



Cyanobacteria/Cyanotoxin Testing Services List

Developed by the NEIWPCCC HAB Workgroup (Northeast state health and environmental agency staff).

The New England Interstate Water Pollution Control Commission is a non-profit organization established through an act of Congress in 1947. NEIWPCCC strives to: coordinate activities and forums that encourage cooperation among the states; educate the public about key environmental issues; support research projects, train environmental professionals, and provide overall leadership in the management and protection of water quality.

Cyanobacteria and Cyanotoxin Analysis and Testing Services

[As of 3/15/2016]

Disclaimer: Individuals and/or companies listed below have been identified as performing services related to cyanobacteria and cyanotoxin analysis. This should not be considered an endorsement by NEIWPCCC or any state agency of their qualifications. Public Water Systems considering contracting with any individual or company should verify that they have the adequate training and are competent to perform the work for which they are being considered. Prices should be viewed as guidelines of what to expect for each lab, rather than final quotes – many offer discounts, e.g., for bulk samples.

Academy of Natural Sciences – Phycology Section

Patrick Center for Environmental Research

1900 Benjamin Franklin Parkway

Philadelphia, PA 19103

Tel: (215) 299-1080

Fax: (215) 299-1079

Email General: patrickcenter@ansp.org

Email Don Charles: dfc63@drexel.edu

Email Frank Acker (primary soft-algae taxonomist): fwa23@drexel.edu

Services: Identification of algae and algal measurements/biovolume, cell counts, chlorophyll

Pricing: (Can give estimate based on sample, and separate the phytoplankton and periphyton in terms of how they are processed)

- Semiquantitative count (relative abundance, five-point scale, rare to abundant) – \$150-200
- Algal identification (cell count, biovolume) – \$440-550
- Chlorophyll (fluorometer) – Call for cost
- Diatom count – \$300

Aquatic Services, Wayne Carmichael, Ph.D.

42184 Tweedle Lane

Seaside, Oregon 97138

Tel: (503) 755-0711

Email: wayne.carmichael@wright.edu

Services: Retired, limits active lab work to Algal Identification/Enumeration.

Pricing:

- Algal Identification (genus/species when possible) – \$100
- Enumeration/biovolume – \$150

Disclaimer: Individuals and/or companies listed below have been identified as performing services related to cyanobacteria and cyanotoxin analysis. This should not be considered an endorsement by NEIWPC or any state agency of their qualifications. Public Water Systems considering contracting with any individual or company should verify that they have the adequate training and are competent to perform the work for which they are being considered. Prices should be viewed as guidelines of what to expect for each lab, rather than final quotes – many offer discounts, e.g., for bulk samples.

Beagle Bioproducts, Inc., (<http://beaglebioproducts.com/>)

959 Schrock Rd

Columbus, OH 43229

Tel: 614-519-0154

Email Stephanie: stephanie.smith@beaglebioproducts.com

Services: Toxin testing (ELISA for service- based testing, can also do LC/MS for contracts), algal ID (generally not enumeration, but can do that for contracts).

Pricing:

- Microcystin, cylindrospermopsin, anatoxin, or saxitoxin ELISA – \$125
- Algae identification (non-quantitative scan for presence/absence) – \$75

Note: may also offer a heavily discounted regular testing program for drinking water facilities in 2016.

CyanoPros, (www.cyanopros.com)

Alan Wilson - Assistant Professor

Auburn University - Fisheries and Allied Aquacultures

203 Swingle Hall

Auburn, Alabama 36849

Tel: 703-292-5190

Email General: cyanopros@auburn.edu, alan.e.wilson@gmail.com

Services: Phytoplankton enumeration (abundance or biovolume), identifications, toxin testing (ELISA only, for microcystin, cylindrospermopsin, saxitoxin), and other water quality analyses.

