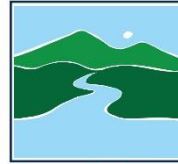


Aquatic Nuisance Control Individual Permit

Under 10 V.S.A. § 1455



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

<p>Permittees: Town of Hubbardton & Lake Beebe Watershed Association (Decision-makers) & Solitude Lake Management (Decision-makers & Operators)</p> <p>Control Activity: Pesticide (SePRO Sonar AS®)</p>	<p>Permit Number: 2016-C01</p> <p>Waterbody: Lake Beebe</p>
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Based upon the Findings contained in this permit, the Secretary of the Agency of Natural Resources (Secretary) has determined that the proposed aquatic nuisance control activity will comply with 10 V.S.A. § 1455, and is hereby approved under the following conditions and specifications.

a. Specific Conditions

1. Pesticide Use. The use of SePRO Sonar AS® (Registration Number 67690-4), a liquid formulation herbicide with active ingredient fluridone (1-methyl-3-phenyl-5-[3-(trifluoromethyl)phenyl]-4(1H)-pyridinone), is authorized in accordance with the approved treatment plan. This authorized pesticide shall be registered with the U.S. Environmental Protection Agency and the Vermont Agency of Agriculture, Food and Markets at the time of use and handled, applied, and disposed of in conformance with all state and federal regulations.
2. Certified Applicator. All applicators of the authorized pesticide shall be certified by the Vermont Agency of Agriculture, Food and Markets in Category Five – Aquatic Pest Control.
3. Treatment Plan. A final treatment plan shall be submitted to the Secretary for approval not less than one week prior to pesticide use. The treatment plan shall include the following:
 - A. A map identifying all area(s) in which pesticides will be used;
 - B. Approximate date(s) of pesticide use;
 - C. Pesticide target concentration(s); and,
 - D. Pesticide concentration monitoring locations.
4. Target Concentrations. In accordance with the approved treatment plan, the authorized pesticide may be used up to five times during the treatment year, and shall be applied in a manner to achieve and maintain the following target concentrations for at least 90 days:
 - A. 5 parts per billion (ppb) before a thermocline is established.
 - B. 5 – 8 ppb after a thermocline is established.
5. Agency Notification. Written notification to the Secretary shall be provided at least 5 days in advance of pesticide use.
6. Public Informational Notification. Prior to treatment, informational notifications shall be provided to the public of the water use advisories and recommendations as outlined below:
 - A. The informational notification shall include:
 - i. Date of the treatment;
 - ii. Herbicide to be used;
 - iii. Summary of the use advisories and recommendations (per condition 1h below);
 - iv. Map of the waterbody and treatment areas;
 - v. Statement that informational signs posted along shoreline properties and roadways will provide the exact treatment date/time and applicable use advisories and recommendations;
 - vi. Statement that bottled water may be provided by the Permittee upon request to any person restricted from using their domestic water supply (taken directly from the lake or its effluent) for drinking or for food preparation;
 - vii. Contact name(s), address(es), and telephone number(s) for all Permittees; and,

- viii. Statement informing all property owners that if their property is leased, rented or used at any time during treatment and/or while the use advisories are in effect, the property owner is responsible for properly informing all transient users.
- B. The informational notification shall be provided to all abutting property owners (including commercial camps) to Lake Beebe and within one mile of the effluent at least 15 days prior to the scheduled treatment date by one of the following:
 - i. Hand-delivery;
 - ii. Confirmation receipt electronic mail;
 - iii. Stamped, return postcard to indicate receipt;
 - iv. Sent USPS Certified Mail™ or via [Certificate of Mailing \(PS Form 3817\)](#); or,
 - v. Other methods that provides proof of notification.
- C. The informational signs shall be/posted:
 - i. In locations visible to vehicle traffic, shoreline property owners and potential lake users;
 - ii. Weather resistant and at least 8½ inches in width by 11 inches in height;
 - iii. At least two days prior to the scheduled treatment date;
 - iv. Along all public roadways approximately ~1,000 feet in the vicinity of the shoreline;
 - v. At all public and private campgrounds, hotels, inns, beaches and access points;
 - vi. At the municipal office(s); and,
 - vii. Updated immediately when water use advisories or treatment plans change; and,
 - viii. May be removed no sooner than 30 days after treatment, only the irrigation advisories remain.
- D. Copies of the aforementioned notification and signs shall be provided to the Secretary at the same time as they are made available to the public.
- E. Treatments should occur only on a Monday, Tuesday, Wednesday, or Thursday to minimize unnecessary pesticide exposure to the public over a weekend.

