



# **BARON TECHNO PRODUCTS**

#2-3-64/19, THIRUMALA NAGAR, CPL ROAD, AMBERPET, HYDERABAD-13

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Date: 18-07-

2019

## **SUBJECT: SUPPLY OF 500LH R.O.PLANT QUOTATION**

**Dear Sir,**

We take this opportunity to introduce ourselves as the pioneers in the field of **WATER TREATMENT PLANTS**. Further we wish to inform you that our Services include supply, erection and commissioning of the system.

We are proud to inform you that our wide market network, technical expertise and outstanding customer Service & manufacturing have made us the best in the industry.

### **Our products:**

1. REVERSE OSMOSIS PLANTS.
2. WATER LEVEL CONTROLLERS.
3. U.V. WATER PURIFIER.
4. ELECTRONIC WATER CONDITIONERS
5. SOLAR WATER HEATING SYSTEM.
6. WATER SOFTENERS.
7. WATER COOLERS.
8. GAS /FUEL & POWER SAVERS.

We have done an in-depth evaluation and feasibility, in respect to the inputs given by you and are glad to furnish the following for your kind perusal.

- Product Features and Advantages.
- Recommended System Technical Specifications.
- Quotation.

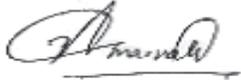
We now request you to kindly consider the offer and give us an opportunity to serve you the best.

In case of any techno-commercial queries, please feel free to contact us

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

Yours sincerely,

**For BARON TECHNO PRODUCTS**



**G.B. AMARNATH.**

**Annexure – I**

**DESIGN BASIS**

**Raw Water Details**

|                                     |  |
|-------------------------------------|--|
| Color                               | Colorless  |
| pH                                  | 7.50 – 8.0   |
| Total Suspended solids              | < 15.0- PPM (maximum designed limit 25 ppm)              |
| Turbidity                           | < 8.0 NTU (maximum designed limit 15 NTU)                |
| Conductivity                        | 1300.0 $\mu$ /cm (maximum designed limit 4000 $\mu$ /cm) |
| Total Dissolved Solids              |  |
| Total Hardness as CaCO <sub>3</sub> |  |

**Quality of Treated water & out Put after Reverse Osmosis**

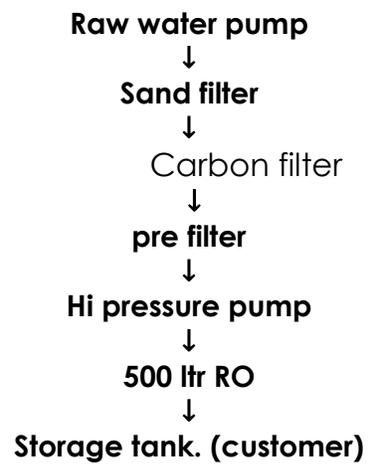
|                        |   |                              |
|------------------------|---|------------------------------|
| pH                     | : | 7.0 to 7.5                   |
| Turbidity              | : | Nil                          |
| Total Suspended solids | : | Nil                          |
| Conductivity           | : | 50 $\mu$ /cm – 130 $\mu$ /cm |

|                         |   |                         |
|-------------------------|---|-------------------------|
| Total Dissolved solids  | : | 25PPM – 70PPM           |
| Total Hardness          | : | 2.0 PPM – 10.0 PPM      |
| Product Flow rate of RO | : | 0.6 M <sup>3</sup> /Hr. |
| Feed Flow               | : | 1.6 m <sup>3</sup> /Hr. |
| Recovery                | : | 37%                     |
| Reject flow             | : | 1.0 m <sup>3</sup> /hr  |

### Annexure – II

#### SCHEME & SCOPE OF SUPPLY

#### Water Treatment Plant Scheme



## Scope of Supply

|  |       |
|--|-------|
| 1. SAND/CARBON FILTER                                    | 2SETS |
| 2. PVC INTER-CONNECTING PIPE WORK                        | 1SET  |
| 3. REVERSE OSMOSIS " <b>BARON</b> " 500LPH & ACCESSORIES | 1SET  |
| 4. ROTA METER ON LINE                                    | 2SETS |
| 5. PRESSURE GUAGE  | 2SETS |
| 6. PRE-FILTER (MICRON)                                   | 1SET  |
| 7. DOSING PUMP (E DOSE)                                  | 1SET  |
| 8. CONTROL PANNEL (SS)                                   | 1SET  |
| 9. RAW WATER PUMP  | 1SET  |
| 10. HIGH PRESSURE PUMP                                   | 1SET  |

## I N T R O D U C T I O N

- **SAND & CARBON**

Sand Filter is provides to remove suspended matter and turbidity present in water. Since source of Water is bore well /surface water may content suspended matter. Suspended matter present in Water forms layer on sand filter hereby reducing efficiency of RO

Carbon Filter is provides to remove free chlorine, small, organics present in water. Since source of Water is bore well/surface water may content chlorine, organics.

