RECEIVED
3/20/2024
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION

AQUATIC NUISANCE CONTROL PERMIT APPLICATION - HERBICIDE

Lake St Catherine

Wells/Poultney, Vermont

March 2024

APPLICANT:
Lake St Catherine Association
PO Box 545
West Sand Lake, NY 12196

LETTERS OF SUPPORT FROM:

Town of Wells Select Board

Town of Poultney Select Board

APPLICATOR:
SŌLitude Lake Management
590 Lake Street
Shrewsbury, MA 01545

Town of Poultney

February 18, 2024

To Whom This May Concern:

We are pleased to support the Lake St Catherine Association (LSCA) in connection with its DEC permit application.

We have worked with the LSCA for many years and have historically supported and sponsored through the Aquatic Nuisance Control Grant Program. We appreciate their efforts to keep us and our residents informed and knowledgeable about local water quality issues.

The work of the volunteer LSCA has done for Lake St Catherine has been outstanding and contributes to the economic vitality of our community. Their effort to continue their aquatic nuisance prevention and control program is vital to the health of our lakes and our economy.

We hope that you will give favorable consideration to the Associations permit application. If you need additional information about the organization or the Town's support, please contact me at 802-287-9751.

Sincerely,

Paul A. Donaldson
Poultney Town Manager

TOWN OF WELLS
P.O. BOX 585
WELLS, VERMONT 05774
(802) 645-0486

February 21, 2024

To Whom it May Concern,

The Wells Select Board has for many years been a strong supporter of Lake St. Catherine and it's supporting organizations, The Lake St. Catherine Association and The Lake St. Catherine Conservation Fund. We of course, are very thankful for the work that these organizations do to help keep our lake a valuable resource, not only economically for the town, but for the enjoyment of locals, tourists and 2nd home owners. Anything that we can do to help save the lakes battle with invasive organisms is of great importance to us and the state. The groups are working to use all of the methods available to accomplish this goal. Whether it is diver assisted suction harvesting or volunteer Milfoil harvesting or educating the public, boaters and property owners.

Anything that can be done to help with permits and financially for the use of herbicides will be greatly

TOWN OF WELLS
P.O. BOX 585
WELLS, VERMONT 05774
(802) 645-0486

appreciated.

Thank you,

Don Preuss
Select Board Chairman

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RECEIVED 3/20/2024 DEPARTMENT OF ENVIRONMENTAL CONSERVATION WATERSHED MANAGEMENT DIVISION

Application for use of **Pesticides** under an **Aquatic Nuisance Control Permit**

Per 10 V.S.A. Chapter 50, § 1455

For Aquatic Nuisance Control Permit Program Use Only

Application Number:

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
LAKES & PONDS PROGRAM

Submission of this application constitutes notice that the entities listed below intend to use pesticides in waters of the State to control aquatic nuisance plants, insects, or other aquatic life; and that the entities below have demonstrated that (1) there is no reasonable nonchemical alternative available; (2) there is acceptable risk to the nontarget environment; (3) there is negligible risk to public health; (4) a long-range management plan has been developed which incorporates a schedule of pesticide minimization; and (5) there is a public benefit to be achieved from the application of a pesticide or, in the case of a pond located entirely on a landowner's property, no undue adverse effect upon the public good. Submit a permit review fee of $75 for a private pond or $500 for all other waterbodies, made payable to the State of Vermont. All information required on this form must be provided, and the requisite fees must be submitted to be deemed complete.

A. Applicant Information

1. Entity's Name: Lake St. Catherine Association

2a. Mailing Address: PO Box 631

2b. Municipality: Wells	2c. State: VT	2d. Zip: 05774

3. Phone: 802-287-6027	4. Email: info@lakestcatherine.org

B. Pesticide Applicator Information (Check box if same as above in Section A: ☐)

1. Entity's Name: SOLitude Lake Management; Attn: Marc Bellaud

2a. Mailing Address: 590 Lake Street

2b. Municipality: Shrewsbury	2c. State: MA	2d. Zip: 01581

3. Phone: 888-480-5253	4. Email: MBellaud@solitudelake.com

C. Application Preparer Information (Check box if same as above: Section A ☐ and/or B ■)

1. Preparer's Name:

2a. Mailing Address:

2b. Municipality:	2c. State:	2d. Zip:

3. Phone:	4. Email:

D. Waterbody Information

1. Name of waterbody: St. Catherine Lake - Wells 2. Wells - Rutland

3. Are there wetlands associated with the waterbody? ■ Yes ☐ No
Contact the Vermont Wetland Program: (802) 828-1535 for additional information.

4. Are there rare, threatened or endangered species associated with the waterbody? ■ Yes ☐ No
Contact the Vermont Fish & Wildlife Natural Heritage Inventory: (802) 241-3700 for additional information.

5a. Is this waterbody a private pond (per 10 V.S.A. 5210)? ☐ Yes ■ No If No, skip to Question D6.

5b. Is this private pond totally contained on landowner's property? ☐ Yes ☐ No

5c. Does the private pond have an outlet? ☐ Yes ☐ No
If yes, what is the name of the receiving water from this outlet?

5d. Is the flow from this outlet controlled? ☐ Yes ☐ No
If yes, how and for how long?

6. List the uses of the waterbody – check all that apply:
■ Water supply ■ Irrigation ■ Boating ■ Swimming ■ Fishing ☐ Other:

E. Treatment Information

1a. Proposed start date: June 2024

1b. Proposed end date (if known): 5-year request

2. Aquatic nuisance(s) to be controlled:
Plant/Algae/Animal: Eurasian watermilfoil
Submit additional information as needed.

3. Pesticide(s) to be used[1]: Florpyrauxifen-benzyl
Trade Name: ProcellaCOR EC
EPA Registration #: 67690-80
Submit a copy of the Product Label & Material Safety Data Sheet.

4. Provide a map of control activity area.
Provide location of (each) treatment area in waterbody.

5. Application rate (~~ppm~~): 2-5 PDU (3.86-9.65 ppb)
Explain the above application rate & provide calculations.

6. Attach a narrative description of the proposed project to include the following items:
a) Reason(s) to control the aquatic nuisance;
b) Brief history of the aquatic nuisance in the waterbody;
c) Reason why no reasonable nonchemical alternatives are available; and,
d) Description of the proposed control activity.

7. If you answered "no" to D5b above, then a Long-range Management Plan[2] (LMP) is required:
a) Describe how control of the nuisance species will be conducted for the duration of the permit (must be at least a 5 year time span and incorporate a schedule of pesticide minimization); and,
b) Explain how the LMP will be financed; include a budget and funding sources for each year.

F. Adjoining Property Owner Certification (For additional information, please see the APO Notification Guidance)

MB I certify, by initialing to the left, that I have notified adjoining property owners of the proposed project using the DEC Adjoiner Form template letter that was sent by U.S. Mail.

