

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
Division of Environmental Health
Pesticide Control Program

Part One: Contact Information

APPLICANT (Person, organization, or business applying for this permit)

Organization/business Lake of The Hills Homeowners Association

Contact person Ron Boyle

Mailing address 7000 Lake O The Hills Circle

City, State, Zip Anchorage, AK 99516

Telephone Number (907) 441-5133

Email Address Ron Boyle <85east@gmail.com>

Is the applicant a government entity?

18 AAC 50.620

☐

Yes

☒

No

APPLICATOR (Person, organization, or business who will be applying the pesticides)

Organization/business Amaruq Environmental Services, LLC

Contact person Dr. Andrew Z Skibo, PhD

Mailing address 173 Blue Heron LN

City/State/Zip North Augusta, SC 29841

Telephone Number (907) 250-8900

Email Address Andrew.skibo@amaruqenvironmental.com

Pesticide Applicator Certification Number 10082-1807-2/6/9 (expires 31JUL18)

18 AAC 90.515(13)

Applicators are certified in other categories, and are in the process of acquiring the Aquatic Category certification and will do so prior to any application.

State of Alaska DEC

APR - 6 2017

Pesticide Control Program

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✓	#	Part Two: Treatment Location Information
	1	<p>Treatment site location: 18 AAC 90.515(B)(A)</p> <p>Street Address <u>7000 Lake O The Hills Circle (general reference; see coordinates below)</u></p> <p>City <u>Anchorage, Alaska</u></p> <p>OR</p> <p>For remote areas, fill in an informal location description such as mileposts, landmarks, distance and direction from nearest community, latitude and longitude, UTM coordinates, etc.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Mountain Lake, bordered on the north by Mountain Lake Drive, to the east by Hillside Drive, to the south by Alatna Avenue, emptying into Little Campbell Creek to the southwest, 61°117861N -149°751934W. Used solely for recreational activities permitted by jurisdictional authority, Lake of the Hills Homeowners Association and all access is private.</p> </div>
	2	<p>Describe treatment site (lake, stream, river, wetland, etc.), including inflow and outflow characteristics, stream flow, etc.:</p> <div style="border: 1px solid black; padding: 5px;"> <p>Site is a lake. Mountain Lake has 6.75 surface acres and an average depth calculated at 4.15', yielding a total volume of 28.01Acre-feet. Inflow and outflow from the lake is by surface water flow and streams. Mountain Lake's outflow is entirely into Little Campbell Creek which flows west into Campbell Lake and then the Turnagin Arm. Lake of the Hills' outflow is not measured via USGS stream gauge. However, historical measurement within hydrologic unit code (HUC) 19020401 noted seasonal fluctuation such that average monthly inflow has a mean of 0.72 cubic feet per second (cfs) in July, 0.760 cfs on 11th August, 0.860 on 25th August, 0.770 cfs on 10 Sept and 1.64 cfs on 24th Sept. These averages are taken from the start of monitoring by USGS in 1986 through the end of September. As lake level is passively controlled by a weir structure on the western boundary of the lake, influent water can be assumed to balance effluent water thereby maintaining a level lake full pool volume and allow for estimation of average daily turnover throughout the season. During the anticipated treatment months of June through August, average daily turnover is estimated not to exceed 12%, barring extreme weather events</p> </div>

