

August 15, 2023

Franklin Conservation Commission  
% Ms. Breeka Li Goodlander, Agent  
355 East Central Street  
Franklin, MA 02038

**Re: Spruce Pond Aquatic Management Program Peer Review (DEP File # 159-1267)**

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Dear Ms. Goodlander:

The following document is intended to provide clarification and additional information to address the questions and concerns raised during peer review of the submitted Spruce Pond Aquatic Management Program Notice of Intent filing (DEP file # 159-1267). The document is formatted to mirror BETA's July 12, 2023 letter.

**ADMINISTRATIVE AND PLAN COMMENTS**

**A1. MassDEP has issued DEP File No. 159-1267 for the Site and provided the following technical comment "Higher value wildlife habitat is achieved when there is less than 100% open water surface and at least 30% coverage of native aquatic plant species. MassDEP recommends that treatment be limited to areas where invasive non-native species are dominant."**

Aquatic vegetation management generally focuses on maintaining a balanced native plant assemblage in order to establish and maintain optimal habitat conditions. In shallow, altered and/or constructed systems like Spruce Pond that are prone to supporting widespread macrophyte and algae growth this often requires judicious management of native species. As is the general rule for warm-water systems the goal of this program is to manage/eradicate invasive variable watermilfoil (*Myriophyllum heterophyllum*) and maintain a 20%-40% cover of native vegetation growth. As such, the attached map depicts priority management areas along with areas where no native plant management will be conducted. This should provide ample area for the propagation and proliferation of native species. Annual surveys and specific growth conditions within the priority



management zones will dictate the strategy and extent of management in any given year.

**Figure 1 - Spruce Pond Aquatic Vegetation Management Zones**



**Yellow** - Habitat Preservation Zone: 2.0 ac. (6.5 ac-ft) - Management of invasive milfoil only. No management of native plant species

**Orange** - Low Priority Management Zone: 0.72 ac. (3.6 ac-ft) - Management of all invasive plant growth and selective control of native species only when growth conditions exceed 40% areal cover.

**Red** - High Priority Management Zone: 2.53 ac. (10.12 ac-ft) - Management of all invasive plant growth and selective reduction of native species when growth conditions exceed 20% areal cover.

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**A2. Plan requirements as presented in Section 7.18 of the Franklin Wetland Bylaw**

We feel that the plan/maps and supporting information that we have provided as part of the initial filing and subsequent submissions are adequate to allow the Commission and staff to accurately review the project and the potential impacts. The plan details are commensurate with other projects across the state.

**A3. BETA assumes 228,690 SF is the accurate total area of LUW impact as shown on the WPA Form 3. It is recommended that the Applicant revise the Bylaw Resource Area Impact Summary Report Table.**

See Figure 1 (A1). Although the routine management zone has been reduced to 141,570 SF, we have left the area of disturbance at 228,690 SF as management of invasive milfoil may occur in the habitat preservation zone. A revised Resource Area Impact Summary Report Table is attached.

**A4. The Applicant has clarified how they will access the Site: however, the remainder of this comment remains unaddressed. The Applicant should disclose any staging that is required and determine the volume of herbicides to be used based on the provided application rates and areas to be treated.**

The table below outlines the requested aquatic products. There will be no staging of equipment and/or products in order to facilitate active management of target growth. All materials will be transported via pick-up truck, deployed, and retrieved on the day work is to occur.

Herbicide/ Algaecide	Target Species	Application Rate	Maximum Total Product Quantity
Fluridone	Duckweed, watermeal, fanwort, etc.	25 ppb-50 ppb	Sonar AS - 0.55 gals Sonar One - 44.0 lbs
Diquat	Variable milfoil, curly-leaf pondweed, native pondweeds, etc.	1.5 gals/acre	4.88 gals
Glyphosate	purple loosestrife, waterlily, watershield, etc.	0.75 gals/acre	2.44 gals

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Herbicide/ Algaecide	Target Species	Application Rate	Maximum Total Product Quantity
Chelated Copper	filamentous & microscopic algae	0.6 gals/ac-ft. (0.2 ppm Cu)	7.8 gals
Peroxide	filamentous algae & cyanobacteria	15 lbs/ac-ft.	195 lbs

**A5. All MSDS and product labels have been provided with the expectation of Fluridone (Sonar). Provide the additional MSDS and product label.**

The Sonar AS (liquid) SDS and EPA label are attached.