Pricing:

- Microcystin ELISA in algae – \$50
- Microcystin ELISA in water – \$50
- Microcystin ELISA in fish – \$125
- Cylindrospermopsin ELISA – \$100
- Saxitoxin ELISA – \$50
- Phytoplankton identification – \$50
- Phytoplankton culturing – \$100
- Phytoplankton enumeration – contact them
- Chlorophyll a – \$25

EcoAnalysts, Inc., (www.ecoanalysts.com)

Main Office

1420 South Blaine St., Suite 14, Moscow, ID 83843

Tel: (208) 882-2588

Fax: (208) 883-4288

Email General: eco@ecoanalysts.com

Disclaimer: Individuals and/or companies listed below have been identified as performing services related to cyanobacteria and cyanotoxin analysis. This should not be considered an endorsement by NEIWPC or any state agency of their qualifications. Public Water Systems considering contracting with any individual or company should verify that they have the adequate training and are competent to perform the work for which they are being considered. Prices should be viewed as guidelines of what to expect for each lab, rather than final quotes – many offer discounts, e.g., for bulk samples.

Email Gary: glester@ecoanalysts.com

Services: phytoplankton counts, biovolume, and identification (including cyanobacteria), toxin analysis

Pricing:

- ELISA (Microcystin, Saxitoxin, Anatoxin A, Cylindrospermopsin) – \$115-200, per analysis, depending on the number of samples in the batch
- Taxonomic analysis of cyanobacteria (taxa present, cell counts, cell densities, but no photographs or measurements/biovolume) – \$90 per sample
- Taxonomic analysis of cyanobacteria (taxa present, cell counts, cell densities, and also biovolume measurements) – \$135 per sample
 - Digital Images: \$25 per taxon
- Full community taxonomic analysis (no biovolume) – \$165-195
- Full community taxonomic analysis (with biovolume) – \$250-290

Note: Three full-time algae taxonomists on staff, can turn samples fairly quickly depending on the number received per batch.

GreenWater Laboratories/CyanoLab, (www.greenwaterlab.com), Andrew Chapman or Mark Aubel

205 Zeagler Drive, Suite 302

Palatka, FL 32177

Tel: (386) 328-0882 or (877) 869-2542

Fax: (386) 328-9646

Email General: info@greenwaterlab.com

Email Mark Aubel: achapman@greenwaterlab.com

Email Andrew Chapman: andrewchapman@greenwaterlab.com

Services: Algal Identification/Enumeration, Toxin Testing.

Pricing:

- Phycological Services
 - Potentially Toxic Cyanobacteria Screen – \$75
 - Qualitative Algal Identification – \$100
 - Cyanobacteria ID & Enumeration – \$150
 - Total Algal ID & Enumeration – \$200
 - Algal ID, Enumeration & Biovolume – \$325
- Microcystins/Nodularin:
 - ELISA – \$100-125
 - LC-MS & UV Scan – \$250-275
 - LC-MS/MS Suite (12 Variants & Nodularin) – \$250-275
 - LC-MS/MS MMPB (oxidation, extraction & analysis for water) – \$200-250
- Cylindrospermopsin
 - ELISA – \$125-150

Disclaimer: Individuals and/or companies listed below have been identified as performing services related to cyanobacteria and cyanotoxin analysis. This should not be considered an endorsement by NEIWPC or any state agency of their qualifications. Public Water Systems considering contracting with any individual or company should verify that they have the adequate training and are competent to perform the work for which they are being considered. Prices should be viewed as guidelines of what to expect for each lab, rather than final quotes – many offer discounts, e.g., for bulk samples.

- LC-MS/MS – \$150-200
- Anatoxin-a
 - LC-MS/MS – \$200-250
- Saxitoxins
 - ELISA – \$125-150
 - LC-MS/MS Suite (C1/C2, GTX (1,2,3,4,5), dcGTX2/3, dcSTX, NEO, STX) – \$250-300
- BMAA (includes isomers AEG & DAB) LC-MS/MS – \$250-300
- 4 toxin bundle: Microcystins (ELISA), Cylindrospermopsin (LC-MS/MS), Saxitoxin (ELISA), Anatoxin-a (LC-MS/MS) – \$500

New Hampshire Department of Environmental Services Laboratory (www.des.nh.gov)

