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March 16, 2023

Mr. Aaron Ziemann
Adirondack Park Agency
P.O. Box 99 Route 86
Ray Brook, NY 12977

Mr. Brian Primeau, Bureau of Pesticide Management
New York State Department of Environmental Conservation – Region 5
232 Golf Course Road
Warrensburg, NY 12885-0220

RE: Lake George Park Commission – Applications for usage of ProcellaCOR Herbicide in two demonstration test Bays:
Sheep Meadow Bay, Hague (T) - APA Project No. 2023-0017
Blairs Bay, Hague (T) – APA Project No. 2023-0018

Dear Mr. Ziemann and Mr. Primeau:

The Lake George Association ("LGA") and the Lake George Waterkeeper ("Waterkeeper") are writing you to specify additional items we deem incomplete in the pending Permit Applications from the Lake George Park Commission ("LGPC") cited above. We do so with a clear view to our mission and the LGPC's statutory mandate – both dedicated to protecting the water quality and watershed of Lake George. This commitment focuses on the uniquely special resource that is Lake George, whose Class AA-Special waters, the state's highest water quality designation, are a drinking water source for thousands of local people and visitors, and the lifeblood of a $2 billion tourism economy. There is only one Queen of American Lakes, and it is Lake George.[1] Keeping the Lake clear and clean by doing everything possible to reduce mounting water quality threats and secure the Lake's natural resilience is paramount. This includes giving the level of scrutiny necessary, and warranted, for what would be the first-ever use of a chemical herbicide in Lake George.

With this in mind, the LGA and the Waterkeeper have reviewed copies of the above referenced applications submitted to the Adirondack Park Agency ("APA"), dated February 1, 2023, and the APA's Notice of Incomplete Permit Application, dated February 21, 2023, as well as the New York State Department of Environmental Conservation ("Department") application dated January 19, 2023. In addition to the material cited in the APA's Notice of Incomplete Permit Application and documented in our February 13, 2023, letter to the Department, we are submitting the following

[1] This unique status was confirmed by Justice Muller in his recent decision In the Matter of *Lake George Association v. Adirondack Park Agency,* slip op. March 3, 2023 and in the prior precedent of the APA in rejecting the use of Sonar in Lake George.

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items which demonstrate that the permit applications remain incomplete until these deficiencies have been resolved .

1. **The APA Application is in error for failing to accurately identify the involved wetlands. (Item 13 a & b)**
   Items 13.a and 13.b ask if there are any wetlands on the project site and if any activity listed is proposed to occur within the boundaries of a freshwater wetland, which includes applying pesticides. These questions are both answered as "No." In point of fact, there are wetlands present at both of the proposed project sites, which is why permits are required. This should be corrected.

2. **The Adirondack Park Agency should reclassify the freshwater wetland rating associated with the Sheep Meadow Bay application (2023-0017) based on §578.5 of the Adirondack Park Agency Act.**
   The Sheep Meadow Bay wetland, a deep water marsh, has a value rating of 3 according to the 2022 application. However, it appears that there are multiple values associated with this wetland that would raise the wetland value rating, such as the presence of (c) emergent marsh, (k) wetlands associated with open water providing spawning areas and (q) wetlands containing an endangered or threatened plant species. As is reflected below, there is a need for an expanded plant survey due to the expanded treatment/dilution zone that will result in the drift of the herbicide based on Lake George circulation, hydrodynamics, and temporal components. When the additional values and expanded area are taken into consideration, the wetland is properly classified as having value 2 or 1. Reconsideration of the valuation process is further justified by the decision handed down by the Appellate Division, Third Department, on March 2, 2023, in *Matter of Thomas Jorling v. APA,* which confirmed that the APA has not been following its own regulations when classifying wetlands.