**A6. The Applicant should clarify current fertilizer types and application rates implemented by the Spruce Pond Village Association. Other Best Management Practices (BMPs) such as public pet waste disposal bins that exist onsite, or have the potential to be installed, should be discussed as documentation of pollution prevention practices that are currently in place. While it is understood that the offsite activities within the greater watershed can impact water quality, onsite nutrient loading should be minimized concurrently with the use of chemical treatments to increase efficacy and decrease the frequency of future treatments. Comment remains.**

We agree that BMPs should be a part of the Spruce Pond Village Association's overall property and pond management program. Given that it will take some time to identify current fertilization and pet waste disposal practices at a minimum, we ask that the Commission condition this project requiring the development of a staff/Commission approved BMP plan within a timeframe specified.

**A7. The Applicant has not prepared a formal monitoring plan/protocol. This document should include methods for testing pH, temperature, dissolved oxygen concentrations, turbidity, and aquatic vegetation regrowth, as well as include the frequency of pre- and post-treatment testing. The document should also include methods for collecting, compiling, and reporting the gathered data. Comment remains.**

During the course of the growing season the pond will be visited on a monthly basis and inspected to determine the aquatic plant and algae growth conditions. These routine inspections consist of aquatic plant identification, species mapping using WAAS enabled



hand-held GPS. Identified plant species will also be assigned a basic percent cover and biomass index value. These indices are outlined below.

### **Percent Cover**

- 1%-25% of the bottom covered by vegetation
- 26%-50% of the bottom covered by vegetation
- 51%-75% of the bottom covered by vegetation
- 76%-100% of the bottom covered by vegetation

### **Biomass Index (1-4)**

- 1 - subject macrophyte growth is present only in the first 25% of the water column
- 2 - subject vegetation growth is present in the first 50% of the water column
- 3 - subject vegetation growth is present in the first 75% of the water column
- 4 - subject vegetation is growing throughout the entire water column to the surface

In addition filamentous algae mats (surface & benthic) will be mapped. Secchi disk transparency readings will also be conducted.

This vegetation information will be recorded monthly during the growing season (April-September) and will be the basis for determining if active vegetation and/or algae management is required. In the event that treatment is necessary the following additional water quality monitoring will be conducted at two in-pond locations.

### **Pre-Treatment**

Immediately prior to conducting a scheduled treatment, a temperature and dissolved oxygen profile will be recorded using a YSI Pro20 in situ meter. Measurements will be collected at 1ft. intervals, including surface and bottom, throughout the water column.

pH and turbidity profiles will also be collected using an In Situ multi-meter.

### **Post-Treatment**

Two weeks following a conducted treatment the pre-treatment water column and vegetation monitoring will be replicated.

Any sampling anomalies or observed detrimental impacts will be reported to the Commission immediately. All other survey and monitoring data will be reported to the



Commission in a Year-End Report that will summarize the management work conducted and all vegetation and water quality data.

**A8. Comment resolved.**

**RESOURCE AREA AND BOUNDARY COMMENTS**

**W1. BETA observed water lilies at the northern extent of Spruce Pond along Kings Street as mapped on the Site plan; however, the time of year is not appropriate to provide comment on the extent of the nuisance vegetation described in the NOI.**

The aquatic management program proposed for Spruce Pond is a maintenance level program, so nuisance level growth conditions may not always develop. As indicated in our response to A1 & A7, active management will only be conducted when routine survey data indicates an exceedance of the criteria outlined for each management zone.

**W2. BETA defers to the Commission regarding the identification and delineation of onsite Resource Areas.**

We do not feel that resource area delineation is necessary, given that work and/or activity within Bank and BVW will consist primarily of ingress and egress to the pond.

