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To: Adirondack Park Agency
From: Dave Wick, LGPC Executive Director
Date: April 6, 2022
Re: Response to Public Comments - ProcellaCOR

Background

The NYS Lake George Park Commission (Commission) is appreciative of the opportunity to respond to the submitted comments regarding APA Projects 2022-0003 and 2022-0004 (ProcellaCOR aquatic herbicide demonstration project).

The Commission is the New York State agency charged with the long-term protection of Lake George and its users, including invasive species management and prevention. This agency has managed Eurasian watermilfoil for more than three decades, always seeking to identify and implement the best practices and technology available, working in partnership with the NYS DEC and NYS Adirondack Park Agency.

The Commission has determined that it is in the best interest of Lake George to evaluate this new tool in the control of the invasive species Eurasian watermilfoil. The demonstration project in front of the Adirondack Park Agency represents a reasonable entry into the utilization of the low-impact, high-efficacy aquatic herbicide known as ProcellaCOR EC. Given the great success of the Minerva Lake treatment in Essex County in year 2020 (and many others), this herbicide shows great promise towards the Commission’s three-decade battle against this invasive species. The NYS DEC has already granted permits for this Lake George demonstration project, and it is the Commission’s hope that the Adirondack Park Agency also views this project favorably.

The public comments received by the Agency show both support and opposition, which was expected for such a proposal. It has been the Commission’s sincere interest and intent to be as transparent about this project as possible, going back to April 2021 when the Commission began researching this herbicide and its potential application to Lake George, including a public meeting presentation by APA staff Leigh Walrath on the Minerva Lake ProcellaCOR treatment. Substantial information is currently hosted on the Commission’s website, right on the homepage, where the public can learn about the proposal, the product’s regulatory reviews and approvals.

It is noted that there are several comments expressing concern from a misunderstanding regarding the behavior and safety profile of ProcellaCOR. The behavior and safety of this product and its active ingredient are well understood, as state and federal approvals have long

demonstrated. Several public comments unwittingly reference outdated information stemming from a 2018 review by the European Union, which sought additional information on florpyrauxifen-benzyl. The active ingredient in this herbicide was formally approved by the EU in July 2019 (see Official Journal of the European Union, Commission Implementing Regulation (EU) 2019/1138 of 3 July 2019).

Many of the oppositional comments are the same, and the Commission has worked to address the key points in the submittals. For clarity, they have been segregated for response as follows:

1. Lake George Association/Waterkeeper (Comments 1-11)
2. Adirondack Council (Comments 12-17)
3. Protect The Adirondacks! (Comments 18-29)
4. Letters from the general public, largely reflective of the Lake George Association's 'Call to Action' stock letter opposing this project (Comments 30-38)

Response to Comments: Lake George Association/Waterkeeper

1. Comment: Circulation and hydrodynamics will result in wide-spread distribution of the herbicide...
 - a. Response: The Commission and its agent SOLitude Lake Management have provided the APA with the state-approved modeling required for aquatic herbicide treatments. This modeling has been accepted by the NYS DEC and the APA. The purpose of any model is to estimate real-life processes and results to the greatest extent practicable. The unverified map and information presented by the LGA and Jefferson Project does not at all account for product dilution, which is the most basic tenet of modeling such an activity. To model an herbicide within an aquatic system without accounting for dilution of the product is fundamentally erred. ProcellaCOR is a hydrophobic herbicide that binds tightly to vegetation, and it is also degraded by exposure to sunlight in a matter of hours. The comment and photos provided are misleading and inaccurate, showing a vastly greater area affected than the NYS required dilution models identify.
2. Comment: The effectiveness of the proposed use... will be greatly reduced by the strong currents and hydrodynamics of Lake George...
 - a. Response: The commenter is misrepresenting the practical application standards presented on the ProcellaCOR product label, which is not recommended for fast moving waters like canals and rivers. Despite the misrepresentations, Lake George is in fact a lentic (still water) ecosystem. LGPC staff, as well as APA staff, have swam the demonstration sites many times and can attest that there is no appreciable current. Additionally, the sites have been visited and reviewed by a professional applicator and Certified Lake Manager, Glen Sullivan of SOLitude Lake Management, who finds the two sites fall well within established parameters for treatment.

Additionally, the application has been reviewed and approved by the Department of Environmental Conservation, who specializes in the review of aquatic herbicide applications.