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✓	#	Part Two: Treatment Location Information
	3	<p>List each public or private drinking water system within 200 feet of the treatment area <small>18 AAC 90.51.007.D</small></p> <p>Mountain Lake does not supply potable drinking water to any Lake of the Hills Homeowners Association property; drinking water is supplied entirely by the City of Anchorage. However, for the purpose of this project, this document includes all of the known well records within a 200 foot buffer of Mountain Lake's perimeter. The record in attachment 4 was obtained through the State of Alaska's Department of Natural Resources (DNR) Alaska Mapper database for all well records within the Anchorage area. Well logs were obtained through the DNR's Division of Mining, Land and Water's Well Log Tracking System (WELTS).</p> <p>Personal communications with the Homeowners Associations note that there are no known active or inactive wells that can be located at this time and may be considered abandoned. Also, as stated in the project Environmental Assessment, there are no concerns for fluridone nor diquat contaminating groundwater aquifers or supplies due to the inability of the pesticides noted to travel more than a few inches in the hydrosol through binding ability to soil particles. Further, low quality surface aquifers are usually not utilized for potable water wells and there is no bedrock presence in the area.</p>
	4	<p>Approximate size of the treatment area. Please specify units (acre feet, flow rate, etc):</p> <p>Mountain Lake has 6.75 surface acres and an average depth calculated at 4.15'; yielding a total calculated volume (Surface Acres x Average Depth) of 28.01 Acre-feet. For fluridone applications, the whole lake shall be considered as a single, contiguous treatment zone. For diquat applications, the lake shall be delineated into two treatment zones of ≤50% of the total surface area (≤3.4 Acres) per treatment.</p>
	5	<p>If the treatment location has been identified as habitat for an endangered or threatened species, list each species and category (threatened, endangered). <small>50 CFR 17.11-12</small></p> <p>None found; however, the proposed treatment area does connect to the Turnagain Arm of Cook Inlet which is habitat for the Beluga Whale (<i>Delphinapterus leucas</i>) which is classified as 'Near Threatened' (IUCN 3.1). The potential impacts of fluridone and diquat treatment are outlined in Attachment 7: Impacts to Environment and Non Target Species. All outflow from Mountain Lake carrying herbicides from the proposed treatment area and ultimately into Turnagain Arm would immediately drop to the point of non-detectability by conventional methods (< 1 part-per-billion) through simple dilution and it is anticipated that tidal fluctuation would expedite this process.</p>

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✓	#	Part Three: Treatment Information																					
	1	<p>List the dates & times (or range of dates and times) that pesticide is proposed to be applied: 18 AAC 90 515(9)</p> <p>Nuisance aquatic vegetation (NAV) control with fluridone products generally require treatment of 45-90 days per growing season while the requisite contact time to achieve results with diquat are much shorter (2-4 days). The ideal time for NAV treatment is shortly after ice out (late May, early June) when plant biomass is low, turbidity is low, water volume is low, and the plant is actively growing. Fluridone can be applied at any time during the summer before ice sets in. For planning purposes, we will assume that the last reasonable date for initiating treatment is 1 October. However, fluridone can be applied at any time that NAV is growing, which may to be almost year round, species dependent. Consequently, we believe that NAV could be treated in late fall with fluridone concentrations maintained at lethal dosages by supplemental treatments through the ice, though the necessity for this is highly unlikely. This has been done successfully in Michigan (Pedlow et al. 2006) with fluridone treatment of <i>Myriophyllum</i> spp.. Despite low uptake by plants during this time, we believe that this disadvantage may be offset by low water volume, minimal mixing (no wind due to ice cover), and reduced concerns about potential impacts to anadromous fish and human health. The overall scope of work proposed is the suppression of NAV growth and biomass in 2016 with diquat and fluridone in 2016 and future seasons, as permitted, with an initial application of Sonar® and Littora® mid-May to early June (precise date to be determined as winter weather transitions to spring, 2016) and a subsequent application to occur in mid-August to early September (precise date to be determined).</p>																					