**MITIGATION COMMENTS**

**W3. The Applicant should perform, at a minimum, a cursory investigation regarding nutrient loading at the Site as discussed in the BETA2 response to Comment A6.**

Although nutrient mitigation strategies may lessen algae production in the system, it will likely result in more frequent treatment and do very little to impact problematic rooted plant growth. With that said we are agreeable to some baseline sampling to investigate nutrient loading in the Spruce Pond.

We recommend three rounds (spring, summer, fall) of baseflow sampling and one stormflow sampling event. The baseflow samples will be collected from four locations (inlet, mid-pond, mid-pond deep, and outlet). The stormflow samples will be taken from primary tributaries to the pond during the first flush of storm event.



Like the BMP plan, however, we feel that if this is something that Commission wants the project can be conditioned to require the development of a suitable sampling plan and execution timetable.

**W4. Comment resolved.**

**W5. The Applicant has provided an Alternatives Analysis for different treatment methods; however, the Applicant has not assessed alternatives as they relate to the selected chemicals. Comment remains.**

Some related information is provided in the table included in the response for A4. Given that this program is intended to maintain desirable conditions, the suite of products selected was based on the combined ability to address the variety of potential management conditions that may be encountered over the course of the program.

**Diquat** - Diquat is a fast acting contact herbicide that is particularly effective on variable milfoil and a variety of other species. Its fast absorption by target plants following application makes it effective for smaller partial pond area selective management.

Diquat can also be used in conjunction with copper-based algaecides to address difficult to control filamentous algae species (Pithophora, etc.). Diquat improves penetration through the mucilaginous sheath formed by many filamentous algae species.

**Glyphosate** - Glyphosate is a systemic foliar active herbicide that is used to control emergent and floating-leaf plant species. This was selected to address nuisance waterlily growth and invasive purple loosestrife. There is no other aquatic labeled foliar product on the market.

**Fluridone** - Fluridone is a slow acting systemic herbicide that can be effective at controlling a wide array of nuisance plant growth. Its ultra low dose characteristics enable species selectivity by targeting narrow dose ranges. It can be effective in both area selective partial treatment scenarios and large scale treatments.

**Copper** - Copper is the primary active ingredient in most algaecides available in aquatics. This has a long track record of use and is very effective on a wide range of algae species.



**Peroxide** - Peroxide based algaecides are most effective on cyanobacteria (blue-green) algae. Although these products have limited effectiveness, they provide a greener and less impactful means to control cyanos. Given that oxygen is a breakdown product of peroxide there are less concerns about depleting dissolved oxygen with this product and the oxidative nature of the mode of action eliminates cyanobacteria toxins, if present.

**W6. The Applicant should revise the figures to define the areas of native vegetation and note that treatment will not be permitted within these areas to support the presence and continued propagation of native species. Further, the pond to the south is depicted as being included within the management area (PDF Page 100 of the revised NOI); however, it does not appear that data on existing vegetation was collected here. The Applicant should clarify the limits of the work and provide additional vegetation survey data as appropriate.**

We believe that this comment is addressed in our response to A1. Current vegetation data can be routinely provided to the Commission as a result of the monthly vegetation monitoring.

**W7.**

**W8. Based on the above date ranges, treatment in late summer will avoid impacting the typical aquatic species identified by the applicant. Comment addressed.**

Although this is true, treatment late in the growing season is not always desirable as it has the potential to result in greater stress on the ecosystem. Plants that have been allowed to grow to full maturity do not actively put energy into new vegetative growth. As a result they do not readily uptake herbicides and often require higher doses to achieve effective control. Increased treatment doses further limits area and species selectivity. In addition, the added biomass of target plants in late season increases the risk of oxygen depletion resulting from plant decomposition following treatment. It is better to treat earlier in plant development when less biomass is present and water temperatures are cooler with higher concentrations of dissolved oxygen.



