authorized Banking Partner(s)

- 1. ICICI BANK- GROW INDIA, ACCOUNT NO-046505500306, IFSC CODE- ICIC0000465, BRANCH, P P ROAD BUXAR, BIHAR.**
- 2. AXIS BANK - GROW INDIA, ACCOUNT NO- 919020096530477, IFSC CODE- UTIB0001816, BRANCH, P P ROAD BUXAR, BIHAR.**

Important Terms and Conditions:

- 60% Advance at the time of order, Balance before dispatch of product.
- **Loading/Unloading, Transportation and Packaging charges will be extra (GI won't be responsible for any kind Of transport / loading and unloading damage).**
- Insurance cost (if any) to be bear by customer/buyer.
- Amount once paid is not refundable.
- Goods once sold will not be taken back in any condition.
- **Invoice issued by GROW INDIA will be only valid for any kind of future Claim/dispute/service/installation/delivery etc.**

Other detailed terms and conditions

You are requested to kindly go through all the terms and conditions and clear your doubt if any to make our relationship stronger

*** Terms and Condition:-**

- 1. Payment Terms: 60 % Advance at the time of order and balance payment before dispatch of machine.**
- 2. Price Ex Buxar:** All prices are ex-factory Buxar. Commissioning and Installation Charges will be extra.
- 3. Quotations:** All written quotations automatically expire unless accepted within 15 days from the date quoted. All stenographic and clerical errors are subject to correction.
- 4. Packing & Transportation:** Packing and transportation charges will be charged extra, Company will not be responsible in case if any damage would be happening in transportation (GI won't be responsible for any kind of transport/loading and unloading damage).
- 5. Taxes Extra:** all taxes/duties will be charged extra.
- 6. Loading and unloading:** Loading and unloading charges will be charged extra.
- 7. Warranty:** One year on Spare part of the machine from the date of supply. Company will be liable only in case

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- of any manufacturing defects only and not will be liable if it burns or happens with short circuit. Only Repair service free, if need parts charge should be extra.
8. Insurance: Insurance to be arranged by you at your own cost.
 9. Road Permit: Please send road permit (i.e., e-way bill) for out station, if required.
 10. Note: Without any information company will not responsible for deposit payment in any other account.
 11. Delivery time: 02 - 08 weeks
 - 12...Installation Service is NOT AVAILABLE for dealer/trader, here dealer or trader define who purchase the machine/product at dealer rate. Any guarantee and warranty also NOT AVAILABLE for dealer/trader.
 13. Paid amount is NON-REFUNDABLE [Refund is only possible if product is not dispatched within 6-8 weeks (in case of Indian machine) & within 10-12 weeks (in case of imported machine) after full payment received].
 14. Goods once sold will not be taken back in any condition.
 15. Grow India reserves the right to add or change the above terms and conditions and prices as and when required without giving any prior notice or assigning any reasons thereof.
 16. Once your order will be placed then it will not be cancelled under any circumstances.
 17. Disputes are under Buxar jurisdiction only.
 18. You are requested to kindly speak the company authorized personnel only
 19. If machine/product will get installed by any un-authorized personnel, Grow India won't be responsible for any damages (and all warranty and guarantee stand cancelled).
 20. We do not have any bank account other than mentioned in QUOTATION.
 21. Any product which you want to buy apart from mentioned in this QUOTATION will be treated as a separate deal.
 22. We strongly suggest that do not deal with any un-authorized person even if he is saying that he is from Grow India.

Thanking you and assuring you best co- operation.

THANKING YOU

GROW INDIA