3. **The application material mischaracterizes the dilution area/zone due to the reliance on an inaccurate and incomplete model that fails to incorporate hydrodynamics and temporal components due to wind on, and tributary stream inflow into, the treatment and dilution zones.**
   The dilution zone area/project area is based on the "Aquatic Pesticide Downstream Modeling worksheet" prepared by the New York State Department of Environmental Conservation, which states as its Purpose: "This spreadsheet can be used to estimate concentrations of substance and travel time to a given point in flowing waters. It is assumed that the only major processing is dilution and a first order decay (if applicable). Dilution is estimated using the area of the target watershed or point on a stream and a corresponding United States Geological Survey (USGS) reference gage from which the flow of the watershed in question may be obtained by correlating it to the flow and corresponding area from the reference gage."[2]

[2] https://www.dec.ny.gov/fs/projects/pesticides/aqvmodel.xlsx

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Notwithstanding the intended Purpose of the spreadsheet described above, the submitted applications failed to properly recognize any aspects of water movement, which would require entering water velocities as additional input parameters, and only applied the worksheet's "Whole Lake Dilution" section. This erroneously assumes there are no hydrodynamics that may transport the herbicide outside the dilution zone in measurable concentrations, no kinetics of dilution, and no other temporal components that should be applied. These applications should have used a different section/model on the same page. The worksheet employs a dilution zone, *arbitrarily shaped by the applicant*, that assumes that the herbicide will dilute uniformly and also assumes there is no exchange of water into or out of this dilution zone, again ignoring hydrodynamic transport. The spreadsheet employs a single arithmetic division, dividing the herbicide application volume into the volume of the contrived dilution zone as if it were a stagnant pond.

Therefore, the worksheet as used is incomplete and arbitrary as it assumes simple uniform mixing for dilution into an incorrectly closed and arbitrarily defined volume of the Lake as if there is no water flow at all. This worksheet is too simplistic for application on a water body like Lake George with its complex circulation patterns and hydrodynamics. To correct this deficiency, the applicant should be required to use dye testing under all possible weather conditions and determine water velocity through actual measurements to ensure the "treatment zone/dilution zones" are accurately predicted. This analysis is critical to the application process because it defines the potential area of impact, which must be considered as part of the regulatory analysis. It also affects the notification that is required to riparian owners.[3]

4. **The Project Applications are incomplete as they fail to meet the APA's requirements for a plant survey and are not compliant with the APA's Specific Incompletion Requirements ("SIR") for aquatic herbicides as detailed in the following:**

   - The applications are supported by a rake-toss survey supplemented by a swim over survey. These survey techniques are improperly implemented for an experiment on Lake George involving the first use of a chemical herbicide ever. More properly, more detailed surveys are necessary. The applications should be supported by a Point-Intercept Method (PIM). A PIM survey requires a grid to be established to enable "survey locations to capture variations in depth and micro-habitat types which may occur within and adjacent

[3] It is notable that the arbitrary shaping of the dilution zone (by the applicant) ultimately determines which nearby property owners will be notified of the herbicide application, thus making the very selection of notified property owners itself arbitrary. There is a real possibility of the herbicide escaping the dilution zone in concentrations sufficiently high to warrant expanded property owner notification of water use restrictions, etc. Perhaps this is the reason that NYSDEC Policy DSHM-PES-05-05 Aquatic Pesticide Permit Program Item 9 Riparian Owners and Users states "Affected riparian owners/users shall be those riparian owners/users located within one-half mile of the treatment zone."

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to the survey area."[4] In point-intercept surveys, survey points are regularly spaced at defined locations to avoid subjective selection in the field. While the report claims that this method was used along with the rake toss methodology, the maps fail to demonstrate that these requirements were met, as the survey points should be displayed on the grid to show that they comply with the APA's SIR.

- While the surveys have sufficient points displayed, they do not have 36 vegetated points for either bay test area as required by the APA's SIR. Sheep Meadow Bay has 40 points, but only 33 points with vegetation, which falls short of the required 36. Blairs Bay has 38 points, but only 32 vegetated points. In addition, the APA's SIR requires 12 vegetated points within the treatment area and 24 outside the treatment area. Blairs Bay has less than 24 vegetated points outside the treatment area. Again, this falls short of the Agency's requirements.