## BYLAW REGULATORY COMMENTS

### **W9. The Applicant has not included the information required under Section 7.10 of the Bylaw. Comment remains.**

Section 6.0 of the original NOI addresses much of the requirements of section 7.10 of the Bylaw. Excerpts from the GEIR Practical Guide related to the interests of the Wetlands Protection Act are also provided within the descriptions of each herbicide and algaecide. In most all cases we believe that the judicious management of aquatic vegetation to provide a balanced aquatic ecosystem, is a net benefit to these specific interests.

**Protection of public and private water supply** – Spruce Pond is not used directly as a drinking water supply. Aquatic herbicide treatment at the pond will not have any adverse impacts on the public or private water supply when used in accordance with the product label and conditions of the MA DEP License to Apply Chemicals.

**Protection of groundwater supply** – According to available studies, there is no reason to believe that the groundwater supply will be adversely impacted by the proposed management strategies, specifically the application of the chemicals at the proposed rates to Spruce Pond, when used in accordance with the product labels. Contamination of groundwater by aquatic herbicides is limited by their low rate of application, rapid rate of degradation for the chemicals, and uptake by target plants. SOLitude's State licensed applicators take all necessary precautions when mixing and disposing of all chemical containers.

**Flood Control and Storm Damage Prevention** – No construction, dredging or alterations of the existing floodplain and storm damage prevention characteristics of the pond are proposed. However, in some instances, abundant and excessive aquatic plant growth can contribute to high water and flooding. Most commonly this occurs in the vicinity of waterbody outlets or water conveyance channels and structures. The unmanaged, annual growth and decomposition of abundant plant growth is also known to increase sediment deposition at an accelerated rate. Therefore, the proposed management approaches may increase the capacity of the resource area over the long-term to provide flood protection.

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**Erosion & Sedimentation** - No construction or earthmoving tasks are proposed as part of this project. The maintenance level management of aquatic vegetation that is proposed will not result in any erosion or sedimentation of the resource area

**Water Quality & Prevention of Pollution** – No degradation of water quality or increased pollution is expected by the proposed management approaches. The proposed herbicides are relatively slow-acting in controlling the nuisance vegetation. This results in a slow release of nutrients from the decaying plants, reducing the potential for increases in nutrients that can cause algae blooms. Removal of the excessive growth of aquatic vegetation will contribute to improved water circulation and a reduction in the potential for anoxic conditions. The post-treatment decrease in plant biomass will help to decrease the rate of eutrophication currently caused by the decomposing of excessive plant material.

**Protection of Fisheries and Shellfisheries** – Contiguous, dense beds of aquatic vegetation provide poor habitat for most species of fish. Dense plant cover frequently results in significant diurnal fluctuations in dissolved oxygen as well as oxygen depletion during certain times of the year. While temporary effects on some desirable submersed and floating-leaved species may occur following the application of an aquatic herbicide, non-target plants typically rebound quickly. Shoreline emergent plants will not be impacted following the use of aquatic herbicides.

**Protection of Wildlife and Wildlife Habitat** – In general, excessive and abundant plant growth, especially non-native plants, provides poor wildlife habitat for fish and other wildlife. The proposed management plan is expected to help prevent further degradation of the waterbody through excessive weed growth and improve the wildlife habitat value of the pond in the long-term. Maintaining a balance of open water and vegetated areas is intended.

**Agriculture** – The proposed aquatic vegetation management program will not preclude the site or downstream from being used for agricultural purposes.

**Aquaculture** – Neither the pond or downstream waters are used for aquaculture. However, both diquat and GreanClean products are routinely used in aquaculture operations to maintain desirable water quality conditions and prevent disease among the fish.



**Recreation** – In general, excessive and abundant plant growth are not conducive to water recreation. Boating and swimming can be difficult and potentially dangerous under dense growth conditions. Management of cyanobacteria that can produce toxins reduce the risk to water users.

**W10. As noted in BETA2 response to Comment A4, more detailed information on the application rates (i.e. anticipated total volume of each herbicide required based on the relevant treatment areas) should be provided. Comment remains.**

See herbicide/algaecide table provided in response to A4.

**W11. As noted above, the Applicant is required to submit a formal Variance Request for work within LUW, Bank and the 25-foot Buffer Zone per Section 5 of the Bylaw Regulations. Comment remains**

A formal Variance Request for the selective control of purple loosestrife is attached for the Commission's review and consideration.

