# Short Form QAPP

**Before utilizing this template, you must obtain written approval from the Division of Water Quality Assurance Officer by emailing DOWQAQC@dec.ny.gov**

Every project conducted by the Division of Water requires a Quality Assurance Project Plan (QAPP). The QAPP must be reviewed and signed by the DOW Quality Assurance Officer (QAO) or their designee prior to the start of the project. This form allows Project Managers for minor projects to comply with the Division's QAPP requirements in a simplified format.

Please populate all fields highlighted in yellow and bracketed in the form and submit to the QAO for review and approval (remove all highlighting and instructions prior to submittal. Any non-highlighted text is standard and should not be changed or deleted). Once approved, distribute copies of the completed QAPP form to all staff participating in the project. Once staff have received the signed QAPP, work on the project may begin.

## Section A - Project Management

### Project Title and Approvals

- Project Title: Lower Hudson River 2025 Harmful Algal Bloom
- Date of QAPP/Revision number: 09/22/2025, Version #1
- Project Manager: Christopher Gobler, SUNY Distinguished Professor, SUNY Stony Brook, Christopher.gobler@stonybrook.edu, (631) 632-5043
    - Approval Signature/Date:

      ______________________________
- Project Quality Assurance Officer: Brian Duffy, Research Scientist 4, NYSDEC/DOW/BWAM/MAS, brian.duffy@dec.ny.gov, (518) 402-8731
    - Approval Signature/Date:

      09/24/2025
      ______________________________
- QAPP was Prepared by/QAPP Custodian is: ☐ Project Manager ☒ Project QAO
- DOW Quality Assurance Officer or designee: Lindsey DeLuna, lindsey.deluna@dec.ny.gov, (518) 402-9252
    - Approval Signature/Date:

      09/24/2025
      ______________________________

Short Form QAPP Validity: From: 09/23/2025 To: 10/03/2025

## Project/Task Organization

List all key individuals involved in the execution of the project (including the Project Manager, lab manager, data users), along with their role within the project:

| Individual and Role | Responsibilities |
|---|---|
| Dr. Christopher Gobler, Project Manager (E) | Manage overall Gobler Lab execution of this project including staffing and financing. Oversee experimental design, data analysis, and data interpretation for project |
| Charles Stoll, NYSDEC, Sampling Staff (E) | Assist with sample collection according to standard operating procedures and this short form QAPP. Operate boat. |
| Brian Duffy, NYSDEC, Project Quality Assurance Officer (E) | Oversight of the project plan. Communicate QA concerns and updates to management. |
| Lindsey DeLuna, NYSDEC, DOW Quality Assurance Officer (E) | Oversee Division of Water Quality Assurance activities, provide expertise regarding analytical and QA/QC issues, and approve and sign QAPP. |
| SUNY Stony Brook (SBU): Dr. Gobler's Lab | Analysis of parameters as documented in Appendix A. |
| Plasmidsaurus | 16S rRNA sequencing |
| New York State Center for Clean Water Technology or GreenWater Laboratories | Non-microcystin cyanotoxin analysis |

All individuals listed above need to receive a copy of the approved QAPP prior to the commencement of the project. Annotate who will receive a hard copy of the QAPP with an "(H)" and those that will receive an electronic copy of the QAPP with an "(E)".

## Problem Definition/Background

In mid-August 2025, New York State Department of Environmental Conservation (DEC) confirmed a Harmful Algal Bloom (HAB) from a report submitted to the New York Harmful Algal Bloom System (NYHABS) for the Hudson River. DEC received additional NYHAB reports on the Hudson River from mid to late August and into early September. Confirmed HAB reports were centralized around Kingston and extended north to Hudson and south to Newburgh. HAB reports ranged from open water to small localized with a majority of reports characterized as large localized HABs. DEC confirmed through visual observations and microscopic examination that the bloom conditions are due to the cyanobacteria *Microcystis aeruginosa*, the most common species in New York.