- While the rake-toss methodology is a requirement of the APA in these types of project proposals, we question whether it is appropriate for Lake George considering the depth of the littoral zone at which macrophytes can grow; typically as deep, if not deeper, than the 10m rope called for in the methodology. This presents specific problems: first, the entire littoral zone is not being adequately surveyed with a rake with a 10m rope. Second, a single rake toss is not sufficient to capture the diversity of plants present in these bays due to the depth of the littoral zone and the known/potential diversity of Lake George aquatic plant communities. In order to more accurately capture the diversity using the rake toss method, multiple tosses should have been used, which is especially important because of the protected species documented by the New York Natural Heritage Program.

- Guidance on how to properly perform surveys and dye testing in Lake George can be found in the prior precedent of the APA concerning the Sonar permit applications that resulted in permit denials by the APA.

5. The Project Applications are incomplete as they fail to provide adequate survey coverage and the report material is misleading as demonstrated by the following:

- The survey area is incomplete and should be expanded based on the discussion in item 3 above and the failure to incorporate lake hydrodynamics and temporal components due to wind on, and tributary stream inflow into, the treatment/dilution areas/zones.

- The Point-Intercept Method is typically used for pre- and post-management as a regulated manner for estimating macrophyte distribution and abundance throughout the potentially impacted area. By ignoring this protocol, the applicant has failed to supply complete surveys for the actual distribution and abundance of the macrophytes present. The 2022

[4] Madsen, John. 1999. Point Intercept and Line Intercept Methods for Aquatic Plant Management. US Department of Agriculture, Aquatic Plant Control Technical Note MI-02.

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swim-overs provide supplemental information and expose the inadequacies of the initial survey work with the identification of additional species, including more locations of native milfoils (*M. Alterniflorum and Myriophyllum tenellum*) and multiple protected species such as *Isoetes lacustris, Bidens beckii, Myriophyllum alterniflorum* per New York Natural Heritage Program.

- In addition, insufficient documentation is provided for the supplemental swim-over surveys. The identification of the persons performing the survey and macrophyte identification is unknown and credentials to perform such a survey are unestablished. As previously noted, plant diversity is high in Lake George; many species are less common and require experience and background with complex identification. Photos of newly identified plant species would help make up for the lack of credentials; however, no photos are included in the supplemental survey information for 2022. Moreover, the date is missing for the supplemental survey, which would further help determine the identification of the plants species, as many of the species listed can look similar without reproductive or mature structures. For example, the (immature) basal rosette of *Sagittaria graminea* can look like the rosettes of *Isoetes sp.* or *Eriocaulon sp.* and would require a flowering stalk or spore-presence for identification confirmation. Without photos, survey dates or abundance and location data, there is little proof that this survey even took place.

- No identification has been confirmed for the four narrow-leaf pondweed species during either survey, which could include additional protected species: *Potamogeton diversifolius*, *P. hillii* or *P. strictifolius*. As noted by the manufacturer and as confirmed by the results of other ProcellaCOR treatments, the Potamogeton genus is impacted by the herbicide.

- While *Myriophyllum alterniflorum* is listed as protected in the applicant's swim-over document, other protected species are identified but are neglected and should be highlighted as protected by NYS: *Isoetes lacustris*, *Bidens beckii* (listed as *Megalodonta beckii* in LGPC document) and *Myriophyllum alterniflorum.* In addition, the survey areas are not shallow enough to adequately determine growth of *Subularia aquatica* or the extent of growth of other shallow-nature, NY Natural Heritage protected macrophytes. Considering the questionable timeframe and credibility of the 2022 supplemental survey, the shallow areas remain improperly surveyed.

