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Section 01

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### Turbidimetric Determination of Sulfate in Seawater

	Turbidimetric Determination of Sulfate in Seawater	MAX	PTS
1	Abstract		
2	Introduction		
3	Table of absorbance as time goes by for one standard		
4	Plot of absorbance vs time for above data		
5	Table of Standards: Conc (ppm), absorbance, corrected absorbance including calculations for concentration		
6	Plot for above data		
7	Comment on minimum-maximum SO <sub>4</sub> <sup>2-</sup> concentration precisely measured by this method		
8	Table of data for seawater		
9	Concentration of sulfate in prepared solution		
10	Concentration of sulfate in seawater		
11	Compare results with literature values. Cite source.		
12	Answer to Questions etc.		
	TOTAL		

**Abstract:****Introduction:**

The purpose of this experiment is to calculate the amount of sulfate within the seawater sample and compare it to a prepared calibration curve. The net ionic equation for the experiment is  $\text{SO}_4^{2-} + \text{Ba}^{2+} \rightarrow \text{BaSO}_4$ .

**Results and Discussions:**

Table I: Raw Collected Data

Calculations:

Sulfate Standard:

$$2.9588 \text{ g Na}_2\text{SO}_4 \text{ g} \times (96.06 \text{ g SO}_4^{2-} / 142.04 \text{ g Na}_2\text{SO}_4) \times (1/2 \text{ L}) \times (1/96.06 \text{ g SO}_4^{2-}) \times (1000 \text{ mg} / 1 \text{ g}) = 1000.50 \text{ ppm SO}_4^{2-}$$

Standard Calculations:

$$1: 1000.50 \text{ ppm SO}_4^{2-} \text{ mg/L} \times 1 \text{ L} / 1000 \text{ mL} \times 1 \text{ mL} / 1 \times 1 / 100 \text{ mL} \times 1000 \text{ mL} / 1 \text{ L} = 10.005 \text{ ppm SO}_4^{2-}$$

$$2: 1000.50 \text{ ppm SO}_4^{2-} \text{ mg/L} \times 1 \text{ L} / 1000 \text{ mL} \times 2 \text{ mL} / 1 \times 1 / 100 \text{ mL} \times 1000 \text{ mL} / 1 \text{ L} = 10.005 \text{ ppm SO}_4^{2-}$$

$$3: 1000.50 \text{ ppm SO}_4^{2-} \text{ mg/L} \times 1 \text{ L} / 1000 \text{ mL} \times 4 \text{ mL} / 1 \times 1 / 100 \text{ mL} \times 1000 \text{ mL} / 1 \text{ L} = 10.005 \text{ ppm SO}_4^{2-}$$

$$4: 1000.50 \text{ ppm SO}_4^{2-} \text{ mg/L} \times 1 \text{ L} / 1000 \text{ mL} \times 6 \text{ mL} / 1 \times 1 / 100 \text{ mL} \times 1000 \text{ mL} / 1 \text{ L} = 10.005 \text{ ppm SO}_4^{2-}$$

$$5: 1000.50 \text{ ppm SO}_4^{2-} \text{ mg/L} \times 1 \text{ L} / 1000 \text{ mL} \times 9 \text{ mL} / 1 \times 1 / 100 \text{ mL} \times 1000 \text{ mL} / 1 \text{ L} = 10.005 \text{ ppm SO}_4^{2-}$$

Table II: Calculated Results