This project will document the spatial extent of the HAB in the Lower Hudson River during this HAB event in September 2025. This study will be conducted in by SUNY Stonybrook (SBU) in collaboration with NYSDEC DOW, Monitoring and Assessment Section.

**Objective:** To define the spatial extent of the HAB in the Lower Hudson River.

Funding Source/Cost Center: SUNY Stonybrook Contract - AM11957

Consistent with public health law 502, where applicable, DOW will only fund analyses that use NYSDOH ELAP certified laboratories and analytical methods.

**Project/Task Description**

This section **summarizes** the work to be performed during the project. Please address the following points:

1. Tasks:
    a. Collect discrete grab samples approximately every 3 miles along the river. Surface bloom/scum where encountered.
    b. Continuous measures of temperature, salinity, dissolved oxygen, pH, chlorophyll, and phycocyanin will be collected every minute from the boat for the entire sampling reach.
    c. Laboratory analysis
    d. Reporting/Publication
2. Schedule: Monitoring will occur over a 2-day (tentatively 9/23/2025-9/24/2025).
    a. Day 1:
        i. Launch at 18 Ferry St, Hudson, NY 12534
        ii. Take out at North St. Port Ewen, NY 12466 (mouth of Rondout Creek)
    b. Day 2:
        i. Launch at North St. Port Ewen, NY 12466 (mouth of Rondout Creek)
        ii. Take out at River Street, Newburgh, NY 12550
3. Location: Monitoring will occur from Hudson, NY to Newburgh, NY (Figure 1).
    a. Sites will be monitored approximately every 3 miles in the study area or as dictated by the observed local conditions (Table 1).