### **2. Fine Filtration (micron filter)**

Water is fed to the RO plant through a cartridge filter with a nominal rating of 5 micron to Exclude particulate matter larger than the filter rating and thus prevent clogging of the

Membrane surface.

### **3. REVERSE OSMOSIS SYSTEM**

#### **Process Description**

Reverse Osmosis process is a membrane process in which a synthetic semi-permeable membrane is used to separate water from dissolved impurities. When a semi permeable membrane separates a dilute and concentrated solution of salts, due to osmosis, the water from the dilute solution side passes through the membrane to the concentrated side till osmotic equilibrium is attained. Now, if the pressure is applied and increased gradually on the concentrated side, the flow of water continues to reduce till the applied pressure is equal to the osmotic pressure. Any pressure in excess of the osmotic Pressure reverses the direction of flow of water and water from the concentrated side enters the dilute side. This process is called the Reverse Osmosis.

It is very essential to ensure that the water fed to reverse osmosis membranes is free from Particulate matter, scale-forming salts of Ca & Mg and silica to prevent membrane fouling. Also, the water should be free from organic matter, heavy metals and oxidizing agents like free chlorine.

Raw Water with a higher TDS is fed into the Reverse Osmosis Unit. The water is pumped into the system and permeate water at a TDS of about 25 – 150 ppm will be delivered by the RO plant.

#### **Reverse Osmosis Unit**

The Reverse Osmosis Unit comprises a high-pressure pump, pressure tubes and membranes as the main components. About 35 % of the feed water is available as the permeate (product) and the balance is the reject from the system. The reject is disposed to drain.

#### **TECHNICAL SPECIFICATIONS:**

## **CAPACITY: REVERSE OSMOSIS WATER PURIFIER (500 LPH)**

### **RAW WATER PUMP.**

Number of units: ONE  
Capacity: 2m<sup>3</sup>/hr  
Type: Mono block centrifugal pump.  
Make: CRI  
Pressure: 3.0 Kg /Cm<sup>2</sup>.

### **SAND&CARBON MEDIA FILTER**

No of units: TWO  
Flow rate: 0.85 m<sup>3</sup>/hr  
Filtration rate: 14m<sup>3</sup>/m<sup>2</sup>/hr  
Backwash rate: 22m<sup>3</sup>/m<sup>2</sup>/hr  
Carbon: activated (600 iodine)  
Size: Dia 300 X 980 mm HOS  
Make: FRP  
Multiport valve: 15 NB.  
Pipe Line: UPVC 1"

### **DOSING SYSTEM**

Flow rate: 0 – 4 LPH.  
Pump type: E-Dose.  
Operating Pressure: 4 Kg/cm<sup>2</sup>.  
Volume: 50 liters HDPE

### **MICRON FILTER**

Number: ONE  
Size: 4" X 20"  
MAKE: PP  
Type: PP (5 micron)

### **PRESSURE PUMP**

Capacity: 2.7 m<sup>3</sup> P/H  
Number: ONE  
Pressure: 14 KG  
Make: LEO

### Annexure – III

#### 4. REVERSE OSMOSIS

|  |                            |
|--|----------------------------|
| MODEL  | <b>BARON</b> 500 LPH       |
| Average Permeate Flow-Liters/hour                                | 500                        |
| *Average Recovery  | 40 %                       |
| Membrane Model/Type  | GE/EMBRONE                 |
| Membrane dia X length in inches                                  | 8INCH/ 40INCH              |
| No of Membranes  | ONE                        |
| No of Pressure Tubes   | ONE                        |
| Make of pressure tube  | GE                         |
| MOC of pipe line (RO feed line)                                  | UPVC                       |
| Size of pipe line  | 40 NB                      |
| MOC of product water line  | UPVC                       |
| Size of Product water line                                       | 1 “                        |
| Max TDS in Feed-ppm (raw water)                                  | NOT TO EXCEED 1500 ppm     |
| No. of Rota meter  | 2 no's (product/reject)    |
| MOC of Rota meter  | SS/Equi                    |
| Pressure switch  | Low & high Pressure switch |
| Control panel  | SINGLE PHASE               |
| Average TDS Removal-%  | 95%                        |
| High Pressure Pump Type  | Multistage Centrifugal     |
| Pump Make  | LEO                        |
| Power supply   | 250V / 50Hz                |
| Minimum Pressure reqd at the H.P pump suction-Kg/cm <sup>2</sup> | 1.0                        |