3. Comment: The degradation of ProcellaCOR can potentially be very slow and what it degrades into remains longer than the primary compound and may be as toxic...
 - a. Response: This comment is not accurate. The appropriateness, effectiveness, and safety of this product and its metabolites are supported by approvals from EPA, New York State, and many other state regulatory review and approval agencies. In their reviews, the EPA and NYS DEC/DOH independently review all active and inactive ingredients. Despite misrepresentation or misunderstanding of the product by the commenter, it is understood that the active ingredient will be absorbed by vegetation or break down in a matter of hours to days by photolysis. Also, it's worth noting here that the properties of ProcellaCOR simply do not allow it pass below the thermocline, and as such it remains in the photic zone (10±m depth for both thermocline and Secchi disk readings).

With respect to the products metabolites, the science and approvals show that the inert metabolites of the product are, as would commonly be expected, less effective than the product itself. The EPA's Environmental Fate and Ecological Risk Assessment for florpyrauxifen-benzyl looked at toxicity for the three different breakdown compounds to non-target vascular aquatic plants using EWM as one reference plant. Compared to ProcellaCOR (florpyrauxifen-benzyl), EPA concluded: ...the relative toxicity of the transformation products on SAVs:

- florpyrauxifen-acid was 30x less toxic
- benzyl-hydroxy was 1,700x less toxic
- hydroxy-acid was 11,400x less toxic

4. Comment: Although the USEPA stated in its final registration decision that the impacts of the herbicide on public health “appear to be minimal,” the European Food Safety Administration declined to approve the herbicide’s application on grounds that the endocrine-disrupting potential of the herbicide could not be ruled out...
 - a. Response: That comment has outdated and incorrect information. The European Food Safety Authority approved the active ingredient Florpyrauxifen-benzyl in July 2019. The approval allows for direct aqueous treatments of rice food crops, which is arguably more concerning than open water invasive species treatments. The Commission appreciates that it is difficult for the public to gather, sort, and understand all relevant information related to any particular herbicide. Regarding public safety, Department of Health review summaries are so important/valuable for context. For example, regarding the EFSA research on potential endocrine disruption, the relevant short-term ‘No Observable Adverse Effects Level’ (NOAEL) found is 100 mg/kg body weight per day from the 90-day study and the relevant

long-term NOAEL was 50 mg/kg body weight per day from the 2-year study. If we consider the 7.72 ug/L ProcellaCOR rate for milfoil control, then we can see how the NOAEL's that they determined relate to a treatment in Lake George. Using the EFSA's NOAEL's, an average 150 lb adult, would have to drink 232,690 gallons per day of ProcellaCOR treated water over 90-days or 116,345 gallons per day of ProcellaCOR treated water over 2-years to achieve the NOAEL. Furthermore, not only is it impossible to drink enough ProcellaCOR treated water to observe an adverse effect, but ProcellaCOR would never persist in the water for 90-days or 2-years considering it has a half-life of about 1.5 days in aquatic conditions. ProcellaCOR has an excellent human health profile and thus there are no water use restrictions for potable or recreational use following treatment.

5. Comment: There are health concerns with the proposed use of ProcellaCOR which are not readily identified or analyzed in these application submissions..
 - a. Response: ProcellaCOR is an EPA approved and NYS Labeled and Registered aquatic herbicide, following thorough review for many years. The formal NYS DEC regulatory review and approval processes evaluate any potential health concerns with the applications of aquatic herbicides. The DEC approvals for these applications reveals that no public health concerns exist. Their approvals are publicly available. Consistent with response to #3 above, EPA concluded that "Degradates are not expected to cause any human health adverse effects and the EPA does not have any hazard concern for metabolites and/or degradates of florpyrauxifen-benzyl that may be found in food or drinking water."

6. Comment: Herbicide treatment of Eurasian watermilfoil will result in significant nutrient loading from decomposing plants, especially phosphorus, that will cause algae growth and increase the potential for Harmful Algae Blooms..
 - a. Response: This comment is not accurate. ProcellaCOR treatment occurs early in the growing season when the plant is at 10-20% of its total potential biomass, greatly reducing annual nutrient release associated with natural EWM senescence by 80-90% in the treatment year. Not only is the plant biomass die off considerably less following a ProcellaCOR treatment, but this die-off only happens one time in the weeks following treatments. Conversely, these milfoil beds if not treated would grow to their maximum extent, and then die off, with a much larger nutrient release due to the larger biomass. Plus, following the ProcellaCOR treatment, there will be no biomass to die off in any subsequent years, as opposed to annual die offs without treatment. Since ProcellaCOR provides long-term milfoil control, the milfoil life-cycle in this area would be stopped and the nutrient release would decrease in the long-term, thereby reducing risk of harmful algal blooms.

