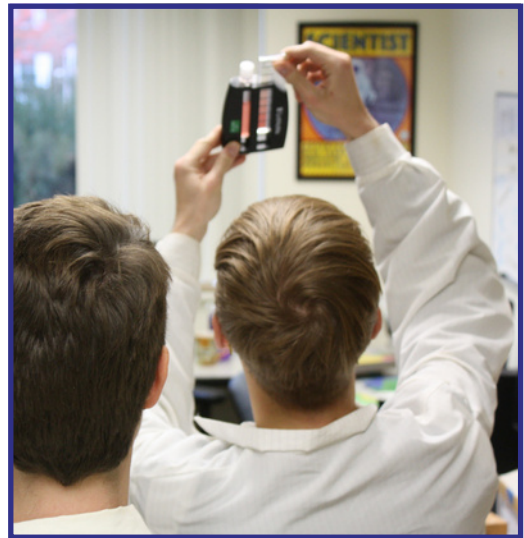
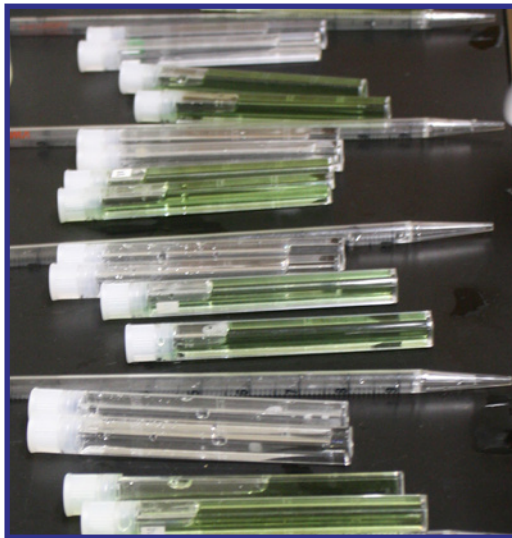
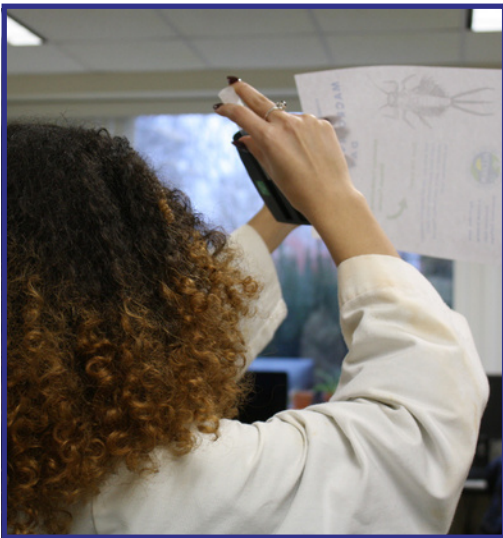


Data Reminders for HACH and LaMotte Kits

Best Practices For Data Collection



Dickinson

Acceptable Precision Ranges

What is a precision range?

All replicates must be within the acceptable precision range of each other, meaning the values from two replicates must be within a certain range for them to be deemed precise.

What are the acceptable precision ranges for each data parameter?

Refer to the table below for the range in which data for each parameter is acceptable as precise.

What happens if my two replicates are not within the proper range?

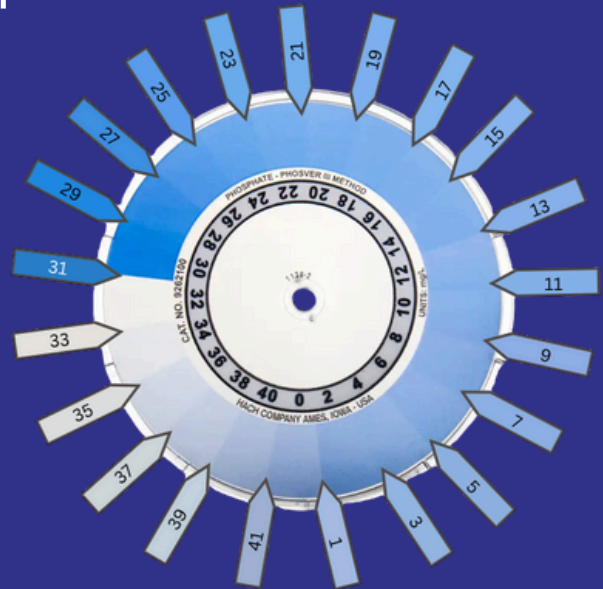
If your first two replicates are not within the precision range for that parameter, please complete another replicate. Continue replicates until two consecutive replicates are within the acceptable precision range of each other.

| Parameter | Unit | Precision |
|---------------------------------------|------|---|
| Orthophosphate HACH PO-19 Kit | mg/L | Low range: ± 0.04 mg/L Mid range: ± 0.2 mg/L |
| Nitrate-Nitrogen HACH NI-14 Kit | mg/L | Low range: ± 0.1 mg/L Mid range: ± 1.0 mg/L |
| Turbidity LaMotte (7519-01) Kit | JTU | ± 5 JTU |

Averaging Replicates

When averaging, all values you record must match the precision ability of the equipment. Round up to the nearest feasible value or whole number.

