

Sample Requisition No - RDKL / FW / 2324 / SR00019

Allocation Date - 17/10/2023

Test Start Date - 18/10/2023

Test End Date - 18/10/2023

Parameter - Total Hardness, Calcium, Magnesium

Due Date - 31/10/2023

Name of Supervisor - Md. A. Rafique, SC - B

Total Hardness

Test Method: APHA 24<sup>th</sup> Ed. 2340-C  
Part 2000: 124-126

Standardization of EDTA Sol<sup>n</sup> -

10 ml of CaCO<sub>3</sub> Sol<sup>n</sup> ( $\approx 10$  mg CaCO<sub>3</sub>)  $\approx$  9.9 ml of EDTA Sol<sup>n</sup>

$\therefore N = \text{mg equivalent of CaCO}_3 \text{ per ml of EDTA} = \frac{10}{9.9} = 1.0101$

Sl. No.	Sample Code	Sample Volume (ml)	Volume of EDTA Consumed (ml)	Result (mg/l)
01.	2324/RDKL/FW/FW/L00018	50	Range over (< 15 ml)	
02.	"	25	8.10 - 0.0 = 8.1	327

Calculation - Total Hardness =  $\frac{\text{Volume of EDTA consumed (ml)} \times 1000 \times N}{\text{Sample Volume (ml)}}$

Calcium, Magnesium

Test Method: APHA 23<sup>rd</sup> Ed 3500 CaB  
Part 3000: 254 to 255  
APHA 24<sup>th</sup> Ed 3500-MB Part 3000  
274

Sl. No.	Sample Code	Sample Volume (ml)	Volume of EDTA Consumed (ml)	Ca-Hard	Ca <sup>2+</sup>	Mg <sup>2+</sup>
01.	2324/RDKL / FW / FW / L00018	50	19.5 - 8.10 = 11.4	230	92	24

Stand<sup>n</sup> of EDTA Sol<sup>n</sup> -

10 ml of CaCO<sub>3</sub> Sol<sup>n</sup> (= 10 mg CaCO<sub>3</sub>)  $\approx$  9.9 ml of EDTA Sol<sup>n</sup>

$\therefore N = \text{mg Equivalent of CaCO}_3 \text{ per ml of EDTA} = \frac{10}{9.9} = 1.0101$

Calculation - Ca-Hard =  $\frac{\text{Volume of EDTA consumed} \times 1000 \times N}{\text{Sample Volume (ml)}}$   
(mg/l)

$$\text{Ca}^{2+} \text{ (mg/l)} = \text{Ca-Hard} \times 0.40$$

$$\text{Mg}^{2+} \text{ (mg/l)} = \{ \text{T. Hard} - (\text{Ca-Hard}) \} \times 0.243$$

Ajout Vama  
25/10/23

25.10.23