7. Herbicide Concentration Monitoring. Fluridone and n-methyl formamide (NMF) concentrations shall be monitored accordingly and in conformance with the approved herbicide treatment plan:
- A. At least one week prior to treatment, the Permittee shall submit to the Secretary a map of proposed sample locations for review and written approval.
 - B. The Permittee shall collect water samples or arrange for samples to be collected for the analysis of fluridone and NMF.
 - C. Water samples shall be collected for analysis 24 hours after completion of each treatment and shall be collected every 10 days thereafter until all water use advisories and recommendations no longer apply, or unless authorized by the Secretary.
 - D. Sampling shall continue after 90 days if the fluridone concentration is 5 ppb or above at any site, until the fluridone concentration falls below 5 ppb.
 - E. To the maximum extent practical, samples shall be collected within the bottom four feet of water at each sample site using appropriate equipment and techniques to collect samples at this depth.
 - F. All sampling shall begin approximately 24 hours after completion of the treatment and continue at least monthly until all sample results demonstrate fluridone is at or below 20 ppb, by laboratory analysis, at which point sampling may be discontinued.
 - G. Additional samples and sample locations, including but not limited to lake sediments and adjacent water supply wells may be required as determined by the Secretary.
 - H. Samples shall be analyzed at the SePRO Corporation laboratory (or another qualified laboratory) to analyze fluridone and NMF by the FasTEST method or approved equivalent with following detection limits: 1 ppb for fluridone and 2 ppb for NMF.
 - I. The laboratory results shall be submitted to the Secretary within 24 hours of completion.
 - J. Sampling and laboratory analysis may be discontinued with written approval from the Secretary.

8. Water Use Advisories & Recommendations. To minimize unnecessary exposure, the following water use advisories and recommendations apply:

- A. No use of the treated waterbody and associated outlet stream for one mile downstream for any purpose is recommended on the day of treatment, including but not limited to swimming, boating, fishing, irrigation, and all domestic uses.
 - B. Boating, fishing, and toilet flushing may resume on the 1st day following treatment.
 - C. Swimming may resume 24 hours following treatment.
 - D. Domestic use (other than toilet flushing) may not resume until fluridone is detected at less than or equal to 20 ppb and NMF is not detected.
 - E. If fluridone is detected in excess of 20 ppb and/or NMF is detected, then all domestic use may not resume until the above condition (a.8.D.) is met.
 - F. The above conditions apply to all treatments including booster treatments, limited to five total.
 - G. Only when all fluridone residues are confirmed to be less than or equal to 20 ppb and NMF is not detected, should full use of the treated waterbody and its outlet stream(s) resume. Until full use can be resumed, bottled water should be supplied by the Permittee to those who depend upon the treated waterbody and/or its outlet stream(s) for domestic use.
 - H. There shall be no use of water from the treated waterbody and associated outlet stream for one mile downstream for irrigation purposes, such as watering lawns, trees, shrubs or plants, for 30 days after the day of treatment or until the Secretary provides notification to the Permittee that this restriction has been lifted.
- 9.** Treatment Report. A treatment report shall be submitted to the Secretary within seven calendar days following the date of the treatment to include the following:
- A. Date, time and duration of treatment;
 - B. Herbicide manufacturer, trade name and formulation used;
 - C. Total amount of herbicide applied;
 - D. Total surface area of herbicide treatment;
 - E. Target herbicide concentration and related calculations;
 - F. Herbicide treatment technique and equipment used;
 - G. Weather and lake conditions at time of herbicide treatment; and,
 - H. Description of any problems encountered during treatment.
- 10.** Plant Surveys. A quantitative aquatic plant survey (pre-treatment) shall be conducted prior to any herbicide use. A post-treatment plant survey shall be conducted during the same year of treatment and two consecutive years thereafter. All aquatic plant surveys shall include the following:
- A. Date of survey;
 - B. Herbicide effectiveness on target plants;
 - C. Herbicide impact on nontarget plants;
 - D. Map depicting survey areas;
 - E. Description of all plant species present and their relative abundance, and;
 - F. All survey data shall be reported in a similar format to prior years.
- 11.** Annual Report. An annual report shall be submitted, on the year of treatment and two years thereafter, to the Secretary by December 1st of each year and shall include the following:
- A. Summary of all herbicide concentration monitoring;
 - B. Qualitative assessment of the status of Eurasian watermilfoil (EWM), *Myriophyllum spicatum*, growth and its distribution;
 - C. Map of the final herbicide treatment areas with EWM growth distribution and density depicted;
 - D. Description of other nuisance control activity (if any);
 - E. Status of aquatic plant re-growth in treatment areas;
 - F. Other observations and actions taken; and,
 - G. Recommendations (if any).
- 12.** Annual Meeting. The Permittee shall organize a meeting with the Secretary on the year of treatment and two years thereafter to discuss the plant surveys, annual reports, level of EWM control achieved, long-