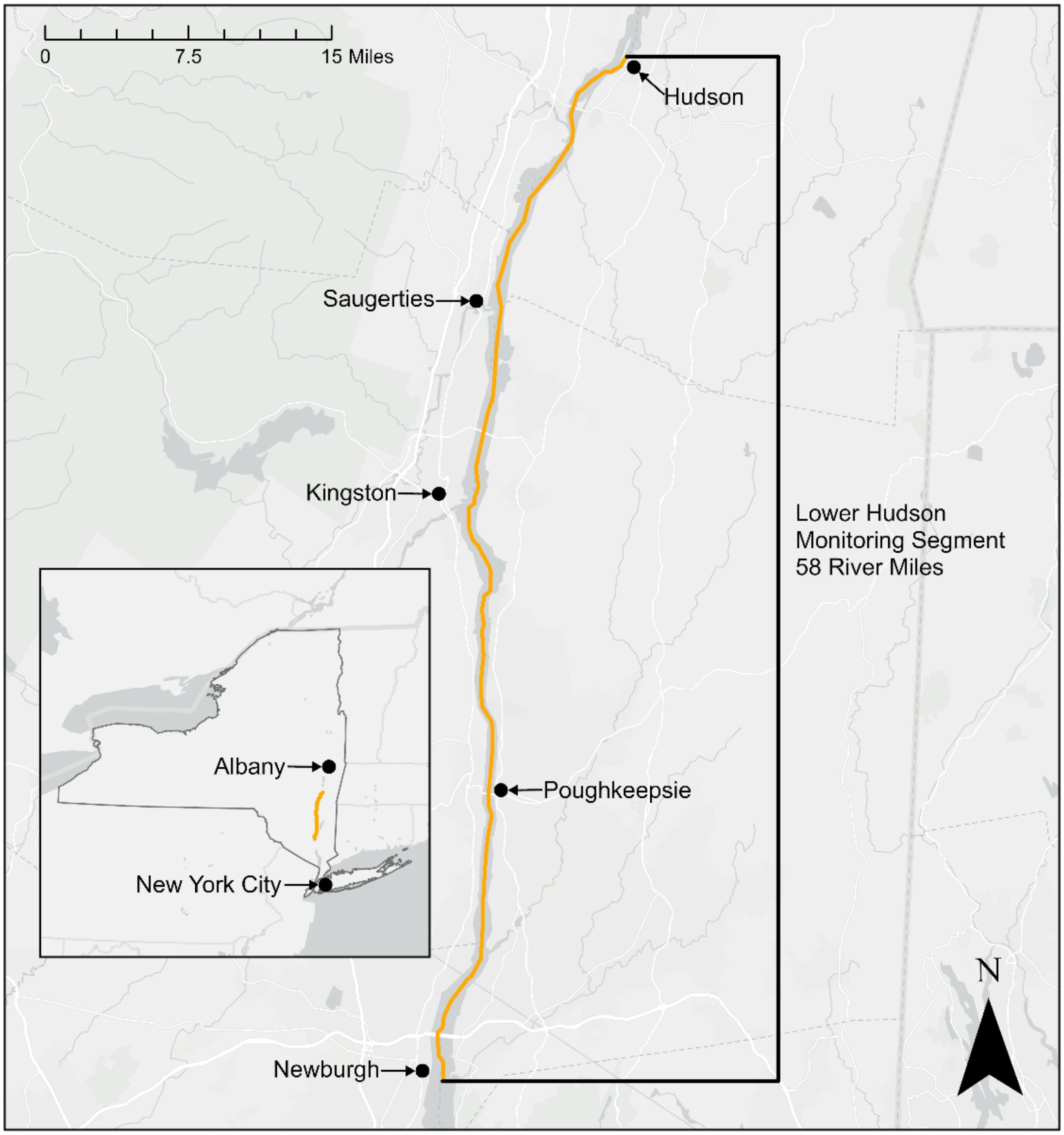


*Figure 1: Lower Hudson River Monitoring Segment for Harmful Algal Blooms in 2025. Map illustrates the river centerline throughout the sampling area, notable locations along the segment, where the segment is situated relative to the state of New York, and the bracketed length of the sampling area.*

*Table 1: Sampling Locations on Lower Hudson River Segment for Harmful Algal Blooms in 2025. Table provides the unique site code, and approximate latitude and longitude location for each sampling location. River miles contained in the site code reflect the measured distance along the Hudson River from the Mario Cuomo/Tappan Zee bridge moving north.*

| Site Code | Latitude | Longitude |
|---|---|---|
| 13-LHUD-46.8 | 41.4872576 | -73.994281 |
| 13-LHUD-49.8 | 41.52785917 | -73.99428362 |
| 13-LHUD-52.8 | 41.56434841 | -73.96519598 |
| 13-LHUD-55.8 | 41.60579578 | -73.95275927 |
| 13-LHUD-58.8 | 41.64920011 | -73.94951141 |
| 13-LHUD-61.8 | 41.69195448 | -73.94481511 |
| 13-LHUD-64.8 | 41.73520146 | -73.94115621 |
| 13-LHUD-67.8 | 41.77654481 | -73.95137023 |
| 13-LHUD-70.8 | 41.81990133 | -73.94950092 |
| 13-LHUD-73.8 | 41.86060217 | -73.94064097 |
| 13-LHUD-76.8 | 41.9001408 | -73.96014676 |
| 13-LHUD-79.8 | 41.94062061 | -73.95262122 |
| 13-LHUD-82.8 | 41.98320842 | -73.94425892 |
| 13-LHUD-85.8 | 42.02539033 | -73.93335658 |
| 13-LHUD-88.8 | 42.0685691 | -73.92678534 |
| 13-LHUD-91.8 | 42.11071836 | -73.92082977 |
| 13-LHUD-94.8 | 42.1499292 | -73.89766984 |
| 13-LHUD-97.8 | 42.18477037 | -73.86361413 |
| 13-LHUD-100.8 | 42.22504323 | -73.84950703 |
| 13-LHUD-103.8 | 42.25171276 | -73.80805968 |
| 13-LHUD-104.8 | 42.2611571 | -73.7952022 |

## Quality Objectives and Criteria for Measurement Data
The project will utilize standard (analytical method specified below) detection and QA/QC limits.