I hope that this adequately addresses the comments related to the proposed aquatic management program at Spruce Pond. I look forward to meeting with the Commission on August 22nd to further discuss and review the project and supplemental information.

Sincerely,

SOLitude Lake Management

  
Keith Gazaille  
Senior Project Manager

## **ATTACHMENTS**

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- Resource Area Impact Summary Form
  - Sonar AS SDS
  - Sonar AS Label
- Bylaw Variance Request

**Town of Franklin Conservation Commission**

**RESOURCE AREA IMPACT SUMMARY FORM**

**The Franklin Wetlands Protection Bylaw  
Franklin Town Code Section 181**

<b>Resource Area</b>	<b>Alteration Proposed</b>	<b>Mitigation Proposed</b>
Bordering Vegetated Wetland (SF)		
Bank (LF)		
Land Under Water Bodies (SF)	228,690 SF	0 SF
Isolated Wetland (SF)		
Vernal Pool (SF)		
Buffer Zone (SF)		
Riverfront (SF)		
100-Year Floodplain (CF)		
(SF) = Square Feet (LF) = Linear Feet (CF) = Cubic Feet Flood Storage		

# SAFETY DATA SHEET



## Sonar<sup>®</sup> A.S. Aquatic Herbicide

### Section 1. Identification

**GHS product identifier** : Sonar<sup>®</sup> A.S. Aquatic Herbicide

**Other means of identification** : Not available.

**EPA Registration No.** : 67690-4

**Relevant identified uses of the substance or mixture**

Aquatic herbicide.

**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

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : EYE IRRITATION - Category 2B  
AQUATIC HAZARD (ACUTE) - Category 2  
AQUATIC HAZARD (LONG-TERM) - Category 2

**GHS label elements**

**Hazard pictograms** :



**Signal word** : Warning

**Hazard statements** : H320 - Causes eye irritation.  
H411 - Toxic to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention** : P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid accidental release to the environment.  
P261 - Avoid breathing vapor.



## Section 2. Hazards identification

- Response** : P391 - Collect spillage.  
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337 + P313 - If eye irritation persists: Get medical attention.
- Storage** : Not applicable.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** : None known.

## Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

Ingredient name	%	CAS number
Proprietary ingredient 1	40 - 60	-
Fluridone	42	59756-60-4
Proprietary ingredient 3	10 - 20	-
Proprietary ingredient 2	1 - 5	-
Proprietary ingredient 5	0.1 - 1	-
Proprietary ingredient 6	0.1 - 1	-
Proprietary ingredient 4	0.01 - 0.1	-

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. If irritation persists, get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

## Section 4. First aid measures

Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact : Causes eye irritation.
- Inhalation : No known significant effects or critical hazards.
- Skin contact : No known significant effects or critical hazards.
- Ingestion : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation : No known significant effects or critical hazards.
- Skin contact : No known significant effects or critical hazards.
- Ingestion : No known significant effects or critical hazards.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments : No specific treatment.
- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media : None known.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
halogenated compounds

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). May be harmful to the environment if accidentally released in large quantities. Collect spillage.

### Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid accidental release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Fluridone	None.
Proprietary ingredient 1	<b>AIHA WEEL (United States, 10/2011).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.
Proprietary ingredient 2	None.

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

**Physical state** : Liquid. [Opaque.]

**Color** : Off-white to tannish-gray.

**Odor** : Faint sweetness.

**Odor threshold** : Not available.

**pH** : 5.6 to 7.6

## Section 9. Physical and chemical properties

<b>Melting point</b>	: Not available.
<b>Boiling point</b>	: 100°C (212°F)
<b>Flash point</b>	: Closed cup: >93.3°C (>199.9°F)
<b>Evaporation rate</b>	: Not available.
<b>Flammability (solid, gas)</b>	: Not available.
<b>Lower and upper explosive (flammable) limits</b>	: Not available.
<b>Vapor pressure</b>	: 0.31 kPa (2.3 mm Hg) [room temperature]
<b>Vapor density</b>	: Not available.
<b>Relative density</b>	: 1.15
<b>Solubility</b>	: Easily soluble in the following materials: cold water and hot water.
<b>Solubility in water</b>	: Soluble in water.
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: Not available.
<b>Decomposition temperature</b>	: Not available.
<b>Viscosity</b>	: Not available.
<b>Flow time (ISO 2431)</b>	: Not available.

## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: No specific data.
<b>Incompatible materials</b>	: Reactive or incompatible with the following materials: oxidizing materials.
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Sonar® A.S. Aquatic Herbicide	LC50 Inhalation Dusts and mists	Rat	>10.4 mg/L	4 hours
	LD50 Dermal	Rabbit	>4000 mg/kg	-
	LD50 Oral	Rat	>2000 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Sonar® A.S. Aquatic Herbicide	Eyes - Mild irritant	Rabbit	-	-	-

## Section 11. Toxicological information

**Skin** : Not irritating.

**Eyes** : Not available.

### Sensitization

Product/ingredient name	Route of exposure	Species	Result
Sonar® A.S. Aquatic Herbicide	skin	Guinea pig	Not sensitizing

### Mutagenicity

**Conclusion/Summary** : Based on active ingredients: no known evidence.

### Carcinogenicity

**Conclusion/Summary** : Based on active ingredients: no known evidence.

### Reproductive toxicity

**Conclusion/Summary** : Based on active ingredients: no known evidence.

### Teratogenicity

There is no data available.

### Neurotoxicity

**Conclusion/Summary** : Based on active ingredients: no known evidence.

### Immunotoxicity

**Conclusion/Summary** : Based on active ingredients: no known evidence.

### Specific target organ toxicity (single exposure)

There is no data available.

### Specific target organ toxicity (repeated exposure)

There is no data available.

### Aspiration hazard

There is no data available.

**Information on the likely routes of exposure** : Dermal contact. Eye contact. Inhalation. Ingestion.

### Potential acute health effects

**Eye contact** : Causes eye irritation.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

## Section 11. Toxicological information

**Potential immediate effects** : No known significant effects or critical hazards.

**Potential delayed effects** : No known significant effects or critical hazards.

### Long term exposure

**Potential immediate effects** : No known significant effects or critical hazards.

**Potential delayed effects** : No known significant effects or critical hazards.

### Potential chronic health effects

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

There is no data available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Fluridone	EC50 3 mg/L	Daphnia - Daphnia magna	48 hours
	LC50 8 mg/L	Crustaceans - Eucyclops sp.	48 hours
	LC50 >5.2 mg/L	Fish - Cyprinodon variegatus	96 hours
	LC50 >6.5 mg/L	Fish - Pimephales promelas	96 hours
	Chronic NOEC 0.84 mg/L	Daphnia - Daphnia magna	21 days
Proprietary ingredient 3	Chronic NOEC 0.43 mg/L	Fish - Oncorhynchus tshawytscha	75 days
	Acute EC50 >110 mg/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1020 mg/L Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
Proprietary ingredient 4	Acute LC50 710 mg/L Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 97 ppb Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 10 to 20 mg/L Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 167 ppb Fresh water	Fish - Oncorhynchus mykiss	96 hours

### Persistence and degradability

There is no data available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Fluridone	3.16	-	low
Proprietary ingredient 3	-1.07	-	low

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

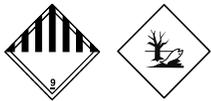
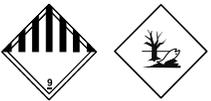
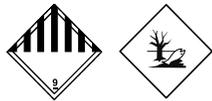
## Section 12. Ecological information

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	IMDG	IATA
<b>UN number</b>	UN3082	UN3082	UN3082
<b>UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluridone)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluridone). Marine pollutant (Fluridone)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluridone)
<b>Transport hazard class(es)</b>	9 	9 	9 
<b>Packing group</b>	-	-	-
<b>Environmental hazards</b>	Yes.	Yes.	Yes.