term management plans, and other pertinent issues.

13. Approved Application. The project shall be completed as shown on the application, plans, and support documents as submitted by the permittee, and approved by this permit.

b. Standard Conditions

1. Reporting & Correspondence. All aforementioned, requisite correspondence directed to the Secretary pertaining to this permit, including notifications, surveys and reports, shall be (preferably) submitted via email to misha.cetner@vermont.gov or mailed to the following address:

Lake & Shoreland Permitting
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
2. Aquatic Invasive Species Spread Prevention. Prior to any control activity occurring, all equipment, including but not limited to boats, trailers, vehicle, and gear, that has been in or on any other waterbody, shall be decontaminated in accordance with the [Voluntary Guidelines to Prevent the Spread of Aquatic Invasive Species through Recreational Activities](#), Aquatic Nuisance Species Task Force, November 2013, or its replacement.
3. Decision-makers & Operators as Permittees. A Permittee is defined to mean any person associated with aquatic nuisance control activities (activity) (1) who performs the activity or who has day-to-day control of the activity; or, (2) any person with control over the decision to perform the activity including the ability to modify those decisions. Permittees identified as (1) are referred to in this permit as Operators while Permittees identified as (2) are referred to in this permit as Decision-makers. More than one Operator may be responsible for complying with this permit. Permittees are defined as a Decision-maker, as an Operator, or as both. When a Permittee is both a Decision-maker and an Operator, the Permittee must comply with all applicable requirements.
4. Authorization Modification or Amendment. This permit may be modified or amended upon request by the Permittee or by the Secretary. Any modification under this condition shall be performed in accordance with the [Public Review and Comment Procedures for Aquatic Nuisance Control Permit Applications and General Permits](#), January 30, 2003, or its replacement.
5. Rare, Threatened, or Endangered Species. Encounters with any rare, threatened, or endangered species shall be reported to the Secretary immediately. If determined necessary by the Secretary, an Endangered & Threatened Species Taking Permit, per 10 V.S.A. § 5408, shall be obtained prior to commencement or continuance of activity.
6. Compliance with Other Regulations. This permit does not relieve the Permittee from obtaining all other approvals and permits prior to commencement of activity, or the responsibility to comply with any other applicable federal, state, and local laws or regulations.
7. Access to Property. By acceptance of this permit, the Permittee agrees to allow representatives of the state of Vermont access to the property covered by the permit, at reasonable times, for the purpose of ascertaining compliance with Vermont's statutes, regulations, and permit conditions.
8. Legal Responsibilities for Damages. The Secretary, by issuing this individual permit, accepts no legal responsibility for any damage direct or indirect of whatever nature and by whoever suffered arising out of the approved activity.
9. Rights & Privileges. This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
10. Duty to Comply & Enforcement. The Permittee shall comply with all terms and conditions of this permit. Any permit noncompliance shall constitute a violation of 10 V.S.A. § 1455 and may be cause for any enforcement action and revocation, modification, or suspension of the permit. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the

permitted activity to maintain compliance with the conditions of this permit.

