



TEXAS STREAM TEAM

ADVANCED FIELD GUIDE – NITRATE-NITROGEN & PHOSPHATE

Equipment Needed

- Advanced LaMotte Kit (XX01406-02CS)
- IF NEEDED: Filtration Hach supplies (filters, mixing bottles (2), funnel, filtration aid solution, and pipette)
- Gloves
- Deionized (DI) water
- Waste bin
- Sample bucket
- Timer

Water Sample

Sample Collection

Before collecting water sample, rinse bucket 2X with sample water and discard water downstream.

Preservation & Hold Times

Test water sample as soon as possible following sample collection. If transporting a sample is necessary due to weather or other extreme conditions, samples should be placed on ice during transport and analyzed as soon as possible.

Filtration

Filtration must be performed for both nitrate-nitrogen and phosphate if you recorded either “cloudy” or “turbid” on the *Field Observations* section of the Monitoring Form under *Water Clarity*. If the sample is clear, proceed to the Testing Procedures section without filtering.

1. Rinse 1 mixing bottle 2X with sample water; rinse the other mixing bottle 2X with DI water.
2. Fill the bottle rinsed with sample water to the shoulder with sample water.
3. Add 0.5 mL of Filtration Aid Solution. Swirl to mix.
4. Place the funnel inside the empty bottle rinsed with DI water and insert a filter into the funnel. Pour the water sample from the first bottle into the funnel. Use the filtered water sample or filtrate in the testing procedures below.
5. Rinse funnel and mixing bottles 2X with DI water before storing.

Nitrate-Nitrogen

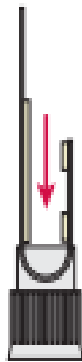
Testing Procedures

1. Rinse test tube and pipette 2X with sample water or filtrate if water sample was filtered.
2. Using a pipette, fill test tube with 5 mL of sample water or filtrate as appropriate.
3. Add 1 Nitrate #1 Tablet to test tube without touching the tablet with your hands/fingers. See instructions and diagram on tablet box, if needed.
4. Cap test tube and invert until tablet dissolves.
5. Add 1 Nitrate #2 Tablet to test tube the same way as step 3 above. Immediately slide the tube into the Protective Sleeve if testing outdoors.
6. Cap and invert for 2 minutes until tablet dissolves.
7. Wait 5 minutes. While you wait, insert the Nitrate-Nitrogen Octa-Slide 2 Bar into the Octa-Slide 2 Viewer.
8. After 5 minutes remove the test tube from the protective sleeve. Insert tube into the Octa-Slide 2 Viewer.
9. Match the resulting sample color to a color standard on the Octa-Slide 2 Bar and record as ppm or mg/L on Monitoring Form.
10. If test result is < 2.00 ppm or mg/L, record on Monitoring Form and proceed to step 12.
11. If test result is \geq 2.00 ppm or mg/L, run test again to confirm.
 - a. If the same/similar result occurs, average the values and record on Monitoring Form.
 - b. If the same/similar result does not occur, rerun the test until the same/similar result occurs and record the average on Monitoring Form.
12. Dispose sample water in waste bin and rinse test tube and cap 2X with DI water before storing.

PHOSPHATE

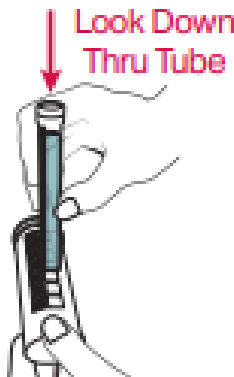
Testing Procedures

1. Rinse test tube and cap 2X with sample water or filtrate if water sample was filtered.
2. Fill test tube with 10 mL of sample water or filtrate as appropriate.
3. Remove one test strip from the vial and immediately cap vial to prevent UV light contamination.
4. Gently bend the strip – DO NOT FOLD – beneath the long rectangular test pad with pads facing inwards. The test strip should now be in the shape of the letter “J”.



5. Place the bend of the strip inside the test tube cap. Cap test tube with strip inside.
6. Slowly invert the test tube 5X, making sure air bubble moves from one end of the tube to the other each time the tube is inverted.
7. Remove the cap and test strip.
8. Place the bottom of the test tube on the white boxed area of the color chart located on the vial with the test strips.
9. Look down through the OPEN test tube and compare to the color chart

Note: For accurate results, read in natural light.



10. If test result is < 700 ppb (< 0.7 ppm or mg/L), record the result on Monitoring Form as ppm or mg/L (see unit conversion table below) and proceed to step 12.
 - a. If the value falls between two colors on the chart, record the value halfway between the two.
11. If test result is ≥ 700 ppb (≥ 0.7 ppm or mg/L), run test again to confirm.
 - a. If the same/similar result occurs, average the values and record on Monitoring Form as ppm or mg/L.
 - b. If the same/similar result does not occur, rerun the test until the same/similar result occurs and record the average on Monitoring Form as ppm or mg/L.
12. Dispose sample water in waste bin and rinse test tube and cap 2X with DI water before storing.

Unit conversion: ppm or mg/L = ppb ÷ 1,000							
Parts per billion (ppb)	0	100	200	300	500	1000	2500
Parts per million (ppm or mg/L)	0	0.1	0.2	0.3	0.5	1.0	2.5