G. Applicant/Applicator Certification

As APPLICANT, I hereby certify that the statements presented on this application are true and accurate; guarantee to hold the State of Vermont harmless from all suits, claims, or causes of action that arise from the permitted activity; and recognize that by signing this application, I agree to complete all aspects of the project as authorized. I understand that failure to comply with the foregoing may result in violation of the 10 VSA Chapter 50, § 1455, and the Vermont Agency of Natural Resources may bring an enforcement action for violations of the Act pursuant to 10 V.S.A. chapter 201.

Applicant/Applicator Signature: James P. Sanders, Pres. Date: 3/18/24

H. Application Preparer Certification (if applicable)

As APPLICATION PREPARER, I hereby certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Application Preparer Signature: Solitude Lake Mgmt Date: 3/19/24

I. Application Fees

Refund Policy:
Permit Review Fees are non-refundable unless an application is withdrawn prior to administrative review.

Print Form

Submit this form and the $75 or $500 fee to:

Vermont Department of Environmental Conservation
Watershed Management Division
Aquatic Nuisance Control Permit Program
1 National Life Drive, Davis 3
Montpelier, VT 05620-3522

Municipalities are exempt and do not need to submit fee.

Direct all correspondence or questions to the Aquatic Nuisance Control Permit Program at: ANR.WSMDShoreland@vermont.gov
For additional information visit: https://dec.vermont.gov/

1 The application fee for the aquatic pesticide Aquashade® and copper compounds used as algaecides is **$50** per application.

2 Any landowner applying to use a pesticide for aquatic nuisance control on a pond located *entirely* on the landowner's property is exempt from the Long-range Management Plan requirement, as per 10 VSA §1455(e)

VERMONT
Department of Environmental Conservation

OFFICIAL NOTICE

Hello Neighbor,

This letter is an official notice that Lake St. Catherine Association intends to apply for one or more permits from the Agency of Natural Resources, Department of Environmental Conservation (DEC). Because your property borders the location of the activity as described below, Vermont law requires the applicant to provide you with notice of the application(s).

Once each application has been submitted and deemed complete by DEC to begin the review, it will be posted to the DEC Environmental Notice Bulletin (ENB) at ENB.VERMONT.GOV, where you may register to receive notifications to stay informed as each application moves through the review process. Although the application(s) may not yet be received or processed by the DEC upon receipt of this letter from the applicant below, you may register now to receive notifications using a specified mile/distance radius from your address location *(see next page for detailed instructions on how to register).*

In the meantime, you may also contact the property owner/applicant with questions about the activity using the contact information provided below. For background, the permit process includes a public comment period and an opportunity to request a public meeting, all which can be done through the ENB link above once permit applications are posted. Note that to appeal a final permit decision you must submit comments during the public comment period.

For additional information please visit the following website: DEC.VERMONT.GOV/PERMITS/ENB/GENERAL. For general questions or assistance with registering on the ENB please call DEC's main line at (802) 828-1556 and plan to provide the permit types that are being applied for as listed below.

PROPERTY OWNER(S)/APPLICANT(S) NAME

Lake St. Catherine Association

PROPERTY OWNER(S)/APPLICANT(S) CONTACT INFORMATION (MUST PROVIDE TELEPHONE NUMBER AND/OR EMAIL)

802-287-6027 or info@lakestcatherine.org

PROPOSED ACTIVITY STREET ADDRESS/ROUTE

Lake St. Catherine, Lily Pond and Little Lake St. Catherine

PROPOSED TOWN(S)

Wells and Poultney

PERMIT TYPE(S) (INDICATE FOR EACH PERMIT TYPE NEW OR RENEWAL)

Application for use of Pesticides / Aquatic Nuisance Control Permit (renewal)

VERMONT
Department of Environmental Conservation

To register on the ENB and set up your subscription: please go through the following steps. There are illustrated instructions on Page 12 of the ENB User Guide:

1. Go to ENB.VERMONT.GOV
2. Click **Register** on the upper right-hand side of the home page
3. Enter the required information (name, email address and create password) and click Register
4. You will receive an email confirmation for your email address. Once confirmed you will be able to log-in and set up your subscription.
5. Log into ENB and then click **My Subscription** at the top left-hand side of the home page
6. Click **Modify Alerts** on the My Subscription page
7. Click **Edit** for Alert #1
8. Choose the permits being applied for from the **Activity Types of Interest** list by checking the check boxes.
9. Next, choose the location using **Distance from a Point** and click the map icon to set your location.
10. Enter your own address, including Town in the **Search Address** field and set the distance large enough to capture the project activity (1 mile, 5 miles, etc.)
11. Click **OK** once the radius has been set
12. Click **SAVE** on the next page, then Click **OK** to return the main subscription page.
13. Once you receive an alert for an activity, you can choose to **Follow** the activity from your subscription page.
14. For additional instructions see the **User Guide** on ENB.VERMONT.GOV.
15. For help with registration please contact the ENB Administrator: ANR.ENBAdministrator@vermont.gov.

To learn more about the Lake St. Catherine Association's Milfoil Control Program, please visit our website:
https://lakestcatherine.org/milfoil-control-program

APPENDIX A

Detailed Project Description

EXECUTIVE SUMMARY

Non-native and invasive Eurasian watermilfoil has infested the Lake St. Catherine system for over four decades. An integrated management program utilizing aquatic herbicides, diver-assisted suction harvesting (DASH) and hand-pulling was initiated in 2004. A one-time treatment with Sonar (fluridone) herbicide was performed in 2004. Regrowth was then managed in the first instance through the use of diver-assisted suction harvesting (DASH) and hand-pulling along with spot-treatments of Renovate (triclopyr) herbicide as required between 2006 and 2018. After ProcellaCOR™ EC received its full aquatic registration from EPA in February 2018 and was registered for use in Vermont, it became the preferred herbicide for selective management of Eurasian watermilfoil in Vermont and it was used in Lake St. Catherine between 2019 and 2022. No treatment was performed in 2023. Results of the ProcellaCOR EC herbicide treatments performed in the Lake St. Catherine system have been very favorable, both from an efficacy and selectivity standpoint, which has been documented by the comprehensive surveys conducted annually. Impacts to native aquatic plants have been minimal, with complete recovery seen within one growing season.

The current permit for Eurasian watermilfoil management in Lake St. Catherine (ANC Permit Number: 2770-ANC-C) is due to expire on June 11, 2024. This new permit application is essentially a request to continue the same integrated management program. Eurasian watermilfoil growth will continue to be monitored annually, and managed in the first instance using DASH and hand-pulling where applicable. The program objective is to limit the use of ProcellaCOR EC to areas where DASH and hand-pulling cannot be used as the sole tool to control Eurasian watermilfoil. Consistent with past herbicide applications on Lake St. Catherine, ProcellaCOR EC will be applied at rates between 2-5 PDUs (prescription dose units). The dose will be dependent on the size and configuration of areas requiring treatment, the potential for dilution from untreated water, and the proximity of non-target native species that have shown impact to prior ProcellaCOR EC applications in Vermont lakes. Specific efforts will be made to avoid treatment in any areas of the lake with significant populations of sensitive native species (e.g. coontail, watershield, waterlilies), state-protected species or mapped freshwater wetland areas. The total area proposed for treatment will not exceed 80-acres in any given year and will fall well below the previously established treatment threshold of less than 40% of the vegetated littoral zone of the lake.

