



Uttarakhand Livestock Development Board

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Clarification & Amendment

Bid Ref. No. 3663/ULDB/PROC./Vol.XVI ETT-II/2019-20

Dated: 20th March 2020

Kindly look in to the following clarification/ amendment in Bid Reference No. 3663/ULDB/PROC./Vol.XVI ETT-II/2019-20 Dated: 20th March 2020:

S. No.	Reference	Clarification & Amendment
1	<p>Page No. 21: SCHEDULE: TWO</p> <p>TECHNICAL SPECIFICATION OF WATER PURIFICATION SYSTEM:</p>	<p>System should provide both Type 1 and Type 2 water. The system should be designed handle hard water conditions having feed water Conductivity up to 2000 micro S/cm, Free chlorine- 2 – 3 ppm & Fouling Index upto 20 or better.</p> <p>Prefiltration unit- 5 and 1 micron filter and pump.- must provide 5 and 1 micron – 06 numbers each filtra extra to be provided. Should have inbuilt Booster pump to maintain feed pressure of system from the same OEM.</p> <p>Type 2 water system -Ist stage water system for RO EDI Type 2 water laboratory applications that can feed to type 1 water system.</p> <p>Pre-treatment cartridge with activated carbon, 0.5 micron filter followed by 0.1 micron filter and anti-scaling agent to enhance the life of downstream RO cartridge. Reverse osmosis should be able to reject 95-99% of ions and organics with pre and post conductivity meter of RO cartridge.</p> <ul style="list-style-type: none"> ○ RO should have technology to minimize the RO waste water by partial recirculation. ○ Self-regenerating electro-deionization module (EDI) to eliminate the requirement of frequent replacement of DI cartridge and EDI must have carbon bead at cathode to eliminate the requirement of any softener cartridge. ○ Water quality: Flow rate: 3 L/hr, Type 2 water (Ions organics removal up to 99%, Resistivity: >5-15 Mohm.cm, TOC < 30 ppb) ○ Type 2 water Reservoir minimum 30 Litres with auto cut-off Tank level sensor. ○ System must have inbuilt free software to connect it through any PC/Laptop to download the history of 6 months, to control the system Remotely through LAN cable, to see the complete schematic on single window of PC/Laptop and System must have inbuilt system for data on total throughput of the cartridge online, the cartridge should not require ant tool to replace. ○ Display: Water quality after every purification step (Feed water, RO feed water, RO product water, EDI Product water); Tank Level; Alarm and alert on water quality, No feed water alarm etc. <p>2nd stage system for Type 1 water : -</p> <ul style="list-style-type: none"> ○ Ultrapure water machine producing water of: - Resistivity: 18.2 MΩ.cm at 25 °C, TOC < 5 ppb (µg/L), Bacteria < 0.1 CFU/mL. Automatic recirculation feature. ○ The polishing cartridge should contain mixture of activated carbon and mixed ion exchange beads to reduce Ionic and organic level. One extra cartridge to be provided. ○ System must have inbuilt dual wavelength UV Lamp to minimize TOC & Macrobacteria. ○ System must have accurate online Resistivity (temperature compensated and nor compensated) for the dispensing water on system display. ○ System must have easy water delivery: Manual water delivery and Volumetric water delivery. ○ System should be delivered with a certified 0.22 micro m final filter. One extra 0.22 micro m final filter to be provided.

- One extra polishing cartridge to be provided.
- To guarantee compliance with minimum laboratory safety requirements, and to ensure that the water purification system meets internationally-recognized safety norms, the Both the Type 1 & 2 water purification system shall be listed with Underwriters Laboratories (both UL and ULC), and will carry the CE mark, indicating compliance with EC Directives.
- Both the polishing cartridge and final filter must be supplied with Quality certificate from the OEM.
- The bidder must submit Performance Certificate from any organizations for provision of Services in time.

Should be read as

System should provide both Type 1 and Type 2 water. The system should be designed handle hard water conditions having feed water Conductivity up to 2000 micro S/cm, Free chlorine- 0.5 ppm & Fouling Index up to 1000 or better.

Prefiltration unit- 5 and 1 micron filter and pump.- must provide 5 and 1 micron – 06 numbers each filtra extra to be provided. Should have inbuilt Booster pump to maintain feed pressure of system.

Type 2 water system -Ist stage water system for RO EDI Type 2 water laboratory applications that can feed to type 1 water system.

Pre-treatment cartridge with activated carbon, 0.5 micron filter followed by 0.1 micron filter and anti-scaling agent to enhance the life of downstream RO cartridge. Reverse osmosis should be able to reject 95-99% of ions and organics with conductivity meter of RO cartridge.

- RO should have technology to minimize the RO waste water by partial recirculation.
- Self-regenerating electro-deionization module (EDI) to eliminate the requirement of frequent replacement of DI cartridge and EDI have carbon bead at cathode to eliminate the requirement of any softener cartridge or should have Ion exchange resins to avoid scaling.
- Water quality: Flow rate: 3 L/hr, Type 2 water (Ions organics removal up to 99%, Resistivity: >5-15 Mohm.cm, TOC < 30 ppb)
- Type 2 water Reservoir minimum 30 Litres with auto cut-off Tank level sensor.
- System must have communication port and mechanism through which assembly is connected through any PC/Laptop to download the history of 6 months, to control the system Remotely through Net or LAN cable, we can see the complete schematic on single window of PC/Laptop as and when needed by our lab and System must have inbuilt system for data on total throughput of the cartridge online.
- Display: Water quality after every purification step (Feed water, RO feed water, RO product water, EDI Product water); Tank Level; Alarm and alert on water quality, No feed water alarm etc.

2nd stage system for Type 1 water : -

- Ultrapure water machine producing water of: - Resistivity: 18.2 MΩ.cm at 25 °C, TOC < 5 ppb (µg/L), Bacteria < 0.1 CFU/mL. Automatic recirculation feature.
- The polishing cartridge should contain mixture of activated carbon and mixed ion exchange beads to reduce Ionic and organic level. One extra cartridge to be provided
- System must have inbuilt dual wavelength UV Lamp to minimize TOC & Macrobacteria.
- System must have accurate online Resistivity (temperature compensated and nor compensated) for the dispensing water on system display.
- System must have easy water delivery: Manual or Volumetric water delivery.
- System should be delivered with a certified 0.22 micro m final filter. One extra 0.22 micro m final filter to be provided.
- One extra polishing cartridge to be provided.

		<ul style="list-style-type: none"> ○ To guarantee compliance with minimum laboratory safety requirements, and to ensure that the water purification system meets internationally-recognized safety norms, the Both the Type 1 & 2 water purification system shall be listed with Underwriters Laboratories (both UL and ULC), and will carry the CE mark, indicating compliance with EC Directives. ○ Both the polishing cartridge and final filter must be supplied with Quality certificate from the OEM. ○ The bidder must submit Performance Certificate from any organizations for provision of Services in time. <p>Other Technical Specification remain same as described in bid reference no. 3663/ULDB/PROC./Vol.XVI ETT-II/2019-20 Dated: 20th March 2020.</p>
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Other Terms & conditions will remain same as described in Bid Reference No. 3663/ULDB/PROC./Vol.XVI ETT-II/2019-20 Dated: 20th March 2020.

Chief Executive Officer
Uttarakhand Livestock Development Board