Water Quality Test Report

Sample Temperature: 4.3°C
TDS: 858 mg/L
Conductivity (EC @ 25°C): 134.1 µS/cm
Source Type: Factory Municipal Filtration System

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1. General Chemistry

Parameter	Value	Ideal/Standard Range	Interpretation	Recommendations
pH	7.3	6.5 – 8.5	Neutral and stable	None required
TDS	858 mg/L	< 500 mg/L (drinking)	Elevated. May affect taste and long-term appliance performance	Consider reverse osmosis or blending with low-TDS water if used for drinking
EC @ 25°C	134.1 µS/cm	Typically < 500 µS/cm	Acceptable	No action needed unless trend increases

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2. Major Ions

Parameter	Value (mg/L)	Ideal Range	Interpretation	Recommendations
Na (Sodium)	106.1	< 100 for taste, < 200 for health	Slightly above taste threshold	Monitor if used for drinking; not ideal for sodium-sensitive individuals
K (Potassium)	11.1	< 12	Acceptable	None required
Ca (Calcium)	159.3	40 – 100	High	May cause scaling; consider softening if used in equipment
Mg	19.4	< 50	Normal	No action needed

(Magnesium)				
Cl (Chloride)	208	< 250	Acceptable, though on the high side	Monitor if rising over time
HCO_3 (Bicarbonate)	353	–	Indicates good buffering capacity	None required
SO_4 (Sulfate)	65	< 250	Acceptable	None needed

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3. Trace Elements and Metals

Parameter	Value (mg/L)	Safe Limits	Interpretation	Recommendations
Fe (Iron)	0.1	< 0.3	Acceptable	No immediate concern
Mn (Manganese)	< 0.03	< 0.05	Within safe limits	No action
Cu (Copper)	< 0.02	< 1.0	Safe	No action needed
Zn (Zinc)	< 0.03	< 5.0	Safe	No action needed
P (Phosphorus)	0.02	–	Not typically harmful at this level	No action

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4. Nitrogen Compounds

Parameter	Value (mg/L)	WHO / Local Guidelines	Interpretation	Recommendations
NH_4-N (Ammonium)	< 0.28	< 0.5	Acceptable	No immediate concern
NO_3-N (Nitrate)	21.26	< 50 (WHO)	Acceptable	Monitor regularly; important for infants if used for drinking water

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5. Other Inorganics

Parameter	Value (mg/L)	Safe Limit	Interpretation	Recommendations
F (Fluoride)	0.04	< 1.5	Very low	No action
B (Boron)	0.22	< 0.5	Acceptable	None needed

Parameter	Result	Standard	Interpretation	Recommendations
Total Bacteria	680 cfu/ml	No formal drinking standard (used as indicator)	High — may indicate organic contamination or biofilm buildup	Disinfection (UV/chlorination) advised if for potable use
Total Coliforms	2,420 cfu/100ml	0 cfu/100ml (drinking)	Indicates faecal or environmental contamination	Treat with chlorination/UV; investigate contamination source
E. coli	<1 cfu/100ml	0 cfu/100ml	Within safe limits	Maintain disinfection system and monitor weekly

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Summary of Key Findings

Chemical Quality: Mostly within acceptable limits. **TDS and calcium are elevated**, which may cause **scaling in pipes and appliances**.

Sodium is slightly above taste threshold, but not a health concern for the general population.

Microbiological quality is a major concern due to **high total coliform and bacterial counts**, despite E. coli being <1 cfu/100ml.

If the water is **intended for drinking**, treatment is essential.

Recommendations

Immediate Actions

Disinfect water: Use **UV treatment** or **chlorination** to eliminate bacterial and coliform presence.

Investigate contamination source: Look for entry points (e.g., wellheads, tanks, pipe leaks).

Flush and sanitize the entire system if necessary.

Medium-Term Actions

Install **point-of-use filtration or RO system** to reduce TDS, calcium, and sodium if water is consumed or used in appliances.

If water is used in **processes or production**, ensure treatment systems are routinely serviced.

Monitoring

Retest water after treatment is implemented, especially:

E. coli and Total Coliforms (monthly)
TDS, hardness, and sodium (quarterly)

Keep logs of all readings and maintenance events.