## Special Training/Certifications
Staff operating the boat have a NYS boater safety license.

SBU staff will follow standard SBU health and safety protocols, requirements, and training. In addition, the SOPs and QAPPs referenced in this document will be made available to SBU staff for reference purposes.

**Data, Documents, and Records**

The Project Manager will be the custodian of all records related to the project. Records related to the project that will be retained include the QAPP and the following (check all that apply):

☒ Field Data Sheets
☒ Chain of Custody Forms
☒ Laboratory Data/EDDs
☐ Other ____________________________________________

Records will be stored in the following locations:

- Hard copy: N/A
- Electronic:
  - NYSDEC: L:\DOW\BWAM Share\data\lab_data\goblers_lab

## Section B - Data Generation and Acquisition

**Sampling Process Design**

Samples are being collected from the primary area that HABs have been reported in the Lower Hudson River.

**Sampling Methods**

List the DOW SOPS or any other SOPs/ Guidance that are applicable to this project:

- SOP-AMP-212 HAB Sampling
- SOP-AMP-211 Meter Calibration and Maintenance

**Sample Handling and Custody**

Samples will be handled according to DOW SOP# 101 “Sample Handling, Transport, and Chain of Custody”. Samples to be analyzed by SBU will not require a chain of custody because they are also being collected by SBU.

**Analytical Methods**

Methods will be selected from the approved method in 40 CFR Part 136 for applicable parameters. All analytical methods will be performed by laboratories certified by the NYS Department of Health Environmental Laboratory Approval Program (ELAP) when such certifications are offered. List the analysis methods that will be utilized in this project and the laboratory designated to perform them:

See Appendix A for laboratory methods.

**Quality Control**

The project will utilize standard QA/QC procedures and limits as prescribed in the applicable method documentation and the NYSDEC’s "*Prescribed Analytical Protocols,*" October 2016 (PAP).

- One equipment blanks will be collected daily (total = 2).
- One duplicate sample will be collected daily (total = 2).

**Instrument/Equipment Testing, Calibration, Inspection, and Maintenance**
All field instruments and equipment will be operated according to DOW SOP #211 “Use, Calibration, Maintenance and Storage of multiprobe meters used to measure water quality parameters.” In cases where SOP #211 is not applicable, the appropriate method specifications and manufacture instructions will be followed. Dr. Gobler will be responsible for testing, calibration, inspection, and maintenance of all field equipment, as necessary and per SOP #211 and/or the manufacturer recommendations.

**Inspection/Acceptance for Supplies and Consumables**
Bottles and sample containers will be obtained from a contract laboratory, being cleaned and/or tested to contract specifications. Dr. Gobler will be responsible for obtaining and ensuring the integrity of other project consumables.

**Data Management**
Hard copies of the field data sheets will be stored by SBU and entered by one of the SBU staff into an Excel spreadsheet format to be provided to NYSDEC.

DEC will manage the data in accordance with DOW SOP# 102 “Data Handling and Archival”.

## Section C - Assessment and Oversight

**Assessment and Response Actions**
Due to the limited scope of this project, audits by the QA staff are not required. At his or her discretion, the Project Manager may conduct random observations and reviews of project staff and the data generated by them. Corrective action letters, when necessary, will be transmitted via email from the Project Manager to the affected staff. Contract laboratories utilized in this project are audited per the schedule specified in the contract.

**Reports to Management (check one)**
☒ This project will include a report or manuscript describing findings/outcomes. Per MOU guidance, the report will be reviewed by DOW staff and management prior to publication.
☐ This project does not require a final report to management, for the following reason:
______________________________________________________________
☐ Due to the limited scope of the project, intermediate reports to management are not required.

## Section D - Data Validation and Usability

**Data Review, Verification, and Validation**

The Project Manager will review data as received, primarily focusing on anomalies and omissions in the data. Problems observed in laboratory data will be brought to the attention of the contract manager and/or QA staff for further review.