INTRODUCTION

Lake St. Catherine is a 1088-acre waterbody located in Wells and Poultney, Vermont. The three main basins from north to south include: Lily Pond 22 acres, Main Basin of Lake St. Catherine 904 acres, and Little Lake 162 acres. Presence of the invasive aquatic plant Eurasian watermilfoil (*Myriophyllum spicatum*) was first confirmed in the lake system by the State in 1983. Mechanical

harvesting became the primary management tool that was used for nearly 20 years until it was determined it was not providing sufficient control, and was contributing to the spread of Eurasian watermilfoil within the Lake St. Catherine system. Surveys and planning for an integrated Eurasian watermilfoil control program began in 2001. A one-time Sonar (fluridone) herbicide treatment was permitted and performed in 2004. Since that initial treatment, integrated efforts to manage Eurasian watermilfoil regrowth that have been employed include: diver-assisted suction harvesting (DASH), volunteer hand-harvesting and milfoil fragment collection, boat ramp monitoring and spot-treatments with Renovate (triclopyr) and ProcellaCOR EC (florpyraxafen-benzyl) herbicides when required.

Objectives of the program have been to utilize a combination of strategies to achieve nuisance-level control of Eurasian watermilfoil, preserve a healthy and diverse native plant community and to maintain desired open-water conditions. LSCA has also made a concerted effort to limit herbicide use to areas where Eurasian watermilfoil cannot be managed by relying solely on DASH and hand-harvesting efforts.

CURRENT CONDITIONS

Comprehensive aquatic plant surveys have been performed annually since 2004, providing a detailed data set for management activities performed over the past two decades. Since 2019 when ProcellaCOR EC started being used for the spot-treatment work, Eurasian watermilfoil presence has remained low, while the native plant diversity and biomass have flourished. The 2023 survey performed by Arrowwood Environmental (attached), documented extensive native plant growth throughout the lake and the highest count of native species encountered since the project began.

Eurasian watermilfoil (EWM) is widely distributed throughout Lake St. Catherine with biomass ranging from sparse to dense throughout the littoral area. The frequency of occurrence of EWM at the established survey points only increased from 17% to 19% in 2023, despite the fact that no herbicide treatment was performed. Arrowwood Environmental identified approximately 125 acres that supported EWM growth throughout the lake, described as follows: 80% sparse, 16% moderate, 3% moderate-dense, 1% dense.

OBJECTIVES/GOALS

Consistent with the last permit application, the principal components of the integrated management plan being proposed by LSCA's Milfoil Control Program over the next five-year period that are focused on effectively controlling invasive Eurasian watermilfoil growth, preserving a diverse native plant community, improving fish and wildlife habitat, supporting

recreational use of the lake, and preventing the establishment of other non-native and invasive species include the following:

1. 'Stop The Spread' education and outreach. Our 'Stop The Spread' campaign educates boaters and property owners on best practices to limit the spread of milfoil. Each year, the LSCA holds a lake community meeting to discuss the control plan for the season, answer questions, and hand out a flyer with best practices for lake users to limit the spread of milfoil.

2. Volunteer milfoil cleanup. Throughout the season, we organize volunteers to collect detached floating milfoil from the lake and deposit it on our designated drop off platforms. The milfoil is then picked up from the platforms and disposed of. We also encourage boaters and property owners to remove any milfoil they see in the lake while boating or on their shoreline.

3. DASH - Diver Assisted Suction Harvesting. Our DASH crew suits up in scuba gear and hand-pulls milfoil by the roots from the lakebed. In sections of lower milfoil density, they will swim the area and hand-pull with mesh bags. In higher density areas, they will set up the DASH equipment which allows them to suction the hand-pulled milfoil up through a tube to a catch table on a boat. Milfoil is then placed in 17.5 gallon buckets for transport off the lake.

4. Herbicide spot treatments with ProcellaCOR EC. In order to maximize our DASH crew's time, effectiveness, and number of acres covered, one of our control methods includes spot treatments of moderate to dense areas with the herbicide ProcellaCOR EC.

5. Water quality improvement programs. Although not directly related to Milfoil Control, the LSCA's work on Lake Wise on LSC, the LSC Stormwater Master Plan, and the LSC Watershed Action Plan all help to limit phosphorus and other nutrients from entering the lake which can contribute to excessive plant growth, while improving overall water quality.

PROCELLACOR™ EC HERBICIDE TREATMENT PLAN

After receiving its full aquatic registration from the EPA in February 2018, ProcellaCOR™ EC has been used in numerous locations throughout the country for control of milfoil species and other susceptible, invasive aquatic plants. Since 2018 in New England alone, SŌLitude has applied ProcellaCOR EC on dozens of lakes in all six New England states for the control of Eurasian watermilfoil (*Myriopyllum spicatum*) and variable milfoil (*Myriophyllum heterophyllum*).

In Vermont, ProcellaCOR EC has replaced Sonar (fluridone) and Renovate (triclopyr) for EWM control and has been the only herbicide permitted and applied over the past several years due to its efficacy, selectivity, rapid half-life and favorable toxicology profile. Results of ProcellaCOR

EC treatments performed in Vermont to date have been positive, achieving nearly complete control (>95% biomass reduction) of targeted EWM growth during the year of treatment, with little or no impact to non-target native plants. Documentation on the selectivity of ProcellaCOR EC at Vermont projects has been provided to VT DEC annually, and it has proven to be more selective for EWM control in Vermont lakes than past treatment programs where fluridone and triclopyr were used.

Recently issued ProcellaCOR EC herbicide permits issued by DEC for other Vermont Lakes are conditioned such that a maximum of 40% of the littoral zone can be managed in any one calendar year. This management includes the use of DASH, bottom barriers and/or herbicide, but excludes hand-pulling as that can be done at any time without a permit. The 40% management limitation to the littoral zone of a given waterbody is a protective measure that DEC has instituted in order to minimize any significant impacts to the waterbody as a resource to all of its users. Additionally, the 40% threshold allows for wildlife habitat to remain protected. For example, EWM is not an ideal fish habitat, but if few native aquatic plant species are present within the respective waterbody, then EWM is likely providing habitat. As such, the intention is not to impact the entire habitat in order to maintain an appropriate balance within the system; a compromise. Based on ProcellaCOR EC's reduced risk profile issued by the US EPA and its overall brief presence within the water (24-48 hours maximum; reported photolytic half-life is 0.07 days or 1.68 hours), there are no cumulative adverse impacts anticipated to affect the lake as a resource for its users.