	2	<p>Target pest of pesticide project: 18 AAC 90 515(2)</p> <table border="1"> <thead> <tr> <th>✓</th> <th>Category</th> <th>List specific targets</th> </tr> </thead> <tbody> <tr> <td></td> <td>Fungus</td> <td></td> </tr> <tr> <td>X</td> <td>Vegetation</td> <td> <p>Potamogeton species: <i>Potomageton richardsonii</i></p> <p>Myriophyllum species: <i>Myriophyllum sibiricum</i> <i>Myriophyllum verticillatum</i></p> <p>Note: <i>Elodea</i> and its congeners have not been noted within Mountain Lake; However, these species are found in several nearby lakes. The program as outlined herein will be effective in controlling <i>Elodea</i> spp. during the season of application in the remote chance that this species has been moved on site.</p> </td> </tr> <tr> <td></td> <td>Insects</td> <td></td> </tr> <tr> <td></td> <td>Fish</td> <td></td> </tr> <tr> <td></td> <td>Rodents</td> <td></td> </tr> <tr> <td></td> <td>Other</td> <td></td> </tr> </tbody> </table>	✓	Category	List specific targets		Fungus		X	Vegetation	<p>Potamogeton species: <i>Potomageton richardsonii</i></p> <p>Myriophyllum species: <i>Myriophyllum sibiricum</i> <i>Myriophyllum verticillatum</i></p> <p>Note: <i>Elodea</i> and its congeners have not been noted within Mountain Lake; However, these species are found in several nearby lakes. The program as outlined herein will be effective in controlling <i>Elodea</i> spp. during the season of application in the remote chance that this species has been moved on site.</p>		Insects			Fish			Rodents			Other	
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✓	#	Part Three: Treatment Information
	3	<p>Provide a description of the method of pesticide application, including details about any equipment that will be used <small>18 AAC 90.51.5410</small></p> <p>Fluridone will be applied as a discrete, ready-to-use liquid formulation in the treatment area.</p> <p>Materials and equipment would be transported to the site by pickup truck. Pesticide dispersal will be directly into the lake by AK DEC-certified applicators from an outboard motorboat. The application boat would be equipped with an electric-powered pumping system that would mix lake water with fluridone in liquid form or diquat as applicable and be sprayed onto the lake surface.</p> <p>The target concentration of fluridone, 45ppb, has been calculated through estimation of water volume in the lake (Surface Area x Average Depth = Acre Feet) and the manufacturer's recommended concentration for targeted species is determined to be applied at a rate, not to exceed 45 ppb and the sum of all applications in a single season shall not exceed 150ppb. For control adequate to recreational activities, Mountain Lake will likely be treated for at least two sequential seasons.</p> <p>SePRO Corporation, producers of Sonar and Littora products, recommended optimal lethal concentrations, as specified on product labels, to maintain effective concentrations in the treatment zones through the 2017 lake use season (JULY-SEPTEMBER). To ensure that concentrations are maintained, water samples will be collected from two sites in the target area. For this whole-lake fluridone treatment, water samples will be collected two weeks after initial application and again at two weeks following the second application to verify target concentrations were achieved. All water samples will be collected using protocols established by, and sent by overnight delivery to, SePRO Corporation's analytical laboratory in Whitakers, NC for assays following techniques described by Netherland <i>et al.</i> (2002).</p> <p>All calculations in part 5, (#7-9) are based on a whole-lake volume treatment of Mountain Lake (average depth ±4.15 feet) as defined above. Calculated amounts are based on a maximum single dose (45ppb) and USEPA maximum allowable dose in a single season (150 ppb).</p>

