



4. Add a few boiling stones. Place the flask on a hot plate, small backpacking stove or Sterno and boil gently for 30 minutes. Add de-ionized water to the sample during the boiling to maintain a volume between 10 and 50 ml. Permit the volume to decrease to approximately 10 ml (about 1/4 inch of water) at the end of the boiling step, but do not allow the sample to go to dryness or to dense white sulfur trioxide fumes. Remove from the hot plate and cool.

If inside, please boil sample in a well-ventilated place; if outside, please stay upwind of the boiling sample.

5. Add one drop of Phenolphthalein Indicator, 1% to the cooled sample.

6. While swirling the flask, use a 1 ml- pipette to add Sodium Hydroxide dropwise until the solution turns faint pink. A volume of slightly less than 3 ml is required.

7. While swirling the flask, add Sulfuric Acid, 36%, one drop at a time, until the pink color disappears.

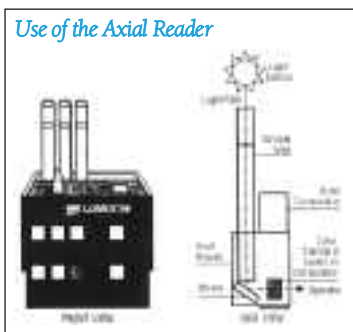
8. Quantitatively transfer the sample, which should be at room temperature, to the 50 ml graduated cylinder. After transferring the solution from the flask to the graduated cylinder, wash the flask with a little deionized water and add it to the solution in the graduated cylinder. Dilute the solution in the graduated cylinder to exactly 50 ml using deionized water and mix well.

9. Fill a test tube to the 10 ml line with the test sample from step 8.

10. Use the 1.0 ml pipette to add 1.0 ml of Phosphate Acid Reagent. Cap and mix.

11. Use the 0.1 g spoon to add one level measure of Phosphate Reducing Reagent. Cap and mix until the powder has dissolved. Wait 5 minutes.

12. Remove the stopper from the test tube. Place the tube in the Phosphate Comparator with Axial Reader. Match the sample color to a color standard. Record the result as mg/L (ppm) Total Phosphate.



Note: Total phosphate concentrations of non-polluted waters are usually less than 0.1 mg/L.

C. TOTAL PHOSPHATE Calculating the Results

To compute the Q-value for the Phosphate (PO₄-P) test, follow these steps:

1. Find the weighting curve chart (below);
2. Locate your test result on the bottom (horizontal or “x” axis) of the chart;
3. Interpolate the Q-value for your test result using the following steps;
4. From your test result value on the horizontal (“x”) axis of the chart, draw a vertical line up until it intersects the weighting curve line;
5. From this point of intersection, draw a horizontal line to the left hand side (the vertical or “y” axis) of the chart;
6. Where this horizontal line intersects the vertical (“y”) axis of the chart, read off the value. This is the Q-value for this test; it should be recorded in Column B on the WQI chart on the Calculating Water Quality Index (Module 10).

The Q-value for each test should then be multiplied by the weighting factor listed in the chart on the Water Quality Index page. Record the product of this calculation in Column D of the chart.