(MOC) Material of construction

## Annexure –IV

### SCHEDULE OF EXCLUSION

#### Area required for Erection & commissioning of RO plant is 10F X 8F with shed

- Feed water tank and pump
- 2. All civil works such as foundations of equipments and pipe supports, Supporting structures and platforms, RCC saddle supports for horizontal vessels, Mass concreting of units.
- 3. Construction of drains sumps and drain channels
- 4. All electrical works & power panel
- 5. All Labors, Chemicals, Tools and Tackles required during time of Erection & Commissioning shall be provided by you.
- 6. Inlet and outlet of complete unit.
- 7. Unloading, handling and safe storage of material at site
- 8. All equipments, work services not specifically mentioned as forming a part of Our offer.

#### Price Schedule

| S. No | Description  | Qty  | Unit Price             | Total Price      |
|-------|--|------|------------------------|------------------|
| 1.    | System cost for supply, erection and commissioning of REVERSE OSMOSIS Plant.500lph | 1no. | 95,000-00              | 95,000-00        |
| 2.    | Installation & Commissioning   |      |                        | Included         |
| 3.    | Transport  |      |                        | Extra at Actuals |
| 4.    | Laying of Water Supply Pipe Line   |      |                        | Extra at Actuals |
| 5.    | SS Tank  |      | @15.80 Paisa per Liter |                  |
| 6.    | Raw Water Tank   |      | @4.80 per liter        |                  |

**TERMS & CONDITIONS:**

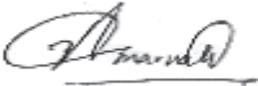
**PAYMENTS:** 75% advance and balance against delivery.

**TAXES:** GST@18% extra on the above price.

**DELIVERY:** within in 7 days on site from the date of receipt of valid P.O.

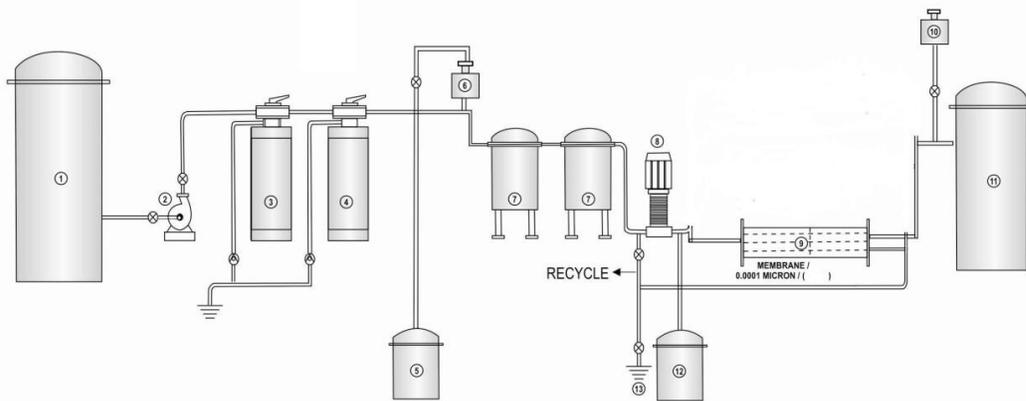
**VALIDITY:** This offer is valid up to 90 days from the date of offer.

**For BARON TECHNO PRODUCTS**

A handwritten signature in black ink, appearing to read 'G.B. Amarnath', written over a horizontal line.

**G.B. AMARNATH.**

## REVERSE OSMOSIS SYSTEMS FLOW CHART OF OPTIONAL 1000 LPH PLANT



- |                               |   |
|-------------------------------|---|
| 01. RAW WATER STORAGE TANK    | 08. HIGH PRESSURE PUMP                    |
| 02. FEED PUMP                 | 09. MEMBRANE 0.0001 MICRON                |
| 03. SAND FILTER               | 10. AUTOMATIC PH CORRECTION DOSING SYSTEM |
| 04. CARBON FILTER             | 11. FINAL WATER STORAGE TANK              |
| 05. CHEMICAL DOSING TANK      | 12. CHEMICAL CLEANING TANK                |
| 06. ANTISCALENT DOSING SYSTEM | 13. WASTE WATER                           |
| 07. 5 & 20 MICRON FILTER      |   |