

**BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT**

**QUANTITATIVE PLANKTON SAMPLING METHOD FOR LAKES**

**(MODIFIED STANDARD METHOD 1002A)**

**OCTOBER 2015**

**QUANTITATIVE PLANKTON SAMPLING METHOD FOR LAKES (MODIFIED STANDARD METHOD 1002A)**

1. Anchor boat over sampling location and record the following information on the Lake/Reservoir Field Data Sheet (3800-FM-BPNPSM0050) (Appendix A).

Station Number Dissolved Oxygen profile (Hydrolab or equivalent)

Date Temperature profile (Hydrolab or equivalent)

Time Meteorological conditions

Water depth Air temperature

Water transparency (Secchi Disk) Wind speed/direction

Latitude and Longitude Percent cloud cover

1. Execute two vertical plankton tows with a simple conical or Wisconsin style net (5" or 8” diameter opening) rigged with No. 20 (80 micron) nylon mesh and collection cup. Each tow should be initiated at the depth where dissolved oxygen is ≥ 2.0 mg/L (oxic). Traverse the water column at a rate of approximately 0.5 meters/second (hand retrieval speed).
2. Rinse net after each tow to collect organisms into the sample container (125, 120, or 500 ml bottle). Both tows are composited into one sample preserved with Lugol’s solution applied at the rate of one milliliter per 100 milliliters of sample (1%). Record net mouth diameter and depth of tows on field sheet.
3. Alternatively, if surface bloom counts are needed, collect a 500 ml grab-sample at a depth of 0.5m by hand. Preserve as above with Lugols solution. Record longitude and latitude if different than lake station locations.
4. Properly label sample and forward to the DEP Bureau of Laboratories (BOL) in Harrisburg via courier service. The sample should be accompanied by a completed DEP BOL Sample Submission Sheet with Chain of Custody information, available on the BOL website.
5. Calculate the volume of lake water filtered during the two tows by multiplying (sample depth) x (2) x (area of plankton net opening). Use this information along with BOL plankton identification counts to calculate plankton density per liter of lake water (n/L) for standardization.
6. Field observations, including the temperature and Dissolved Oxygen profile and latitude/longitude must be entered into Sample Information System (SIS) within 14 days of sample collection.

Appendix A

Lake/Reservoir Field Data Sheet

**DEP Logo3800-FM-BPNPSM0050 Rev. 7/2013 COMMONWEALTH OF PENNSYLVANIA**

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT**

**LAKE/RESERVOIR FIELD DATA SHEET**

Lake Name County

Station Lat. Long

Date Time Collectors

Weather

Cloud Cover (%) 0 25 50 75 100 Comments (Hazy/Foggy)

Wind Conditions: None Light Moderate Heavy Direction

Rain Conditions: None Drizzle Light Moderate Heavy

Surface Turbulence Air Temperature (ºC)

Station Depth (meters)

SECCHI DISK READING (TENTHS OF A METER)

**FIELD MEASUREMENTS**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **DEPTH (meter)** | **TEMP (ºC)** | **D.O. (ppm)** | **pH** | **Sp. Cond. (Umhos)** | **DEPTH (meter)** | **TEMP (ºC)** | **D.O. (ppm)** | **pH** | **Sp. Cond. (Umhos)** |
| surface |  |  |  |  | 11M |  |  |  |  |
| 1M |  |  |  |  | 12M |  |  |  |  |
| 2M |  |  |  |  | 13M |  |  |  |  |
| 3M |  |  |  |  | 14M |  |  |  |  |
| 4M |  |  |  |  | 15M |  |  |  |  |
| 5M |  |  |  |  | 16M |  |  |  |  |
| 6M |  |  |  |  | 17M |  |  |  |  |
| 7M |  |  |  |  | 18M |  |  |  |  |
| 8M |  |  |  |  | 19M |  |  |  |  |
| 9M |  |  |  |  | 20M |  |  |  |  |
| 10M |  |  |  |  |  |  |  |  |  |

**SAMPLES COLLECTED**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TYPE/DEPTH** | **SAC** | **VOLUME**  **FILTERED** | **TIME**  **COLL.** | **COLLECTION NUMBER** |
| WATER QUALITY (Top) |  |  |  |  |
| WATER QUALITY (Bottom) Depth of Sample: |  |  |  |  |
| CHLOROPHYLL A |  |  |  |  |
| OTHER (blank/dup.) |  |  |  |  |
| PLANKTON TOW (2x \_\_\_\_\_m net diameter =\_\_\_\_\_”) |  |  |  |  |

|  |
| --- |
| **COMMENTS:** |