11. Duty to Reapply. If the authorized activity is anticipated to continue after the expiration date of this permit, the Permittee shall reapply for coverage under a new permit sixty (60) days prior to the expiration date of this permit.
12. Twenty-four Hour Non-compliance Reporting. Unless provided otherwise by this permit, the Permittee shall report any noncompliance which may endanger public health or the environment. Any such information shall be provided within 24 hours from the time the Permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance, its cause; the period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; as well as steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
13. Reopener. If after granting this permit the Secretary determines, at his or her discretion, that there is evidence indicating that an authorized activity does not comply with the requirements of 10 V.S.A. Chapter 50, the Secretary may reopen and modify this permit to include different limitations and requirements.
14. Appeals. Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or the appellant's attorney. The appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the Notice of Appeal in accordance with Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings available at www.vermontjudiciary.org. The address for the Environmental Division is: 32 Cherry Street; 2nd Floor, Suite 303; Burlington, VT 05401 Telephone: 802-951-1740.

c. Findings

1. Jurisdiction - 10 V.S.A. § 1455(a): Within waters of the state, no person may use pesticides, chemicals other than pesticides, biological controls, bottom barriers, structural barriers, structural controls, or powered mechanical devices to control nuisance aquatic plants, insects, or other aquatic nuisances, including lamprey, unless that person has been issued a permit by the secretary. The project, as described in Permit Application #2016-C01, involves the use of a pesticide within Lake Beebe in Hubbardton. Therefore, a permit is required for this project.
2. Application Receipt & Review: An application, prepared/submitted by the Town of Hubbardton, Lake Beebe Watershed Association, and Solitude Lake Management, was received on January 6, 2016 for an Aquatic Nuisance Control Permit for the use of SePRO Sonar AS[®] under 10 V.S.A. 1455(d). It was reviewed in accordance with the Department of Environmental Conservation's *Permit Application Review Procedure*, adopted May 22, 1996.
2. Background; Aquatic Nuisance Control Permit History: The Lake Beebe Watershed Association (LBWA) and shoreline property owners have used several control methods for EWM, including bottom barriers, diver-operated suction harvesting, and the use of pesticides. Aquatic Nuisance Control (ANC) permits #1992-B03, #1997-B02, and #2003-B02 permitted the use of a bottom barrier. ANC permit #2006-H05 permitted the use of diver-operated suction harvesting. ANC permit #2001-C06 permitted the use of pesticides, which was a whole-lake Sonar AS[®] treatment. All of the above mentioned ANC permits were issued for the control of the aquatic invasive plant Eurasian Watermilfoil (EWM), *Myriophyllum spicatum*.
3. No Reasonable Nonchemical Alternative Available – 10 V.S.A. § 1455(d)(1): An aquatic plant survey conducted in 2015 by the Darren Fresh Water Institute documented the frequency of occurrence of EWM at 69.8%. This frequency of occurrence is double the second most frequent species, the native aquatic

plant *Zosterella dubia* (34.9%), as described in the Approved Application. Based on the current extent of EWM coverage, a whole-lake treatment with Sonar AS® is a reasonable use of pesticide to minimize further establishment of EWM, to avoid additional displacement of native species, to restore navigation access and other recreational use. To date, no reasonable non-chemical alternative for the goal of reducing or controlling EWM growth in a lake-wide manner has been identified. All known non-chemical alternatives, such as bottom barriers, mechanically powered devices, biological controls, and hand-pulling have significant financial and practical limitations. This prevents these nonchemical alternatives from being reasonable lake-wide control methods.

The Secretary has determined that there is no reasonable nonchemical alternative available.

