



TEXAS STREAM TEAM

ADVANCED FIELD GUIDE – NITRATE-NITROGEN & TURBIDITY

TURBIDITY

Equipment Needed:

- Turbidity Tube (60 cm or 120 cm)
- Bucket (optional)

Testing Procedures:

PROCEED ONLY IF WATERBODY IS SAFE TO STAND AND MOVE IN.

1. Rinse bucket and tube twice with sample water before each use.
2. Standing in the centroid of the waterbody and downstream of the tube, dip the tube into the water facing upstream to fill it, being careful to not disturb the streambed or kick up any sediment.
 - a. If you cannot access the centroid, or the waterbody is unsafe to stand in, you can use a bucket to collect sample water and pour into the tube. Be careful to not scrape the streambed or disturb or kick up sediment. Carefully pour the water collected in the bucket into the tube immediately after collection to prevent settling of suspended materials.
3. Holding the tube vertically, look down the tube to see if the disk at the bottom of the tube is visible. If you can see the disk, record the water level in centimeters on the monitoring form.
 - a. If the tube is filled to the top and the disk is completely visible, record the measurement as > the maximum tube length (i.e., >120cm or >60cm).
4. If you are unable to see the disk, release water from the tube until the disk becomes visible. Record the water level in centimeters at which the disk becomes barely visible on your monitoring form.
5. Use the table below to convert your reading from centimeters to nephelometric turbidity

units (NTUs). Record the value on your monitoring form.

Distance from bottom of tube (cm)	NTU	Distance from bottom of tube (cm)	NTU
<6.25	>240	28.75 to 31.25	24
6.25 to 7	240	31.25 to 33.75	21
7 to 8	185	33.75 to 36.25	19
8 to 9.5	150	36.25 to 38.75	17
9.5 to 10.5	120	38.75 to 41.25	15
10.5 to 12	100	41.25 to 43.75	14
12 to 13.75	90	43.75 to 46.25	13
13.75 to 16.25	65	46.25 to 48.75	12
16.25 to 18.75	50	48.75 to 51.25	11
18.75 to 21.25	40	51.25 to 53.75	10
21.25 to 23.75	35	53.75 to 57.5	9
23.75 to 26.25	30	57.5 to 60	8
26.25 to 28.75	27	Over 60	<8

Source: Wyoming Stream Team, Conversion chart converting centimeters (cm) to turbidity units (NTU's).

NITRATE-NITROGEN

Equipment:

- 2 mixing bottles with caps
- Deionized (DI) water
- 1 2.5-10 mL test tube with cap
- 1 Nitrate #1 tablet
- 1 Nitrate #2 CTA tablet*

- Pipette
- Protective Sleeve
- Nitrate-Nitrogen Octa-Slide 2 Bar, 0-15 ppm
- Octa-Slide 2 Viewer
- Waste container/bucket
- Gloves or hand sanitizer

***Nitrate #2 Tablets are sensitive to UV light. Use the protective sleeve to protect the tablets and sample water if testing outdoors only.**

Sample Preservation & Holding Times

Testing should occur immediately following sample collection. However, if transportation is necessary, samples should be transported on ice. Samples can be stored for up to 48 hours at 4°C.

Testing Procedures

1. Put on gloves or hand sanitizer.
2. Rinse test tube and pipette twice with sample water; deposit rinse water into waste container.
3. Using a pipette, fill test tube to the 5 mL line with sample water.
4. Add 1 Nitrate #1 Tablet directly into the test tube with 5 mL of sample water without touching it with your hands/fingers. See instructions and diagram on box with tablets.
5. Cap the test tube and invert until the tablet disintegrates.
6. Add 1 Nitrate #2 Tablet to the test tube the same way you did in step 5 above. Immediately slide the test tube into the Protective Sleeve if testing outdoors.
7. Cap and invert for 2 minutes until tablet disintegrates.
8. Wait 5 minutes. Insert the Nitrate-Nitrogen Octa-Slide 2 Bar into Octa-Slide 2 Viewer while you wait.
9. After 5 minutes remove the test tube from the protective sleeve. Insert the test tube into the Octa-Slide 2 Viewer.
10. Match the resulting sample color to a color standard and record as ppm (mg/L) on your monitoring form.
11. Dispose of all waste into the waste container and rinse the test tube and cap twice with DI water before storing in kit.