7. Comment: Project Applications are incomplete and fail to meet APA requirements for plant

survey and provide misleading information in that regard...

- a. Response: This is false. The Commission and its experienced professional contractors have worked with and responded to every request by Agency staff in good faith, on a timely basis. Based on guidance and feedback by Agency staff, we understand the application to be complete. The assertion that the plant survey work is somehow purposefully “misleading” is a comment undeserving a response.

8. Comment: The Applications contain improper dilution determination/calculation...

- a. Response: All methods are consistent with applicable standards set by EPA and NYSDEC, and the subject treatments on Lake George have been reviewed and approved by NYS DEC in consultation with NYS DOH.

9. Comment: On reinfestation and post-treatment measures...

- a. Response: The manufacturer offers a 3-year milfoil control guarantee in sites treated with ProcettaCOR, which is vastly superior to the results from the Commission’s current hand harvesting techniques. As with all priority EWM sites, the Commission will undertake post-treatment plant survey and EWM hand harvesting in and around the test sites indefinitely. The Commission anticipates no additional herbicide treatments in the foreseeable future for either of these two treatment sites.

10. Comment: Lake George lacks a mechanism for comprehensive management decisions...

- a. Response: This is false. The Lake George Park Commission, in coordination and communication with its funding and planning partners, has been leading the management of EWM for more than 30 years as the New York State agency responsible for such actions. In-season reporting and interactions regarding harvesting operations happen on a daily level, with end-of-day texts from the contractor to all involved parties regarding progress and next steps. Pre-season discussions regarding funding available and priority area management has long been a part of the Lake George EWM management effort. The Commission has been working for the past several years on an intensive capital effort to eliminate dense and moderate beds with the hopes that these large seed beds may reduce EWM proliferation so that efforts may transition to maintenance level activities at each site. It is through this significant increase in investment in dense and moderate beds that we’ve learned some areas, regardless of the hand harvesting investments made, simply don’t respond well to this management technique.

11. Comment: There are significant concerns about the impacts to native macrophytes and organisms given the lack of overall testing that has been performed...

- a. Response: This aquatic herbicide has been subject to dozens of peer-reviewed

research studies, plus state and federal agency approvals, all of which document the exceedingly limited impacts upon native plants and organisms. The DEC identifies that there are no 'data gaps' regarding the herbicide's potential impacts. ProcettaCOR has been used in hundreds of waterbodies across the nation including 30 in New York State and 50+ in New Hampshire. There are many published papers available (and on the Commission's website) to outline the selectivity of ProcettaCOR treatments. There are also pre and post treatment plant surveys from many waterbodies that show increased native plant diversity following milfoil treatment with ProcettaCOR. The Commission relies on published science and approvals from the expert review authorities at EPA, New York DEC, New York DOH, and others for its guidance regarding these issues.

Response to Comments: Adirondack Council

12. Comment: No management in the treatment areas for 4 and 7 years... non-chemical treatments should be recommenced in both bays to determine how EWM responds to hand harvesting and benthic barriers...

- a. Response: Intensive hand harvesting was conducted at the subject sites for many years, and unfortunately the milfoil beds returned within two-years' time. Benthic barriers are not favored presently as they indiscriminately kill all species (plant and animal) beneath the mats, and we have found that the technique is uniquely vulnerable to reinfestation by EWM following mat removals.

13. Comment: Minerva Lake Monitoring...

- a. Response: The Minerva Lake treatment has been very successful, with no non-target impacts in the lake identified. Post-treatment plant surveys in the year of application and one year after application have shown no significant non-target plant reductions.

14. Comment: Potential Impacts to Rare Native Plant Species and Organisms...

- a. Response: The subject species, though labeled as rare or threatened in NY, are not rare within the waters of Lake George. With respect to *Isoetes lacustris*, the plant survey for Sheep Meadow Bay notes that, "Areas of 20 ft in depth and greater were found to have *Isoetes lacustris* a macrophyte found on the New York State list of Rare, Threatened or Endangered plants; though it is commonly found in Lake George throughout this depth range." As for *Myriophyllum alterniflorum*, it has been found to have a 24% frequency in the Lake (see Table #2-1 in Taggett and Boylen 1989). "This species typically grows on sandy sediments in shallow water (less than 2 meters) throughout the Lake George basin," (Eichler and Boylen 2007).