Use of this herbicide is intended to supplement LSCA's current integrated, long range management program outlined in the Purpose section. Non-chemical techniques including DASH and hand-harvesting will be the first line of defense and will be focused on smaller and more widely scattered patches of EWM. The program's objective is to limit herbicide treatment l only to target areas of moderate to dense EWM growth that cannot be managed solely by non-chemical techniques.

The treatment program being proposed in Lake St. Catherine over the next five-year period may include treatment of up to 80 acres of EWM growth annually, which is well below 40% of the littoral zone. ProcellaCOR EC herbicide would be applied once during a particular year in which it is to be used; however, the control method (i.e. DASH, hand-harvesting, ProcellaCOR EC, etc.) that is the most appropriate for use will be determined based on the EWM density and distribution, presence of sensitive species or wetlands and other factors. Based on past experience, treated areas are expected to experience multiple years of nuisance-level control. However, it is understood that any fragments entering the treated area(s) from unmanaged areas elsewhere in the lake may allow for the population to be reestablished within that area. Thus, diligent control and spread prevention measures, as LSCA has already undertaken and will continue, must be taken by all lake users in order to mitigate future spread potential at Lake St. Catherine as well as within other waterbodies nearby.

The treatment program is expected to follow the following timeline and protocol:

Date	Task
May - June	● Early season survey to develop final treatment map. ● Submission of map and specific treatment plans to DEC for review and approval. ● Perform required pre-treatment notifications.
June - August	● Schedule and conduct ProcellaCOR™ EC herbicide treatment
July – September	● Surveys / inspections and sampling
November	● Submission of annual report identifying preliminary plans for upcoming year
December / January	● Project review and meeting with DEC, as necessary

Based on the recent treatment experiences with ProcellaCOR EC herbicide at other New England lakes and from SePRO Corporation manufacturer input, the following protocols are recommended for the proposed ProcellaCOR EC treatment at Lake St. Catherine in 2024 and future years, as needed:

1. Formulation – ProcellaCOR™ EC aquatic herbicide, liquid formulation.

2. Application – A solution of ProcellaCOR™ EC diluted with lake water would be prepared in a mixing tank onboard the treatment boat and the solution will be evenly injected throughout the designated treatment areas using trailing drop hoses and a calibrated pumping system. This is a sub-surface injection.

3. Timing – Treatment would be scheduled for anytime between early June and mid-late August (temperature dependent),when there is sufficient EWM growth to maximize herbicide uptake.

4. Rate – The recommended application rate (dose) is based on the percentage of the waterbody being treated and the susceptibility of the target plant. EWM has proven to be especially susceptible to ProcellaCOR™ EC allowing for low application rates to be used. The EPA label allows for application of 25 Prescription Dose Units (PDUs) per acre-foot of water being treated. Based on the high susceptibility of EWM, the standard recommended application rate for Lake St. Catherine is 2-3 PDUs per acre-foot. The 3 PDU application rate is only 12% of the EPA's maximum allowable application rate listed on the product label. Should smaller-scale maintenance treatments be required, the

application rates may increase to 4-5 PDU's to overcome the effects of dilution, but rates higher than 5 PDU per acre foot will not be proposed to ensure selectivity.

This treatment strategy has been employed at Lake St. Catherine and all of the other Vermont lakes in recent years. All of the aforementioned projects were conducted in the same way that the Lake St. Catherine project is proposed under this application.

Herbicide	**ProcellaCOR™ EC** Liquid formulation EPA Reg. No.: 67690-80 Active Ingredient: florpyrauxifen-benzyl 2.7% 1 PDU is equal to 3.2 fl. oz.
Application Rate	Up to 3 PDU per acre-foot
Treatment Area	Up to 80 acres per year * *Actual acreage to be finalized based on the results of late and early season surveys.*
Target Concentration	1 PDU of ProcellaCOR™ EC (3.2 fl. oz) achieves 1.93 ppb/acre foot The proposed standard application rates of 2-3 PDU/ac-ft will result in concentrations of 3.86-5.79 ppb within the treated areas. The maximum proposed use rate of 5 PDU/ac-ft equals 9.65 ppb.
Treatment Timing	Between early June and late August Delay treatment until there is sufficient active EWM growth to maximize herbicide uptake.
Method of Application	The liquid formulation will be diluted with lake water and evenly applied throughout the designated treatment areas using a calibrated pumping system and trailing drop hoses. GPS systems with WAAS or differential accuracy will be used to provide real-time navigation and to ensure that the herbicide is evenly applied throughout the designated treatment areas.

IMPACTS TO NATIVE PLANT COMMUNITY AND WILDLIFE

Excellent selectivity and minimal impact to non-target species has been demonstrated with ProcellaCOR EC treatments that have been performed in Vermont and the Northeast to date. Based on the list of macrophytes reported in the Lake St. Catherine system, the only plants that may show impact following treatment are coontail (*Ceratophyllum demersum*), watershield (*Brasenia schreberi*), yellow waterlily (*Nuphar variegata*) and white waterlily (*Nymphaea odorata*).

Coontail is typically not impacted by ProcellaCOR EC treatments except when using rates of 4 or more PDUs per ac-ft. Watershield, white and yellow water lilies may show some discoloration and twisting, depending on their proximity to the treatment area(s), before outgrowing the symptoms and recovering as a population. In treatments performed by SŌLitude since 2018, lily species have typically grown out of the symptoms after a period of several weeks or months, and returned to pre-treatment densities within one growing season.

State protected (rare or uncommon) plant species reported in Lake St. Catherine in 2023 included:

Latin Name	**Common Name**	**S-Rank**	**Plant Family**
Ceratophyllum echinatum	hornwort	S2S3	Ceratophyllaceae
Najas gracillima	slender naiad	S2	Hydrocharitaceae
Isoetes tuckermanii	tuckerman's quillwort	S1	Isoetaceae
Utricularia gibba	humped bladderwort	S3	Lentibulariaceae
Utricularia minor	lesser bladderwort	S3	Lentibulariaceae
Potamogton strictifolius	wire-stemmed pondweed	S2S3	Potamogetonaceae
Ranunculus aquatilis	white water-crowfoot	S3	Ranunculaceae

Even though none of the species listed above are expected to be susceptible to the proposed low rates of ProcellaCOR EC, efforts will be made to intentionally avoid areas where sensitive native species (e.g. coontail, watershield, waterlilies) or state protected species are known to be present and in areas where there are state mapped wetlands. This approach has already been followed in past years by avoiding treatment in portions of Lily Pond and Little Lake. This practice will be continued and If treatment is needed adjacent to these areas, then lower application rates (no more than 3 PDU) will be proposed and applied.

As a result of the timeframe of decomposition, and minimal amount of area to be managed utilizing ProcellaCOR EC relative to the overall waterbody acreage, there is no additional concern for an increase of available nutrients to stimulate an algal bloom beyond what may be present in any one given year at a waterbody of Lake St. Catherine's size and nature.