- The survey depths are inadequate and the littoral zone is only partially covered by subjective point locations. The deepest survey points are on the outskirts of each bay, rather than in any one or more intercepts within a milfoil bed/treatment area. This creates inherent inaccuracies for survey points where plants *could* or *should* be found based on personal or community knowledge.

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- With the questionable survey techniques and methodology between 2021 and 2022, the distribution of rare and protected species by NY Natural Heritage is unconfirmed and requires additional, legitimate investigation.

- The Reports accompanying each Application contain contradicting material, such as: the use of the PIM to "determine the extent of growth of aquatic plants within an area of concern." The areas cover the entire littoral zone, out to at least 30 feet for each bay, where beds of *Nitella* dominate the macrophyte community and are deemed integral to the water quality of Lake George. While few points may be present within the survey methodology, the survey points are not consistent or deep enough to determine the extent of *Nitella* growth that could potentially be impacted.

- The APA's SIR for this subject matter also requires information within 0.3 mi. from a treatment area, yet the outskirts of each of these proposed test bays were sampled primarily at deep locations, thereby omitting shallow vegetation growth that needs to be included in the application.

- The 2021 Report accompanying each proposed test bay states: "areas of the wave break zone within depths of 1-4 ft. mostly consisted of bottom sediments of sand with little organic materials; areas within the 0.3 mile radius of the proposed treatment areas were lacking in aquatic macrophytes due to benthic bedrock or steep drop offs not conducive...for plant growth." This is misleading as it makes the bay sound barren, when the prospective bay surveys show the complete opposite – namely, abundant vegetation and diversity.

- Considering the diversity of macrophytes in Lake George, multiple rake tosses should have been completed at each sample site for the use of the PIM, or a snorkel/dive transect survey should have been included to capture the high diversity of species (not captured by a single rake toss) identified in Ogden's 1976 Field Guide to Aquatic Plants of Lake George.[5]

- In the multiple site visits by the applicant and others since 2021, it has been shown that the dense Eurasian watermilfoil bed in Sheep Meadow Bay only occurs as a small bed in the northeastern portion of that bay. The survey map does not denote this. This gives rise to the question: Why was the treatment zone proposed for the entire southeastern shoreline?

6. The Project Applications are incomplete as they fail to provide any information or assessment of the in-lake biological community of invertebrates, macroinvertebrates and fish to determine potential impacts of the aquatic herbicide treatment.

[5] Ogden, Eugene C. 1976. Field Guide to the aquatic plants of Lake George, New York. Book. Albany: University of the State of New York, The State Education Department.

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These investigations should take the form of surveys that will determine species composition, population, occurrence and distribution and should be performed prior to any herbicide application. These surveys should include a description of the method of survey, the determination of survey points, the method for inventory, and the qualifications of personnel. The investigation should also include the post application sampling times in relation to the herbicide application as well as observation and documentation of in water column biology.

In conclusion, the application fails to provide the information necessary to meet either agency requirements for completeness or to allow the agencies to make informed decisions. In our opinion, since this is proposed by the applicant as the first ever experimental application of a chemical herbicide in Lake George, it is necessary to collect all of the information identified in this letter to determine all possible impacts to the vital resources of Lake George before consideration of this experiment moves forward.

The LGA and the Lake George Waterkeeper look forward to working with the Adirondack Park Agency and the New York State Department of Environmental Conservation to defend the natural resources of Lake George and its watershed. We also continue to make this same overture to the Lake George Park Commission. Thank you for your consideration.

Sincerely,

Christopher Navitsky, PE
Lake George Waterkeeper

Eric Siy, President
The Lake George Association

cc: all by electronic mailing
John Ernst – Chairman Adirondack Park Agency and Board members
Dave Wick - Executive Director LGPC
Barbara Rice – Executive Director APA
Joseph Zalewski – Regional Director, NYSDEC Region 5
Thomas West, Esq.

LGA Lake George Association