**Data Usability Assessment**

The Project Manager will review all data generated by the project to insure it meets the objectives of the projects. Data of questionable usability will be brought forth to the QA staff for further review. All data assessed as useable will be used to generate the final decision/outcome of the project.

**Reconciliation with User Requirements**

The purpose of this project is to document the extent of the HAB observed in the Lower Hudson River. The sampling locations have been chosen to monitor the area of the river with the greatest number of reports. Data collected will characterize the conditions in the river and provide context for future management strategies.

# Appendix A. Analytical specifications.

| Parameter | Analytical Lab | Standard Method | Precision | Accuracy | Calibration | Blanks | Method Detection Limit | Quantitation Limit |
|---|---|---|---|---|---|---|---|---|
| **Temperature^** | In Situ | SM 2550 B | ± 1ºC | ± 1.5ºC | Factory Set | ~ | (Range: -5 to 70˚C ) | |
| **Dissolved Oxygen^** | In Situ | SM 4500-O G | ± 1% | ± 2% | Daily | ~ | (Range: 0 to 50 mg/L or 0 to 500%) | |
| **pH^** | In Situ | SM 4500-H+B | ± .05 SU | ± .2 SU | Weekly | ~ | (Range: 0 to 14 SU) | |
| **Specific Conductance^** | In Situ | SM 2510 B | ± 1μs/cm | ± 1% | Weekly | ~ | (Range: 0 to 200 mS/cm) | |
| **Salinity^** | In Situ | Calculated | NA | NA | NA | NA | NA | |
| **Chlorophyll-a^** | In Situ | SM 10200 H | 0 to 100 RFU | NA | Weekly | ~ | (Range: 0 to 100 RFU or 0 to 100 μg/L) | |
| **Phycocyanin^** | In Situ | SM 10200 H | ± 0.01 RFU or 0.01 μg/L | N/A | Weekly | ~ | (Range: 0 to 100 RFU or 0 to 100 μg/L) | |
| **Ammonium**** | SUNY Stony Brook | EPA 350.1 | < | ± 25% | ~ | Every 10 | 0.003 mg/L | 0.01 mg/L |
| **Nitrate**** | SUNY Stony Brook | EPA 353.2 | < | ± 25% | ~ | Every 10 | 0.007 mg/L | 0.01 mg/L |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Total Nitrogen*** | SUNY Stony Brook | calculated | < | ~ | ~ | ~ | ~ | ~ |
| **Total Phosphorus**** | SUNY Stony Brook | EPA 365.1 | < | ± 25% | ~ | Every 10 | 0.004 mg/L | 0.005 mg/L |
| **Orthophosphate**** | SUNY Stony Brook | EPA 365.1 | < | ± 25% | ~ | Every 10 | 0.0049 mg/L | 0.005 mg/L |
| **Microcystin**** | SUNY Stony Brook | EPA 546 | N/A | N/A | ~ | Every 10 | | |
| **Fluoroprobe Chlorophyll a, unextracted^** | SUNY Stony Brook | Bbe Moldaenke, 2014 | ± 0.01 µg/L | ± 20%L | ~ | Every 10 | N/A | 0.02 µg/l |
| **Phytoplankton cell counts^** | SUNY Stony Brook | N/A* | N/A | N/A | ~ | 10% samples compared | N/A | N/A |
| **rRNA^** | Plasmids aurus | 16s | N/A | N/A | N/A | N/A | N/A | N/A |
| **Non-microcystin cyanotoxins^** | New York State Center for Clean Water Technology or Green Water Laboratories | Method to be determined | N/A | N/A | N/A | N/A | N/A | N/A |

**<** Precision is calculated using the following equation: %RPD > (0.9465x^-0.344)100 +5, where: x = sample / detection limit %RPD = [diff(lab duplicate pair)/av(lab duplicate pair)]*100. See SOP-GEN-110_V21-1: Data Validation and Verification for more details.
*indicates parameters with ELAP certified methods not processed under ELAP certified laboratory – DEC does fund these analyses
^parameters without ELAP certified methods
**ELAP certified parameter with certified laboratory