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✓	#	Part Four: Pesticide List
	1	<p>List the common or brand name of EACH proposed pesticide and adjuvant. 18 AAC 90.515(1)</p> <ul style="list-style-type: none">• Pesticides MUST be registered in the State of Alaska.• Adjuvants MUST be registered in the State of Washington to be considered for use in Alaska. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"><p>Common Name: Diquat Littora (USEPA 67690-53) – 37.3% Diquat Dibromide</p><p>Common Name: Fluridone Sonar Genesis (USEPA 67690-54) – 6.3% fluridone</p></div>
	2	<p>Total number of pesticides and adjuvants listed. <u>2</u></p>

To find pesticide products registered in Alaska, search by EPA registration number here:
<http://www.kellysolutions.com/ak/pesticideindex.htm>

To find adjuvants registered in Washington, search here <http://cru66.cahe.wsu.edu/labels/Labels.php> For "Item to search on", select "Crop". For "Common name", select "adjuvant"

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✓	#	Part Five: Product Information For EACH proposed pesticide and adjuvant, fill out the following information. Copy and attach additional sheets for each product. <div style="text-align: right;">18 AAC 90.515(1-6)</div>				
	1	Common or brand name of proposed pesticide or adjuvant detailed on this sheet: <u>Littora Aquatic Herbicide</u>				
	2	EPA Registration Number (not applicable for adjuvants): <u>67690-53</u>				
	3	List each active ingredient (or principal functioning agent) AND percent composition: <div style="border: 1px solid black; padding: 10px; text-align: center;"> <u>Diquat Dibromide 37.3%</u> </div>				
	4	Specify the formulation of the pesticide or adjuvant (liquid, granular, aerosol, etc.): <u>liquid</u>				
	5	Name of the seller or distributor from whom the pesticide will be obtained: <u>SePRO Corporation</u> <div style="text-align: center;">OR</div> Check here if pesticide is from a previous surplus <input type="checkbox"/> <div style="text-align: left; font-size: small;">18 AAC 90.515(1)</div>				
	6	List each active ingredient (or principal functioning agent) in this product AND its percent composition: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Active Ingredient</th> <th style="width: 40%;">% composition</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><u>Diquat Dibromide</u></td> <td style="text-align: center;"><u>37.3</u></td> </tr> </tbody> </table>	Active Ingredient	% composition	<u>Diquat Dibromide</u>	<u>37.3</u>
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		Product Name <u>Littora Aquatic Herbicide</u>	
	7	<div style="display: flex; justify-content: space-between;"> Rate of dilution as it will be applied for this project 18 AAC 90.515(6) </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 40%;"> Amount of product (list units) Amount of diluent (list units) </div> <div style="width: 55%; border: 1px solid black; padding: 5px;"> <p>6.75 gal applied as two applications applied approximately 30 days apart, using 3.38 gallons (432.6 fl.oz.) of product, respectively, into the delineated treatment zone as specified in 'Attachment 3: DETAILS OF TREATMENT AREA. Mountain Lake Treatment Poly'</p> </div> </div> <div style="text-align: right; margin-top: 20px;"> Not applicable – Product is Ready-to-Use: <input checked="" type="checkbox"/> </div>	
	8	<div style="display: flex; justify-content: space-between;"> Rate of application that will be used for this project: 18 AAC 90.515(6) </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 40%;"> Amount of MIXED product (list units) </div> <div style="width: 15%; border: 1px solid black; padding: 2px;"> 1 gallons (1st treatment); 1 gallon (2nd treatment) </div> <div style="width: 10%; text-align: center;">per</div> <div style="width: 35%; border: 1px solid black; padding: 2px;"> Surface acre </div> </div>	

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	1	Common or brand name of proposed pesticide or adjuvant detailed on this sheet: <u>Sonar GENESIS</u>				
	2	EPA Registration Number (not applicable for adjuvants): <u>67690-54</u>				
	3	List each active ingredient (or principal functioning agent) AND percent composition: <div style="border: 1px solid black; padding: 10px; text-align: center;"> Fluridone 6.3% </div>				
	4	Specify the formulation of the pesticide or adjuvant (liquid, granular, aerosol, etc.): <u>liquid</u>				
	5	Name of the seller or distributor from whom the pesticide will be obtained: <u>SePRO Corporation</u> <div style="text-align: center;">OR</div> Check here if pesticide is from a previous surplus <input type="checkbox"/> <div style="text-align: left; font-size: small;">18 AAC 90.515(1)</div>				
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✓	#	Part Five: Product Information For EACH proposed pesticide and adjuvant, fill out the following information. Copy and attach additional sheets for each product. 18 AAC 90.515(1-6)											
		Product Name <u>Sonar GENESIS</u>											
	7	Rate of dilution as it will be applied for this project: 18 AAC 90.515(6) Amount of product (list units) 6.8 gallons Amount of diluent (list units) Not applicable – Product is Ready-to-Use: X											
	8	Rate of application that will be used for this project. 18 AAC 90.515(6) Amount of MIXED product (list units) 1 gallon per Surface-acre											
	9	Total volume of mixed product that will be applied to the treatment site for each application: <small>18 AAC 90.515(6)</small> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Application Rate (from Part 5, Question 8)</td> <td></td> <td>Application Area Size (from Part 2, Question 4)</td> <td>=</td> <td>Total Volume</td> </tr> <tr> <td style="text-align: center;">1 gallon</td> <td style="text-align: center;">*</td> <td style="text-align: center;">6.8 Acres</td> <td style="text-align: center;">=</td> <td style="text-align: center;">6.8 gallons</td> </tr> </table>		Application Rate (from Part 5, Question 8)		Application Area Size (from Part 2, Question 4)	=	Total Volume	1 gallon	*	6.8 Acres	=	6.8 gallons
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✓	#	Part Six: Storage and Disposal	18 AAC 90.615
	1	<p>List the location where pesticide will be stored prior to final disposal.</p> <p>Physical Address <u>3653 West 100th Ave, POC- Dave Weir, 907-529-9347</u></p> <p>City, State, Zip <u>Anchorage, AK 99501</u></p>	
	2	<p>Describe how and where excess <u>mixed</u> pesticides and adjuvants will be disposed:</p> <div style="border: 1px solid black; padding: 10px;"> <p>There should be no excess mixed product since the product will not be mixed in advance and stored in tanks but rather the concentrate will be metered and mixed with lake water during the pumping and application process. There may be excess unmixed product (concentrate) but not excess mixed product.</p> </div>	
	3	<p>Describe how and where empty pesticide and adjuvant containers will be disposed:</p> <div style="border: 1px solid black; padding: 10px;"> <p>Emptied containers will be triple-rinsed on-site and punctured on-site. These containers will then be taken for recycling at the landfill recycling facility (in section 4 below) or disposed of in the landfill itself if not accepted for recycling</p> </div>	
	4	<p>If excess material or empty containers will be disposed in a landfill, provide the following information:</p> <p>Facility Name <u>Anchorage Regional Landfill – Hazardous Waste, POC- Shane Christianson</u></p> <p>City, State, Zip <u>Anchorage, AK 99501</u></p> <p>Date when disposal site was contacted to confirm acceptance of materials: <u>March 16, 2017</u></p>	