29 Hazen Dr.

P.O. Box 95

Concord, NH 03302

Tel: (603) 271-3445

Fax: (603) 271-2997

Services: Cyanobacteria identification, cell concentration

Pricing: No charge for the 78 samples analyzed in 2015. *These services/pricing are for New Hampshire residents only. External samples would be considered on a case by case basis.*

Northeast Laboratories, Inc. (www.nelabsct.com)

129 Mill Street

Berlin, CT 06037

Tel: (860) 828-9787 (Ext. 103 for Alan Johnson) or Toll free in state: (800) 826-0105 and out of state: (800) 654-1230

Fax: (860)829-1050

Email General: nelabsct@aol.com

Email Alan Johnson: alan@nelabsct.com

Services: Algae/Cyanobacteria Cell Counts & Identification (to genus, not to species), cyanotoxins (Microcystins, Nodularin, Cylindrospermopsin – ELISA, and Abraxis screening dip sticks, potentially also looking at LC-MS for Microcystins)

Pricing: Depends significantly on turnaround time (if things need to be rushed).

- Cell Counts (including identification) – \$45-80
- Semi-quantitative screening (Abraxis) – \$50
- ELISA – \$75-80
- Chlorophyll a – \$60

Disclaimer: Individuals and/or companies listed below have been identified as performing services related to cyanobacteria and cyanotoxin analysis. This should not be considered an endorsement by NEIWPC or any state agency of their qualifications. Public Water Systems considering contracting with any individual or company should verify that they have the adequate training and are competent to perform the work for which they are being considered. Prices should be viewed as guidelines of what to expect for each lab, rather than final quotes – many offer discounts, e.g., for bulk samples.

PhycoTech, Inc., (<http://www.phycotech.com>)

620 Broad Street, Suite 100

St. Joseph, MI 49085

Tel: (269) 983-3654

Fax: (866)728-5579/(269)983-3653

Email General: info@phycotech.com

Services: Phytoplankton counts (to species, Natural Units/mL and Cells/mL) including toxin and taste/odor cyanobacteria, with full archival slides if requested. Will have a fast response semi-automated solution available starting June 1, 2016.

Pricing:

- Phytoplankton Analyses
 - Species count w/ biovolume calculations – \$359
 - Species count w/o biovolume calculations – \$260
 - Genus count w/ biovolume calculations – \$239
 - Genus count w/o biovolume calculations – \$170
 - Division count – \$163
 - Relative count to species – \$260
 - Relative count to genus – \$170
- Phytoplankton Analysis Targeted for Algal Blooms
 - Rapid Assay: Qualitative Species (when possible) Assay weighted for Biovolume, with 3 HPMA slides – \$183
 - Rapid Assay: Qualitative Species (when possible) Assay weighted for Biovolume, without HPMA slides – \$122
 - Toxic/Bloom Scan, One Species – \$130
- Chlorophyll-A – \$99

Rhode Island Department of Health (http://www.health.ri.gov/programs/detail.php?pgm_id=132)

Division of State Laboratories and Medical Examiner

50 Orms Street

Providence, RI 02904

401-222-5600

Email: evan.philo@health.ri.gov, henry.leibovitz@health.ri.gov

Services: Algal Identification/Enumeration, toxin testing.

Pricing:

- Algal ID & Enumeration – \$50/sample.
- Microcystin/Nodularin Screen by ELISA – \$50/freshwater sample; \$100/brackish water sample.
- Mycrocystins (10), Nodularin, cylindrospermopsin (1) and anatoxin (1) by LC-MS/MS – \$200/sample.

Disclaimer: Individuals and/or companies listed below have been identified as performing services related to cyanobacteria and cyanotoxin analysis. This should not be considered an endorsement by NEIWPCC or any state agency of their qualifications. Public Water Systems considering contracting with any individual or company should verify that they have the adequate training and are competent to perform the work for which they are being considered. Prices should be viewed as guidelines of what to expect for each lab, rather than final quotes – many offer discounts, e.g., for bulk samples.