The permit application is anticipated to be conditioned to limit EWM management (all herbicide use, diver-assisted suction harvesting, and benthic barrier use) to 40% of the littoral zone. The 40% threshold was established by DEC to maintain and protect existing fish and wildlife habitat,

as a result, the habitat will not be changed significantly enough to be permanently changed. Overall, EWM is not a beneficial habitat for fish for a variety of reasons.

Based on the ecotoxicological testing completed for ProcellaCOR EC, there was no toxicity observed for avian, fish, or other species exposed to the product during both short and long-term studies. It should be noted that these testing efforts included higher concentrations than even those available at the maximum label rate.

WATER USE RESTRICTIONS AND NOTIFICATIONS

Water Use Restrictions – The only water use restrictions listed on the current ProcellaCOR EC label are all centered around the use of ProcellaCOR EC treated water for irrigation purposes. There are no restrictions on using ProcellaCOR EC treated water for drinking water, swimming or fishing.

However, it is anticipated that Vermont DEC will condition the permit similarly to others issued for ProcellaCOR EC use in 2019-2023; on the day of treatment and out of an abundance of caution, no use of the treated waterbody and associated outlet stream up to one mile downstream is recommended for any purpose, including swimming, boating, fishing, irrigation, and all domestic uses. Additional advisories and recommendations related to irrigation and the use of treated waters are to follow what is listed on the ProcellaCOR EC label.

Irrigation restrictions vary depending on what is being irrigated. Turf may be irrigated immediately after treatment without restriction. Irrigation of landscape vegetation and other non-agricultural plants can occur once ProcellaCOR EC concentrations are determined to be less than 2 ppb or by following a waiting period that is 7 days for the use rates being proposed.

Based on sample results of prior ProcellaCOR EC applications in Vermont, it is not anticipated that this product will travel downstream through the outlet.

Based on prior ProcellaCOR EC application review in Vermont, the Vermont Department of Health had issued a favorable drinking water review for this product, which states application according to the label would pose a negligible risk to public health. It is anticipated the agency's review for this application for Lake St. Catherine will be similar.

Written Notification – In accordance with the Vermont DEC permit conditions, all direct waterfront abutters of the treated waterbody and up to one mile downstream will be notified in writing by USPS mail. This will include notification of permit application submission and prior to any herbicide treatment, which will occur two weeks in advance of the date of treatment.

Posting – In accordance with VT DEC permit requirements, the adjacent shorelines and access points to the lake will be posted with signage warning of the pending herbicide application and

water use recommendations to be imposed. The signs will include language specified by VT DEC for this purpose. The signage will be the source of information for the specific treatment areas and water use restrictions and will include the website(s) where additional treatment information can be accessed.

SURVEYS AND MONITORING

Consistent with other Five-Year Integrated Management Plans for Vermont waterbodies and existing efforts undertaken by the LSCA, the organization proposes to continue the comprehensive late season aquatic plant survey as conditioned in the permit. By conducting annual survey efforts, changes in EWM and native aquatic plant species distributions and densities can be tracked effectively to align management efforts for the following season. In addition, an interim, one month post-treatment survey will be conducted to assess ProcellaCOR EC efficacy.

NON-CHEMICAL CONTROL PROGRAM

LSCA remains committed to continuing with non-chemical control techniques as being the first line of defense as part of this integrated EWM management program. Non-chemical techniques to be considered and used as required include the following:

- Suction harvesting
- Scuba diver hand-harvesting
- Snorkel hand-pulling (volunteer)
- Volunteer cleanup of EWM fragments with designated drop-off areas
- Volunteer monitoring
- Education outreach efforts
- Boat ramp monitoring

The LSCA also remains committed to responsible and practical watershed management protection measures.

Use of herbicides are intended to supplement the LSCA's proposed EWM management program that relies on DASH and hand-harvesting, in addition to diligent monitoring efforts. Herbicide treatments will be used as the last choice to target areas of moderate to dense EWM growth, while the non-chemical techniques will be utilized on smaller and more widely scattered patches. The overall program objective is to limit the distribution and abundance of EWM, preserve the native plant community and to minimize herbicide use.

5-YEAR EURASIAN WATERMILFOIL MANAGEMENT PROGRAM BUDGET ESTIMATES

Project cost estimates for the Five-Year Eurasian Watermilfoil Management Program being proposed at Lake St. Catherine is provided in the following table. Please note that these are estimates and are subject to the availability of funds.

Estimated Program Costs – 2024 dollars	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Description	2024	2025	2026	2027	2028
Herbicide treatment	$ 75,000	$ 75,000	$ 80,000	$ 80,000	$ 85,000
Suction harvesting	$ 55,000	$ 55,000	$ 55,000	$ 60,000	$ 60,000
Permitting	$ 2,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500
Monitoring	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500
Notification (mailings, signs, etc.)	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000
LSCA projected expenses for various tasks (e.g., salaries, taxes, supplies, equipment, storage)	$ TBD	$ TBD	$ TBD	$ TBD	$ TBD
Totals	**$ 142,000**	**$ 141,000**	**$ 146,000**	**$ 151,000**	**$ 156,000**