**AERG** : 171

### Additional information

- DOT Classification** : Non-bulk packages of this product are not regulated as hazardous materials unless transported by inland waterway. This product is not regulated as a hazardous material when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.
- IMDG** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
- IATA** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined  
 United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

### SARA 311/312

Classification : Immediate (acute) health hazard

#### Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Fluridone Proprietary ingredient 2	No. No.	No. No.	No. No.	Yes. Yes.	No. No.

### SARA 313

There is no data available.

### State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : The following components are listed: Proprietary ingredient 3

Pennsylvania : The following components are listed: Proprietary ingredient 3

### California Prop. 65

No products were found.

## Section 16. Other information

### National Fire Protection Association (U.S.A.)

Health : 2 Flammability : 1 Instability : 0

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## Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
EYE IRRITATION - Category 2B	On basis of test data
AQUATIC HAZARD (ACUTE) - Category 2	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

### History

**Date of issue mm/dd/yyyy** : 08/15/2017  
**Date of previous issue** : 08/15/2016  
**Version** : 5  
**Prepared by** : KMK Regulatory Services Inc.

### 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.

August 15, 2023

Franklin Conservation Commission  
% Ms. Breeka Li Goodlander, Agent  
355 East Central Street  
Franklin, MA 02038

**Re: Franklin Wetland Bylaw Variance Request for the Selective Control of Invasive Purple Loosestrife (*Lythrum salicaria*) at Spruce Pond (DEP File # 159-1267)**

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Dear Ms. Goodlander:

Please accept this as a formal request for a variance under Section 5 of the Town of Franklin Wetland Bylaw for the selective control of purple loosestrife in and around Spruce Pond. Supporting information for this request is outlined below.

**Purple Loosestrife Management**

Purple loosestrife is a non-native species that can aggressively colonize shallow aquatic and wetland sites, thereby displacing native species and reducing plant and habitat diversity. We therefore feel that selective management of pioneer colonies of this plant at Spruce Pond is in the best interest of maintaining a balanced native plant community.

Given that purple loosestrife has the ability to colonize LUW, Bank and areas within the 25-foot buffer zone of Spruce Pond, we feel that it is important to long-term control that all occurrences be addressed on site. Historically purple loosestrife growth has consisted of scattered individual plants on the order of 1-2 dozen specimens.

*Control Strategies*

As a result of the low density nature of the historical growth we are proposing the integrated use of manual hand-pulling and low-volume foliar herbicide treatment.

Manual Hand-Pulling - will be employed on isolated individual plants or clusters of individual plants consisting of fewer than six individuals. Limiting this technique to very small scale infestations will eliminate the potential for destabilization of soils as a result of root



crown removal. Purple loosestrife designated for hand removal will be removed using a weed wrench or small hand trowels. The removed plant biomass will immediately be placed in large construction trash bags. The bagged biomass will be transported to SOLitude's Shrewsbury facility for final disposal.

Low-Volume Foliar Treatment - will be employed when purple loosestrife is clustered together in groups of more than six individuals. A 1.5 % solution of glyphosate will be applied foliarly to target plants using a low-volume and low pressure back-pack sprayer.

Purple loosestrife management activities will occur in July when the plants are in full inflorescence, but prior to seed production/development

### **Alternative Analysis**

The effective methods for purple loosestrife control are limited and generally consist of manual, mechanical, and chemical methods. With the inclusion of hand-tools, the proposed plan in essence incorporates these three strategies.

Beetle Biocontrol - Introduction of Galerucella beetles has proven to be an effective method of purple loosestrife control; however, most research and case study information indicate that they are most effective on large contiguous infestations. Given that the purple loosestrife infestation at Spruce Pond has historically consisted of individual plants, we do not believe that beetle introduction would be a successful control strategy in this case. There is likely insufficient host plant biomass (purple loosestrife) to sustain a beetle population sufficient to result in herbivory damage or plant mortality.

I hope that this information is sufficient to facilitate your review of this variance request. If you have any questions or require additional information please do not hesitate to contact me.

Sincerely

### **SOLitude Lake Management**

Keith Gazaille  
Senior Project Manager