SUNY-ESF, Dr. Greg Boyer, Professor of Biochemistry

Syracuse, NY 13210

Tel: (315) 470-6825

Email Greg Boyer: glboyer@esf.edu

Services: Capable of analyzing for many cyanobacteria toxins: Microcystins and nodularins -80 congeners; Paralytic shellfish toxins 56 congeners; anatoxin-a (6 congeners), anatoxin a(S) 1 variant and cylindrospermopsin (3 congeners). Can also analyze chlorophyll, phycocyanin, and can identify species/genus for samples. Results from analyses are generally available within three to four weeks by telephone or email.

Pricing: Rush orders (within 10 days) include a surcharge of \$50-200 per sample, and advance arrangements must be made.

- Basic handling charge (includes data processing, sample filtration and preparation of extract, reports, voucher sample storage for 1 year and all our labor) – \$110
- Microcystin analysis by PPIA (activity based enzyme assay) – \$40
- Microcystin analysis by ELISA (antibody based structure assay) – \$90
- Microcystin analysis by LCMS (HPLC with UV and mass selective detection) – \$40
- Microcystin analysis by LC-MS/MS (HPLC analysis with tandem MS detection) – \$90
- Tissue microcystins by MMPB (Bound microcystins in tissue by oxidation Anatoxin-a by HPLC-LCMS \$25 (HPLC with mass selective detection) – \$call
- Anatoxin-a by HPLC-FD (James et al HPLC via fluorescence detection) – \$call
- Cylindrospermopsin by HPLC-PDA-MS (HPLC assay w/ uv and MS detection) – \$25
- Cylindrospermopsin by ELISA (antibody based structure assay) – \$90
- Beta methyl amino alanine by LC-MS (HPLC with mass selective detection) – \$50
 - Bound BMAA as above (Determination of protein bound BMAA) – \$90
- Anatoxin-a(s) by ACEI (activity based enzyme inhibition assay) – \$call

Note: Greg cautioned that the lab is often manpower short – just because something is on the price sheet does not mean that the lab is actively running any given assay at any given time.

UConn Center for Environmental Science and Engineering (http://www.cese.uconn.edu/analyt_serv.html)

3107 Horsebarn Hill Road; U-4210

Storrs, CT 06269

Phone: (860) 486-2668

Email: christopher.perkins@uconn.edu

Services: Toxin analysis (ELISA and UPL/MS/MS)

Pricing:

- UPLC/MS/MS for microcystins (-RR, -YR, -LR, and -LA) and anatoxin-a in water – \$139 for CT state agencies and municipalities, otherwise \$182
 - Analysis for these compounds in filters – \$151 for CT state agencies and municipalities, otherwise \$199
- Total microcystin in water – \$81 for CT state agencies and municipalities, otherwise \$107

Disclaimer: Individuals and/or companies listed below have been identified as performing services related to cyanobacteria and cyanotoxin analysis. This should not be considered an endorsement by NEIWPC or any state agency of their qualifications. Public Water Systems considering contracting with any individual or company should verify that they have the adequate training and are competent to perform the work for which they are being considered. Prices should be viewed as guidelines of what to expect for each lab, rather than final quotes – many offer discounts, e.g., for bulk samples.

Vermont Department of Health Laboratory (http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx)

PO Box 1125

Burlington, VT 05402-1125

Phone: (800) 660-9997 or (802) 338-4724

Fax: (802) 338-4706

E-Mail: Kirk.Kimball@vermont.gov

Services: toxin analysis

Pricing: *Services and pricing listed are for Vermont residents only. External samples would be considered on a case by case basis.*

- Microcystin and Cylindrospermopsin by ELISA – \$20.00
- Anatoxin-a by LC/MS/MS – \$20.00

Water Resource Services Inc., Dr. Kenneth J. Wagner, Ph.D., CLM

144 Crane Hill Road

Wilbraham, MA 01095

Tel: (413) 219-8071

Email: kjwagner@charter.net

Services: Identification and count to genus level, many other lake management services.

Pricing: Unknown.

Note: Ken has a limit on how many clients he can serve, as this is only one of many lake management services he offers. He recommends Greenwater Labs for one shot assessments, and if ongoing testing is needed, he suggests contacting Abraxis about getting kits to do one's own analyses.