APPENDIX B

Maps

Site Locus

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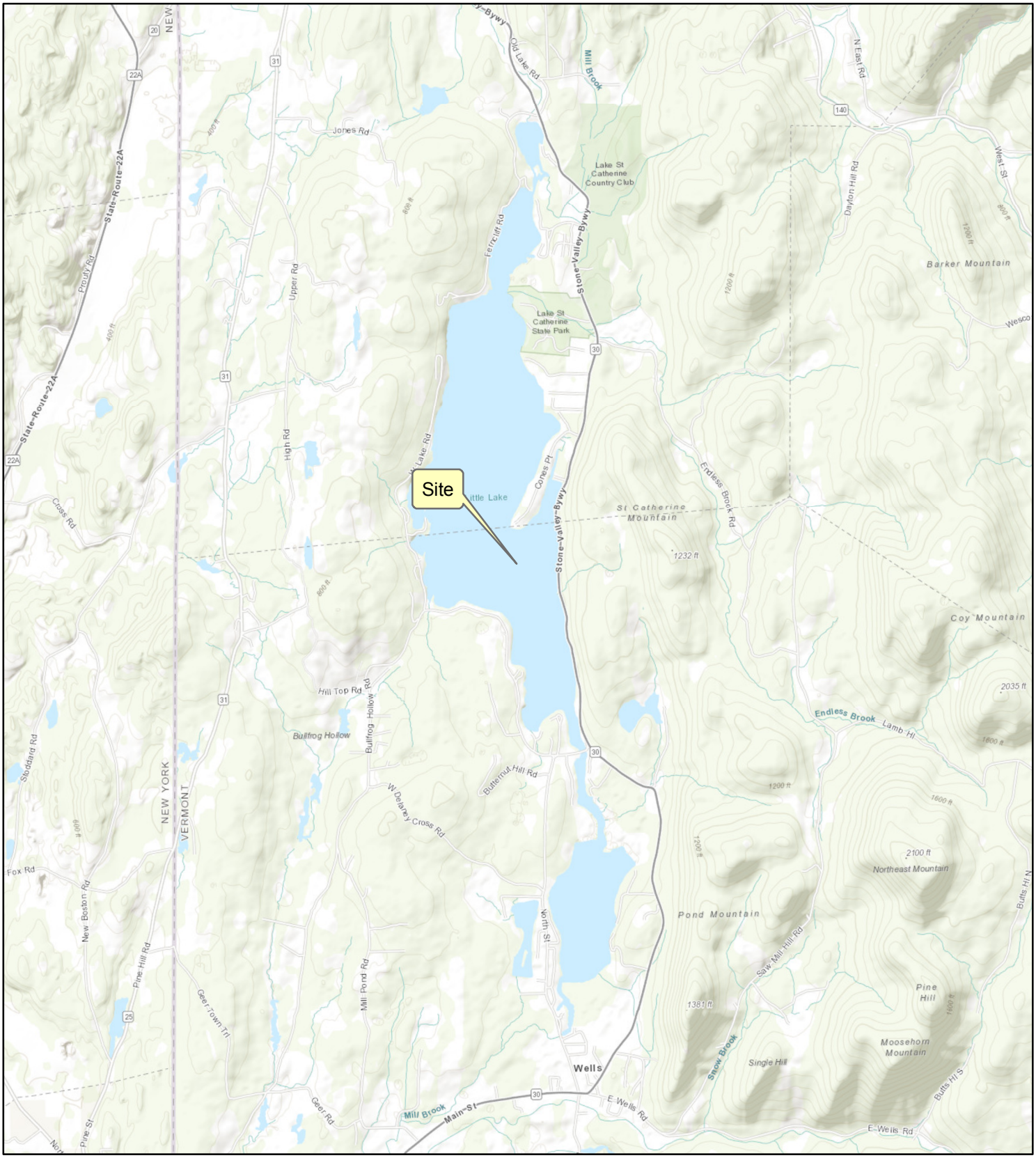

Lake St. Catherine
Wells / Poultney, VT
Rutland County
43.4657° N, 73.2146° W

Lake St. Catherine

0 4,000 8,000 Feet

1:48,000

N

Map Date: 11/29/18
Prepared by: KS
Office: Shrewsbury, MA

Littoral Zone

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LAKE MANAGEMENT
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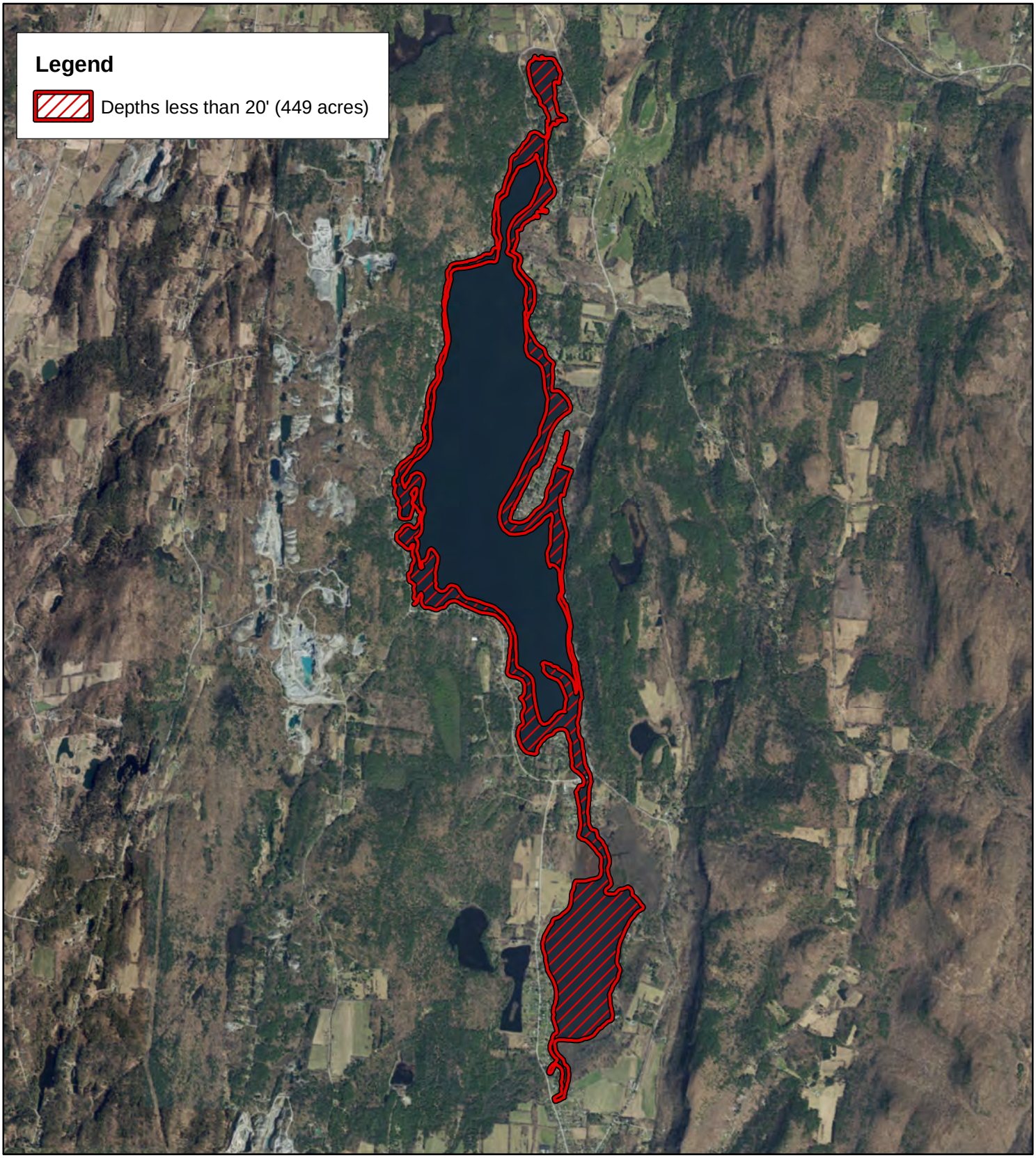
solitudelakemanagement.com