Orthophosphate



When recording values for orthophosphate, you can select the numbers shown on the *HACH* wheel or the values **directly in between**. Using the low range, ensure you **divide by 50** before recording your values in mg/L.

Examples of acceptable replicate values

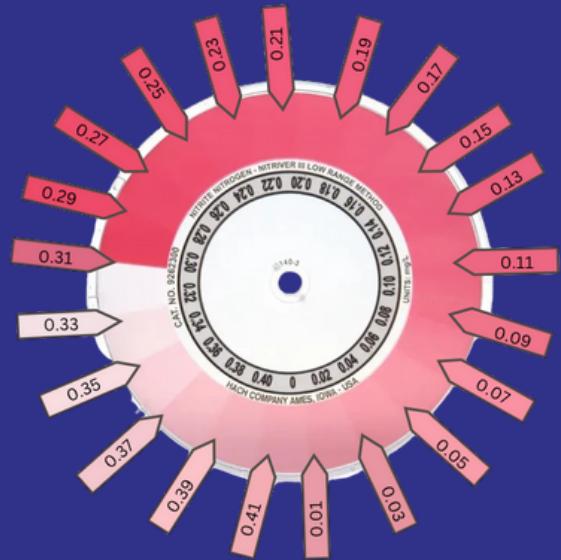
| Parameter | Replicate #1 | Replicate #2 | Average |
|----------------|--------------|--------------|-----------|
| Orthophosphate | 0.02 mg/L | 0.04 mg/L | 0.03 mg/L |

- You cannot read values on the color wheel that are not listed in this graphics.
- If you and a partner are determining the color of orthophosphate together, decide on a value each replicate and **only record the agreed upon value on the datasheet**. These will then be uploaded to your organizations database.
- If your sample is >0.8mg/L after dividing by 50, you can record this value on your data sheet.

Averaging Replicates

When averaging, all values you record must match the precision ability of the equipment. Round up to the nearest feasible value or whole number.

Nitrate-Nitrogen



When recording values for nitrate-nitrogen, you can select the numbers shown on the *HACH* wheel or the values directly in between.

Examples of acceptable replicate values

| Parameter | Replicate #1 | Replicate #2 | Average |
|------------------|--------------|--------------|------------|
| Nitrate-Nitrogen | 0.25 mg/L | 0.28 mg/L | 0.265 mg/L |

- You should not be recording any number not listed in these graphics.
- If the average of your two replicates is not one of these numbers, round up to the next acceptable value listed in this diagram.
- If you and a partner are determining the color of nitrate together, decide on a value each replicate and only record the agreed upon value on the datasheet. These will then be uploaded to your organizations database

Averaging Replicates

When averaging, all values you record must match the precision ability of the equipment. Round up to the nearest feasible value or whole number.

Turbidity



| Number of Additions | Volume of Additions | 50 mL Result | 25 mL Result |
|---------------------|---------------------|--------------|--------------|
| 1 | 0.5 | 5 JTU | 10 JTU |
| 2 | 1.0 | 10 JTU | 20 JTU |
| 3 | 1.5 | 15 JTU | 30 JTU |
| 4 | 2.0 | 20 JTU | 40 JTU |
| 5 | 2.5 | 25 JTU | 50 JTU |
| 6 | 3.0 | 30 JTU | 60 JTU |
| 7 | 3.5 | 35 JTU | 70 JTU |
| 8 | 4.0 | 40 JTU | 80 JTU |
| 9 | 4.5 | 45 JTU | 90 JTU |
| 10 | 5.0 | 50 JTU | 100 JTU |
| 15 | 7.5 | 75 JTU | 150 JTU |
| 20 | 10.0 | 100 JTU | 200 JTU |

When recording values for turbidity, you can select the numbers shown on the table, or the numbers in between the values listed in the table above, based on the number of LaMotte Turbidity reagent drops added.

Examples of acceptable replicate values

| Parameter | Replicate #1 | Replicate #2 | Average |
|-----------|--------------|--------------|---------|
| Turbidity | 32.5 JTU | 35 JTU | 35 JTU |

- You should not be recording any number not mentioned in these graphics.
- If the average of your two replicates is not one of these numbers, average to the nearest multiple of 2.5 JTU.
- If you and a partner are determining the turbidity together, decide on a value each replicate and only record the agreed upon value on the datasheet. These will then be uploaded to your organizations database.