

Requisition No. - RDKL/FW/2324/SR00021

Date of Allotment - 01.11.23

Test Parameter - Total Hardness, Ca, Mg

Date of submission - 15.11.23

Test Material - Water

Date of Analysis - 01.11.23

Name of Supervisor - Mr. Md. A. Refique

Sr No.	Sample Code	Sample vol (ml)	Initial reading	Final reading	Diff	Total Hardness (mg CaCO ₃ /L)
1	2324/RDKL/FW/L00022	50	0	>15	exceed	-
		25	15	29.4	14.4	576

Sr No.	Sample Code	Sample vol (ml)	Initial reading	Final reading	Diff	Ca Hardness (mg CaCO ₃ /L)	Ca ²⁺ (mg/L)	Mg ²⁺ (mg/L)
1	2324/RDKL/FW/L00022	50	0	>15	exceed	-	-	-
2.		25	15	22.6	7.6	307	123	66

Calculation:
$$\text{Total Hardness (mg CaCO}_3\text{/L)} = \frac{(TV - B) \times D1 \times 1000}{\text{ml of sample}}$$

where, TV = titration volume for sample
 B = " " " " Blank

D1 = mg CaCO₃ ml of EDTA equivalent to mg CaCO₃
 10ml of EDTA consumed for titration of 10ml CaCO₃ (1mg/ml), Hence

$$D1 = \frac{10 \times 1}{10} = 1$$

$$\text{Calcium Hardness (mg CaCO}_3\text{/L)} = \frac{(TV - B) \times D2 \times 1000}{\text{ml of sample}}$$

D2 = ml of EDTA equivalent to mg CaCO₃ using murexide indicator.
 9.9ml EDTA consumed for titration of 10ml CaCO₃ (1mg/ml) using murexide indicator.

$$D2 = \frac{10 \times 1}{9.9} = 1.01$$

Sd/- Md. A. Refique

Sd/-
 15.11.23