Lake St. Catherine
Wells / Poultney, VT
Rutland County
43.4657° N, 73.2146° W

Lake St. Catherine

0 3,500 7,000 Feet

N

1:42,068

Map Date: 02/26/19
Prepared by: KS
Office: Shrewsbury, MA

Proposed 2024 Management Areas

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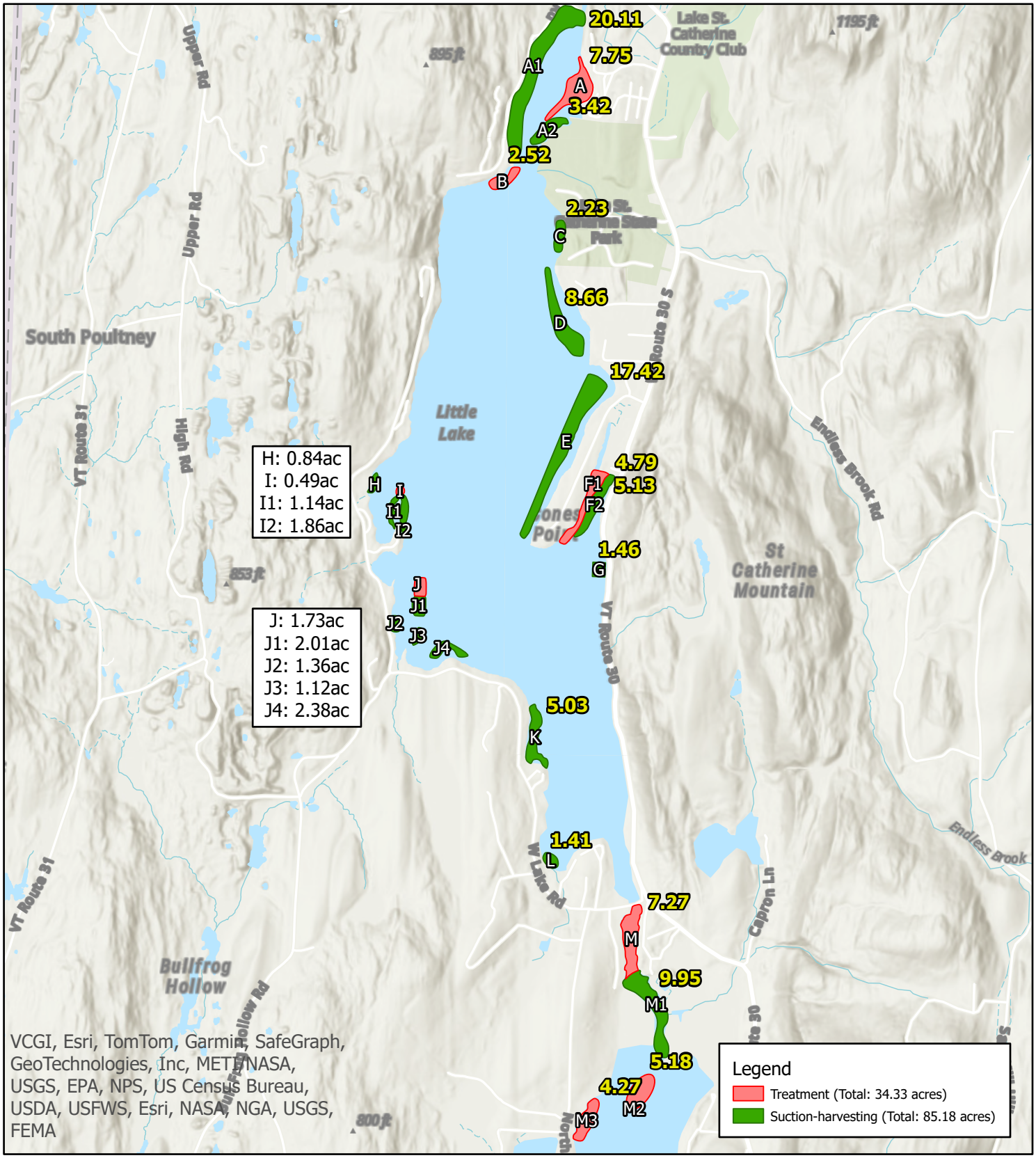

Lake St. Catherine
Wells/Poultney, VT
Rutland County
43.4657° N, 73.2146° W

Lake St. Catherine

0 2,000 4,000
Feet
1:30,214

N

Prepared by: SB
Office: SHREWSBURY, MA

APPENDIX C

ProcellaCOR EC Product Label & SDS

SAFETY DATA SHEET

ProcellaCOR EC

Section 1. Identification

GHS product identifier : ProcellaCOR EC

Recommended use of the chemical and restrictions on use

Identified uses : End use herbicide product

EPA Registration No. : 67690-80

Supplier's details :
SePRO Corporation
11550 North Meridian Street
Suite 600
Carmel, IN 46032 U.S.A.
Tel: 317-580-8282
Toll free: 1-800-419-7779
Fax: 317-580-8290
Monday - Friday, 8am to 5pm E.S.T.
www.sepro.com

Emergency telephone number (with hours of operation) **INFOTRAC - 24-hour service 1-800-535-5053**

The following recommendations for exposure controls and personal protection are intended for the manufacture, formulation and packaging of this product. For applications and/or use, consult the product label. The label directions supersede the text of this Safety Data Sheet for application and/or use.

Section 2. Hazards identification

Hazard classification: This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other hazards: No data available.

Section 3. Composition/information on ingredients

Chemical nature: This product is a mixture.

Component	CASRN	Concentration
Florpyrauxifen-benzyl	1390661-72-9	2.7%
Ethylhexanol	104-76-7	2.1%
Methanol	67-56-1	0.9%
Balance	Not available	94.3%

Section 4. First aid measures

Description of first aid measures

General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

Section 5. Fire-fighting measures

Suitable extinguishing media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen fluoride. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred

because uncontrolled water can spread possible contamination. Do not use direct water stream. May spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Spills or discharges to natural waterways are likely to kill aquatic organisms. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact SePRO Corporation for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

Section 7. Handling and storage

Precautions for safe handling: Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

Section 8. Exposure controls/personal protection

Control parameters: Exposure limits are listed below, if they exist.

Component	Regulation	Type of Listing	Value/Notation
Ethylexanol	Dow IHG	TWA	2 ppm
	Dow IHG	TWA	SKIN
Methanol	ACGIH	TWA	200 ppm
	ACGIH	STEL	250 ppm
	OSHA Z-1	TWA	260 mg/m^3 200 ppm
	ACGIH	TWA	SKIN, BEI

ACGIH	STEL	SKIN, BEI
CAL PEL	C	1,000 ppm
CAL PEL	PEL	260 mg/m^3 200 ppm
CAL PEL	STEL	325 mg/m^3 250 ppm

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Neoprene. Polyethylene. Ethyl vinyl alcohol laminate (“EVAL”). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber (“latex”). Nitrile/butadiene rubber (“nitrile” or “NBR”). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Section 9. Physical and chemical properties

Appearance	
Physical State	Liquid
Color	Amber
Odor	Solvent
Odor Threshold	No data available
pH	4.24 (1% aqueous suspension)
Melting point/range	Not applicable to liquids
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	> 100 °C (> 212 °F)
Evaporation Rate (Butyl Acetate =1)	No data available
Flammability (solid, gas)	Not applicable
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor pressure	0.0000002 mmHg at 20°C (68°F)
Relative Vapor Density (air = 1)	No data available

Relative Density (water = 1)	0.93
Water solubility	0.015 mg/l at 20°C (68°F)
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	260°C (500 °F)
Decomposition temperature	No data available
Dynamic Viscosity	15.4 mPa.s at 20°C (68°F) 8.90 mPa.s at 40°C (104°F)
Kinematic Viscosity	14.2 mm^2/s at 20°C (68°F) 7.91 mm^2/s at 40°C (104°F)
Explosive properties	Not explosive
Oxidizing properties	Not oxidizing
Liquid Density	0.9257 g/cm3 at 20 °C (68 °F) *Digital density meter*
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

Section 10. Stability and reactivity

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: None known.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen chloride. Hydrogen fluoride. Nitrogen oxides.