15. Comment: Circulation of ProcettaCOR and Sampling through the Water Column...

- a. Response: The application and associated water sampling will follow all label requirements and permit conditions.

16. Comment: Given the presence of HABs in Lake George, including two last year, the application should address if and how the application of ProcellaCOR could increase the likelihood of a HAB(s) due to impacts from phytoplankton or nutrient loading as a result of EWM die off...

- a. Response: Please see response to # 5 above.

17. Comment: Persistence of Degradates...

- a. Response: Please see responses to #'s 3 and 4 above

Response to Comments: Protect the Adirondacks!

18. Comment: 'We question question to decision to abandon a EWM control practice that has yielded positive results and is safe...

- a. Response: The Commission is in no way abandoning its significant hand harvesting and diver assisted suction harvesting efforts on Lake George. This past month, the Commission signed a 4-year contract with AE Commercial Diving for an amount not to exceed \$1.6 million dollars for suction harvesting milfoil control work on Lake George, following up on our previous four-year contract with the same company. Hand harvesting of Eurasian watermilfoil on Lake George is expected to continue long into the future as the primary method of managing milfoil.

19. Comment: Dynamic water currents...

- a. Response: Please see responses to #1 and #2.

20. Comment: Minerva Lake Experience...

- a. Response: Please see response to #12.

21. Comment: Chautauqua Lake Experience/mixed results...

- a. Response: Chautauqua Lake is also a drinking water supply, which was treated in 2020, and as noted in the comment underwent third-party independent study by Princeton Hydro, resulting in a document titled INDEPENDENT THIRD-PARTY MONITOR FOR CHAUTAUQUA LAKE MACROPHYTE MANAGEMENT, 2020 HERBICIDE TREATMENT PROGRAM. The Executive Summary states as follows

“Water quality data showed no acute impacts related to temperature, dissolved oxygen, pH, specific conductance, or clarity in relation to the treatment. The plant community showed biomass reductions of the target species, Eurasian watermilfoil (*Myriophyllum spicatum*), in the Treatment and Non-Treatment sites following treatment. In addition, the non-target, non-native, curly-leaf pondweed (*Potamogeton crispus*), also showed reductions in the Treatment and Non-Treatment sites between Pre-Treatment and Post-Treatment. Reductions in curly-leaf pondweed may be related to the natural life cycle of this species which is characterized by early-senescence. Finally, native plant species richness increased at the Treatment site following treatment as did the Floristic Quality Index. Macrophyte and water quality data showed the treatment program to have been successful in reducing Eurasian watermilfoil biomass and allowing for increasing native submerged aquatic vegetation (SAV).”

22. Comment: Flow control and product dispersion...

- a. Response: This statement incorrectly assumes a treatment encompasses all EWM at a given site, essentially a closed box. In fact, the treatment area is designed to focus the application on a specific contiguous and properly shaped area enveloping the majority of the target plant, with the assumption that diffusion of the herbicide will impact those plants that fall just outside the zone. That "adjacent impact area" depends on the scope of the treatment area within the larger waterbody, the application rate, and any anticipated water movement. The adjacent impact area for the Lake George applications will be relatively small due to the dilution from larger and deeper water.

23. Comment: Inadequate data and rationale...

- a. Response: This application includes substantial rationale and detailed information regarding the harvest history of these two demonstration sites, and the application was deemed complete by the APA.

24. Comment: Concern about dead biomass and HAB's...

- a. Response: Please see response to Comment #5

25. Comment: Impacts to native plant community...

- a. Response: ProcellaCOR is incredibly selective. In its review, the EPA found that florpyrauxifen-benzyl has no risk concerns for non-target wildlife, and does not bioaccumulate in fish or freshwater clams. There are few non-target plants impacted; these include water shield and native milfoil. Water shield plants have shown to rebound in the same growing season following treatment. Native milfoil is common throughout the Lake, and from a whole-lake population perspective, the

population will not be significantly impacted by treatments. The EPA set the maximum allowable application rate of ProcellaCOR at 48 ppb due to concern for non-target aquatic vascular plants. The proposed application rate for the demonstration sites in Lake George are significantly and safely below this threshold (~7.7ppb). See also the response to #13 above.

26. Comment: Herbicide components not described in the application...

a. Response: Please see response to Comment #3.