4. Nontarget Environment – 10 V.S.A. § 1455(d)(2): One rare species, *Utricularia gibba* (S3), was observed as being present in 2015 as described in the Approved Application. Two other rare species, *Potamogeton strictifolius* (S2/S3) and *Ceratophyllum echinatum* (S2/S3), have previously been observed in Lake Beebe. Neither of those species have been observed since 2004 and 2005 respectively. The Permittee will report any observation of rare, threatened, or endangered species in accordance with this permit.

To mitigate the risk of introduction or transport of non-native, aquatic invasive species proper spread prevention measures must be taken. Thus, prior to any control activity occurring, all equipment (such as a boat, trailer, vehicle, and gear) that has been in or on any other waterbody, will be decontaminated in accordance with the *Voluntary Guidelines to Prevent the Spread of Aquatic Invasive Species through Recreational Activities*, Aquatic Nuisance Species Task Force, November 2013, or its replacement.

The Secretary has determined that there is acceptable risk to the nontarget environment.

5. Public Health – 10 V.S.A. § 1455(d)(3): At the request of the Secretary, the Vermont Department of Health (VDH), Radiological and Toxicological Science Program has reviewed and provided recommendations pertaining to the risk of the proposed activity to public health, in which it examined potential concerns for public health that may be associated with exposure to Sonar AS® as well as to any potential fluridone metabolites. The recommended water use conditions are based upon review of current scientific information for potential health effects; half-life of the herbicide and inert compounds; complete dissolution rates; consideration of direct contact with treated waters and the manner in which it may occur; and, several health protective assumptions. The review also includes standard risk assessment procedures, knowledge of previous chemical control efforts, and the assumption that only one product will be applied per growing season. Based upon the VDH's evaluation and recommendations, and the resulting permit conditions, it has been determined that human exposure is not likely to result in an increase in the level of concern for public health.

The Secretary has determined that there is negligible risk to public health.

6. Long-range Management Plan – 10 V.S.A. § 1455(d)(4): A long-range management plan has been developed that incorporates a schedule of pesticide minimization that combines the initial use of a chemical treatment followed by non-chemical control methods to manage and prevent the spread of EWM. The goal of this plan is to reduce the abundance of EWM to below nuisance levels. By employing all of the components of the plan, and updating and revising it as appropriate, the LBWA is seeking to control EWM in order to restore recreational uses as well as enhance the native aquatic plant community and habitat diversity. The LBWA recognizes that eradication is not attainable, and EWM management is an ongoing undertaking. A diligent and sustained effort will be required to maintain EWM control below nuisance conditions.

The plan will achieve its goal provided that the chemical treatment is conducted in accordance with the conditions of this permit; the components of the plan are implemented and updated routinely; adequate, stable funding is maintained; and, a strong framework exists for continuing the ongoing management efforts indefinitely.

The Secretary has determined that a long-range management plan has been developed.

7. Public Benefit – 10 V.S.A. § 1455(d)(5): Based upon findings c. 3-6, the Secretary has determined that there is a public benefit to be achieved from the application of a pesticide.

8. Public Notification – 10 V.S.A. § 1455(h): An opportunity for the public to review and comment on this application was provided in accordance with the Department of Environmental Conservation’s [Public Review and Comment Procedures for Aquatic Nuisance Control Permit Applications and General Permits](#), adopted per 3 V.S.A. Chapter 25, on January 30, 2003.
9. References:
[SePRO Sonar AS® Specimen Label](#)
[SePRO Sonar AS® Material Safety Data Sheet](#)

d. Authorization

By delegation from the Secretary, the Vermont Department of Environmental Conservation has made a determination that the above activity qualifies for an individual aquatic nuisance control permit. The Permittees are authorized per 10 V.S.A. § 1455(i) subject to the conditions herein specified.

This permit shall be effective on April 22, 2015, and expire five years thereafter.

Alyssa B. Schuren, Commissioner
Department of Environmental Conservation

By: _____

Perry Thomas, Program Manager
Lakes & Ponds Management and Protection Program