Section 11. Toxicological information

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
As product: LD50, Rat, female, > 5,000 mg/kg

Acute dermal toxicity Prolonged skin contact is unlikely to result in absorption of harmful amounts.
As product: LD50, Rat, male and female, > 5,000 mg/kg

Acute inhalation toxicity No adverse effects are anticipated from single exposure to mist. Based on the available data, respiratory irritation was not observed.
As product: LC50, Rat, male and female, 4 Hour, dust/mist, > 5.40 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation Brief contact may cause slight skin irritation with local redness.

Serious eye damage/ eye irritation May cause slight eye irritation. Corneal injury is unlikely.

Sensitization Did not cause allergic skin reactions when tested in guinea pigs. For respiratory sensitization: No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)	Evaluation of available data suggests that this material is not an STOT-SE toxicant.
Specific Target Organ Systemic Toxicity (Repeated Exposure)	For the active ingredient(s): Based on available data, repeated exposures are not anticipated to cause significant adverse effects. For the major component(s): Based on available data, repeated exposures are not anticipated to cause significant adverse effects. For the minor component(s): In animals, effects have been reported on the following organs: Blood, kidney, liver, and spleen.
Carcinogenicity	For the active ingredient(s): Did not cause cancer in laboratory animals. For the major component(s): No relevant data found.
Teratogenicity	For the active ingredient(s): Did not cause birth defects or any other fetal effects in laboratory animals. For the major component(s): No relevant data found. For the minor component(s): Has caused birth defects in laboratory animals only at doses toxic to the mother. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. These concentrations exceed relevant human dose levels.
Reproductive toxicity	For the active ingredient(s): In animal studies, did not interfere with reproduction. For the major component(s): In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.
Mutagenicity	In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.
Aspiration Hazard	Based on physical properties, not likely to be an aspiration hazard. No aspiration toxicity classification

Section 12. Ecological information

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish	Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L). EC50, *Cyprinus carpio* (Carp), static test, 96 Hour, > 120 mg/l, OECD Test Guideline 203 or Equivalent
Acute toxicity to aquatic invertebrates	Material is slightly toxic to aquatic invertebrates on an acute basis (LC50/EC50 between 10 and 100 mg/L). EC50, *Daphnia magna* (Water flea), 48 Hour, 49 mg/l, OECD Test Guideline 202
Acute toxicity to algae/aquatic plants	Material is very highly toxic to some aquatic vascular plant species. ErC50, *Pseudokirchneriella subcapitata* (green algae), 72 Hour, > 5.4 mg/l, OECD Test Guideline 201 ErC50, *Myriophyllum spicatum*, 14 d, 0.000919 mg/l NOEC, *Myriophyllum spicatum*, 14 d, 0.0000954 mg/l

Toxicity to Above Ground Organisms

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, *Colinus virginianus* (Bobwhite quail), > 2500mg/kg bodyweight.

oral LD50, *Apis mellifera* (bees), 48 Hour, > 212.2µg/bee

contact LD50, *Apis mellifera* (bees), 48 Hour, >200µg/bee

Toxicity to soil-dwelling organisms

LC50, *Eisenia fetida* (earthworms), 14 d, mortality, >2,500 mg/kg

Persistence and degradability

florpyrauxifen-benzyl

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
Biodegradation: 14.6 %
Exposure time: 29 d
Method: OECD Test Guideline 301B

Stability in Water (1/2-life)

Hydrolysis, DT50, 913 d, pH 4, Half-life Temperature 25 °C
Hydrolysis, DT50, 111 d, pH 7, Half-life Temperature 25 °C
Hydrolysis, DT50, 1.3 d, pH 9, Half-life Temperature 25 °C

Ethylhexanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
10-day Window: Not applicable
Biodegradation: > 95 %
Exposure time: 5 d
Method: OECD Test Guideline 302B or Equivalent
10-day Window: Pass
Biodegradation: 68 %
Exposure time: 17 d
Method: OECD Test Guideline 301B or Equivalent

Theoretical Oxygen Demand: 2.95 mg/mg

Chemical Oxygen Demand: 2.70 mg/mg

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	26-70 %
10 d	75-81 %
20 d	86-87 %

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 9.7 Hour
Method: Estimated.

Methanol

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. 10-day Window: Pass
Biodegradation: 99%
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 1.50 mg/mg

Chemical Oxygen Demand: 1.49 mg/mg Dichromate

Biological oxygen demand (BOD)

Incubation Time	BOD
5 d	72 %
20 d	79 %

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 8-18 d
Method: Estimated.

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Florpyrauxifen-benzyl

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 5.5 at 20 °C
Bioconcentration factor (BCF): 356 *Lepomis macrochirus* (Bluegill sunfish) 30 d

Ethylhexanol

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 3.1 Measured

Methanol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.77 Measured
Bioconcentration factor (BCF): <10 Fish Measured

Balance

Bioaccumulation: No relevant data found.

Mobility in soil

Florpyrauxifen-benzyl

Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient (Koc): 34200

Ethylhexanol

Potential for mobility in soil is low (Koc between 500 and 2000).
Partition coefficient (Koc): 800 Estimated.

Methanol

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 0.44 Estimated.

Balance

No relevant data found.

Section 13. Disposal considerations

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Section 14. Transport information

DOT Not regulated for transport

Classification for SEA transport (IMO-IMDG):

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (Florpyrauxifen-benzyl)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Florpyrauxifen-benzyl
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (Florpyrauxifen-benzyl)
UN number	UN 3082
Class	9
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15. Regulatory information

OSHA Hazard Communication Standard

This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Worker and Community Right-To-Know Act:

The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	**CASRN**
Ethylhexanol	104-76-7

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

United States TSCA Inventory (TSCA)

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Section 16. Other information

Hazard Rating System
National Fire Protection Association (U.S.A.)

Health: 1 Flammability: 1 Instability: 0

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
C	Ceiling
CAL PEL	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
PEL	Permissible exposure limit
SKIN	Absorbed via skin
SKIN, BEI	Absorbed via Skin, Biological Exposure Indice
STEL	Short term exposure limit
TWA	Time weighted average

History

Date of issue mm/dd/yyyy : 10/09/2017

Version : 1.0

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.