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Please provide EACH required item in a separate, stand-alone document.
Check off each item that is attached. Some items may not be applicable; if so, check the N/A column.

Part Seven: Supporting Documentation

✓	#	N/A	Item
	1.	Required	Justification for the pesticide application - why you need to apply a pesticide and the benefits you expect to achieve from the treatment.
	2.	Required	Map that shows the location of the treatment area within the state of Alaska. Map must be issued by the United States (e.g. USGS), the State, or the Municipality.
	3.	Required	Maps and/or aerial photos that show details within the treatment area, included areas where pesticides will be applied. Map/photo must include a scale to show distances.
	4.		Map and/or aerial photo that shows the treatment area and the location of all sources of drinking water within 200 feet of the treatment area. Map/photo must include a scale to show distances.
	5.	Required	EPA approved label for each proposed pesticide and adjuvant to be used.
	6.	Required	Material Safety Data Sheet for each proposed pesticide and adjuvant to be used.
	7.	Required	Description of precautions planned to protect human health, safety, welfare, animals, and the environment.
	8.		Proof of liability insurance (for non-government applicants)
	9.		Information about how the proposed pesticide application might affect any threatened or endangered species that may be found in or near treatment area, and any proposed measures to prevent or reduce impacts.
	10.	Required	Documentation of compliance with APDES permit requirements (see instructions on page 1).

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Part Nine: Signatures

All applications must be signed as follows, per 18 AAC 15.030:

- **Corporations** A principal executive officer, an officer that is no lower than the level of vice president, or a duly authorized representative who is responsible for the overall management of the project or operation
- **Partnerships** A general partner
- **Sole proprietorship** The proprietor
- **Municipal, state, federal, or other public entity** A principal executive officer, ranking elected official, or duly authorized employee

I, Andrew Z Skibo, PhD certify under penalty of perjury, that all of the information
And exhibits in this application and attached documentation are true, accurate, and complete.

A handwritten signature in black ink, appearing to read 'Andrew Z Skibo', written over a horizontal line.

Applicant's Signature

President, Amarug Environmental Services

Applicant's Title

April

Month

04

Day

2017

Year

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1. JUSTIFICATION FOR PESTICIDE APPLICATION

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ATTACHMENT 1: JUSTIFICATION

Mountain Lake's primary use is for recreational activities such as fishing, swimming, or *et cetera* as permitted within the boundaries of the lake. The Lake O' The Hills Association's goal is to provide homeowners, visiting guests, and other permitted users with a safe recreational environment. The Lake of The Hills Homeowners Association's aims to protect the natural environment and water quality of the lake while providing safe passage when participating in in-water recreational activities. The extent of growth of noted *Potamogeton* and *Myriophyllum* species over the past several seasons has become a hazard to these activities, and as such, requires mitigation to allow continued, safe use of these waters.

The species noted are perennial in their growth habits and as such, are likely to have extensive root/ rhizome structures in the lake hydrosol that will enable re-sprouting and/ or regrowth. The nature of these species typically requires extensive cuttings per season and/ or dredging which requires expensive equipment and can be highly disruptive to operations on the lake as a float plane base. As such, the systemic herbicide, fluridone, and the contact herbicide, diquat, have been selected to provide a low-cost, high efficacy program aimed at keeping established nuisance aquatic vegetation populations at a level where they no longer impact float plane navigation and operation on the lake. Neither of these herbicides are known to have effect on non-target organisms such as fish, birds, mammals, *et cetera* and both have relatively low toxicity to fish in particular.