27. Comment: No discussion regarding hand harvesting on demonstration sites...

a. Response: The application materials and justification documents specifically note in detail the harvest history of these two sites, and why hand harvesting efforts were paused at these two sites, in a joint decision by the Commission and the LGA (historic co-funders of the LG milfoil control program)

28. Comment: Experimentation – why not do mesocosms to experiment?

a. Response: ProcellaCOR is a registered and approved aquatic herbicide in NYS following many years of review and approvals by the NYS DEC and Department of Health. The Commission even took the extra step in asking the Chief of the NYS DEC Pesticides Registration Division in Albany if there were any additional recommendations for research on this product. The answer was that, no, there were no ‘data gaps’ related to this aquatic herbicide and no additional studies were sought to more closely understand this product.

29. Comment: Adjudicatory hearing...

a. Response: The Commission has no comment on APA regulatory processes, but does note that level the scientific study and regulatory approvals of ProcellaCOR are incredibly substantial, and the opportunity for the public to be engaged on this topic has been extensive. The Commission has been publicly transparent and open about this proposed effort since its April 2021 meeting when Leigh Walrath, APA Freshwater Project Analyst presented the findings of the Minerva Lake ProcellaCOR treatment at an LGPC public meeting. The topic of ProcellaCOR has been on the Commission’s agenda several times since, including additional presentations.

Response to Common Concerns and Questions from the General Public

30. Comment: Concerns for Drinking Water and Human Health...

a. Response: The US EPA registered ProcellaCOR as their lowest category of risk (‘reduced risk’), and identified no risks of concern to human health. Toxicology studies found no adverse acute or chronic effects. The EPA concluded that drinking

water exposures to ProcellaCOR do not pose a human health risk and no federal maximum allowable drinking water concentrations were created (i.e. no drinking water restrictions). The observed half-life of the product is 2.6 days in aquatic environments, and EPA and DEC both concluded there is no hazard or concern for metabolites and degradates. See 4a above.

31. Comment: Concerns for Negative Effects on Native Plants and Wildlife...

- a. Response: Please see response to Comment #23

32. Comment: Concerns that the Product has Not Been Studied Enough; Not Enough Known about Degradates...

- a. Comment: ProcellaCOR was developed in 2010, and was subject to dozens of peer-reviewed scientific studies for several years, leading up to its ultimate approval by the US Environmental Protection Agency in 2017. For additional information, see response at # 3 above.

33. Comment: Concerns that Lake George is Being Used as an Experiment; It is Unique...

- a. Response: As evidenced by the extensive research and approvals for the active ingredient for ProcellaCOR, the use of this invasive species management tool in Lake George is by definition not an experiment. ProcellaCOR has been studied for more than 10 years, and its active ingredient has been approved and utilized across the globe. ProcellaCOR has been used in hundreds of waterbodies throughout the nation, including dozens in New York State. Locally, ProcellaCOR has been utilized in Saratoga Lake, Glen Lake, and Minerva Lake. Consistent with research and approvals, these treatments have had exceptional results with no identified impacts to public health or the environment.

34. Comment: Concern about Circulation and Hydrodynamics of Lake George Application, Result in Spread Around Lake...

- a. Please see responses to Comments #1 and #2.

35. Comment: Concern Nutrient Loading from Decomposition Will Result in HABS...

- a. Please see response at to Comment #5.

36. Comment: Concerns about Milfoil Becoming Herbicide Resistant...

- a. Response: The approved label for ProcellaCOR EC addresses herbicide resistance. To prevent potential resistance, the label instructs applicators as follows: "... do not use ProcellaCOR EC alone in the same treatment area for submersed and emergent plant control for more than 2 consecutive years." Any application of this product in

Lake George will follow this label restriction. As a practical matter, given the proven efficacy of this product to target and eliminate Eurasian watermilfoil, which is supported by a manufacturer's "three season milfoil-free guarantee," the subject areas are not anticipated to require any additional applications, certainly not in consecutive years.

37. Comment: Concerns about sampling methods and monitoring of plants, algae, invertebrates, etc...
- a. Response: The methods and scope of monitoring will follow all label requirements and permit conditions.
38. Comment: Concerns about oxygen depletion resulting from EWM senescence following treatment...
- a. Response: All EWM plants in the Lake die-off every year at the end of the growing season, and this has an associated biological oxygen demand. The ProcellaCOR treatment is proposed in early June when plant biomass will be at 10-20% of its full potential, thus representing an 80-90% reduction in biological oxygen demand.