

New Hampshire Volunteer River Assessment Program

Quick-Reference Guide to Water Quality Monitoring

1. Record General Information on Field Data Sheet

- Record your VRAP Group name, date, names (first and last) of volunteers, and the start time (arrival at first station). *For more information on completing the field data sheet, refer to page 6 of the Protocols.*

2. If Using the YSI 85 Multimeter – Perform Initial Conductivity Meter Check

(Refer to Page 14 of Protocols)

- Turn on meter, perform the “Initial Conductivity Meter Check” (refer to protocols), and record the value on the front top-left of the field data sheet. Ensure there is enough standard to cover the holes of the conductivity probe.
- Record the time the meter was turned on - on the front top-right of the field data sheet next to “Time Dissolved Oxygen Meter Turned On”.
- Wait 15 Minutes with probe in chamber prior to calibrating for dissolved oxygen.

3. If Using the YSI 95 Meter - Turn on Meter, Record Time, and Wait to Calibrate

(Refer to Page 14 of Protocols)

- Turn on the meter and record the time the meter was turned on - on the front top-right of the field data sheet next to “Time Dissolved Oxygen Meter Turned On”.
- Wait 15 Minutes with probe in chamber prior to calibrating for dissolved oxygen.

4. Collect a Water Sample

(Refer to Pages 7 and 8 of Protocols)

- With a bucket, collect a water sample

4. Pour Samples for Laboratory Analysis

(Refer to Page 8 of Protocols)

- Pour off water for laboratory analyses prior to sampling field parameters.

5. If Using YSI 30 - Perform Initial Conductivity Meter Check

(Refer to Page 17 of Protocols)

- Perform the “Initial Conductivity Meter Check” (refer to protocols) and record the value on the front top-left of the field data sheet. Ensure there is enough standard to cover the holes of the conductivity probe.

6. Perform Initial Turbidity Meter Check (LaMotte 2020e or LaMotte 2020)

(Refer to Page 10 of Protocols)

- Perform the “Initial Turbidity Meter Check” (refer to protocols) and record the value on the front top-left of the field data sheet.
- If necessary, calibrate the turbidity meter (refer to protocols).

7. Record Sampling Station Identification & Time Sampled

- Record the NHDES Station ID on the first row (*second row for second station monitored and so on*) of the field data sheet.
- Record the time sampled (time sample was collected) on the first row of the field data sheet.

8. Pour Sample Into Smaller Plastic Container (for turbidity and pH)

- Rinse the small plastic container 3 times with sample water from the larger sample bucket, and pour sample from larger sample bucket into small plastic sample container.

9. Measure Turbidity

(For LaMotte 2020e Refer to Page 10 of Protocols, For LaMotte 2020 Refer to Page 11 of Protocols)

- Rinse the turbidity sample (S) vial 1 time with DI water, and 2 times with sample water from the small plastic sample container.
- Pour sample from small plastic sample container into the turbidity sample (S) vial for measurement.
- Ensure turbidity sample (S) vial is free from dust, fingerprints, water, scratches. Clean with a Kimwipe.
- Measure **turbidity** (refer to protocols) and record value on field data sheet.

10. Calibrate the pH Meter & Measure pH

(Refer to Page 12 of Protocols)

- Calibrate the pH meter (refer to protocols) and record the slope (92-102%) on the field data sheet.
- Measure the pH sample from the small plastic sample container (refer to protocols). Wait 1-2 minutes for the reading to stabilize before recording the value on the field data sheet.

11. Calibrate the Dissolved Oxygen Meter & Measure Water Temperature & Dissolved Oxygen

(For YSI 85 Refer to Pages 15-16 of Protocols, YSI 95 Refer to Page 15 of Protocols)

- Record time meter was calibrated - on the front top-right of the field data sheet next to “Time of First Dissolved Oxygen Calibration.”
- Calibrate the dissolved oxygen meter (to nearest 100 feet/refer to protocols) and record known dissolved oxygen calibration value (this is not a percentage) on field data sheet.
- Wait 30 seconds to one minute and then record the actual dissolved oxygen % saturation chamber reading on the field data sheet. This should be within 2% of the calibration value.
- In the larger sample bucket, measure **water temperature** (refer to protocols) and record the value on the field data sheet.
- Once **dissolved oxygen (% saturation)** stabilizes record the value on field data sheet.
- Quickly press Mode to switch to **dissolved oxygen concentration (mg/L)** and instantly record value on field data sheet.

12. Measure Specific Conductance

(For YSI 85 Refer to Page 16 of Protocols, YSI 30 Refer to Page 17 of Protocols)

- In the larger sample bucket, measure **specific conductance** (Flashing C mode/refer to protocols) and record value on field data sheet. Ensure there is enough sample to cover the holes of the probe.

13. Once Daily: Measure & Record a Replicate Sample

(Refer to Page 5 of Protocols)

- At one of the stations during the sampling day, measure and record a second measurement (Replicate) by each meter from the original sample. Replicates should be measured within 15 minutes of the original measurements. If more than one team is out sampling each team should complete a replicate analysis. Record measurements on the front bottom of field data sheet under “Replicate” row.

14. Once Daily: Perform QA/QC Meter Checks

(Refer to Page 5 of Protocols)

- **6.0 pH Standard:** At one of the stations during the sampling day, measure the 6.0 pH buffer. Do not calibrate the meter prior to this measurement as it is intended to detect drift in the meter. Record measurement, station, and time on the front bottom of the field data sheet under “QA/QC Meter Check.”
- **Zero Oxygen Solution:** At one of the stations during the sampling day, measure the zero oxygen solution. The dissolved oxygen concentration value should be below 1.0 mg/L. Record measurement, station, and time on the front bottom of the field data sheet under “QA/QC Meter Check.”
- **DI (De-Ionized) Turbidity Blank:** At one of the stations during the sampling day, measure the DI turbidity blank (0 NTU). Record measurement, station, and time on the front bottom of the field data sheet under “QA/QC Meter Check.”

15. Perform End of Day Meter Checks

(Refer to Page 5 of Protocols)

- With the conductivity meter, check known standard and record value on front bottom of the field data sheet under “End of Day Meter Check.”
- With the turbidity meter, check the 1.0 NTU standard and record value on front bottom of the field data sheet under “End of Day Meter Check.”

16. Indicate Laboratory Sample Collection

- Note whether or not laboratory samples were collected during your sampling event. If yes, indicate which lab the samples were relinquished to.

17. List the Scribe (First & Last Name)

18. Record Weather Conditions & Comments

- Record weather conditions and comments sections on back of field data sheet.

19. Ensure Field Data Sheet is Properly Completed & Submit to VRAP

(Refer to Page 6 of Protocols)