Further, the potential for dissolved oxygen drop associated with rapidly decaying plant biomass has been accounted for in delineating the lake surface into 2 treatment areas (zones 1 and 2) which will be treated on a 30 day (\pm 5 days) cycle. This interval is 2X greater than the minimum recommended interval of 14 days as noted on the USEPA accepted label. An integrated pest management strategy is planned for Mountain Lake where in comprehensive lake bathymetry, plant population densities, and relative species composition will be noted during the primary treatment period and will be compared to post-application plant population densities and relative species composition for planning of follow up applications in seasons to come; if and when required.

Human Health and Safety:

If nuisance aquatic vegetation (NAV) is unmanaged and allowed to establish into thick, dense stands, it could jeopardize the health and safety of homeowners on Mountain Lake. When tangled in a mass at the lake's surface, NAV can hinder the recreational swimmers and boaters ability to safely navigate and/or exit the water and could possibly lead to accidental drowning. In order to provide a modicum of safety for homeowners utilizing the lake for recreational activities, NAV should be properly managed in Mountain Lake.

Economic Impact:

The costs of controlling invasive and nuisance aquatic vegetation which include mechanical harvesting, underwater cultivation, diver hand-pulling, water level manipulation, biological control, and aquatic herbicide application, exceeds many millions of dollars annually (Eiswerth et al. 2000). NAV can reduce property values on infested lakes. Thus, policies and opportunities for rapid response management to

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prevent future invasions can provide significant benefits to lakefront properties, community members, and specifically float plane pilot slip owners on Campbell Lake.

A study in New Hampshire found a 21-43% decline in property values associated with an infestation of variable milfoil, which also reproduces vegetatively, can clog water bodies, crowd out native aquatic plant species, and reduce recreational activities like boating and swimming (Halstead et al. 2003). In a Wisconsin study of 170 lakes infested with Eurasian watermilfoil, property values were reduced by an average of 13% (Horsch and Lewis 2009). A similar study in Washington also with Eurasian watermilfoil showed a 19% decline in property values (Olden and Tamayo, 2014).

Justification for the use of herbicides:

Herbicide control of NAV is the most effective method to achieve control and prevent further spread. Physical or mechanical controls for this plant are limited, in particular because *Myriophyllum* species reproduce readily from small fragments. Any physical disturbance of the plant easily breaks the stems into pieces that are capable of reproducing in new locations. In Mountain Lake, it is speculated that the operation of a vegetation harvester is only a temporary fix to excessive vegetation, and leaves plant fragments in the water, potentially distributing vegetative fragments to establish in different areas around the lake. Anderson (2015) has quantified up to 14% increase in fragments of Eurasian watermilfoil after a vegetation harvester was operated in Lake Tahoe.

NAV are difficult and expensive to control, sometimes requiring multiple treatments of herbicide over two or three growing seasons. Therefore, it is important to begin treatment as soon as possible. In the case of Mountain Lake, both a contact herbicide and a systemic herbicide will be utilized to achieve the goals of maintaining safe standards for float plane pilots, lake management operators, and achieving eradication. Diquat, a contact herbicide, will reduce the current amount of unsafe vegetation and Fluridone, a systemic herbicide, will selectively target *Potamogeton* and *Myriophyllum* at low application rates that have limited impacts on many other aquatic plants. Also fluridone has low toxicity to fish and other non-target species.

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2. MAP SHOWING TREATMENT AREA WITHIN ALASKA

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ATTACHMENT 2: TREATMENT AREA



State of Alaska; USGS National Map
<https://viewer.nationalmaps.gov>



Anchorage Metropolitan Area; USGS National Map
<https://viewer.nationalmaps.gov>



Mountain Lake Area; USGS National Map
<https://viewer.nationalmaps.gov>



Mountain Lake; 62° 22'78.61"N -149° 75'19.34"W
USGS National Map
<https://viewer.nationalmaps.gov>

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3. MAPS & AERIAL PHOTOS OF DETAILS WITHIN THE TREATMENT AREA

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ATTACHMENT 3: DETAILS OF TREATMENT AREA

Mountain Lake Overview



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**4. MAP/AERIAL PHOTO OF DRINKING WATER SOURCES WITHIN 200 FEET
OF TREATMENT AREA**

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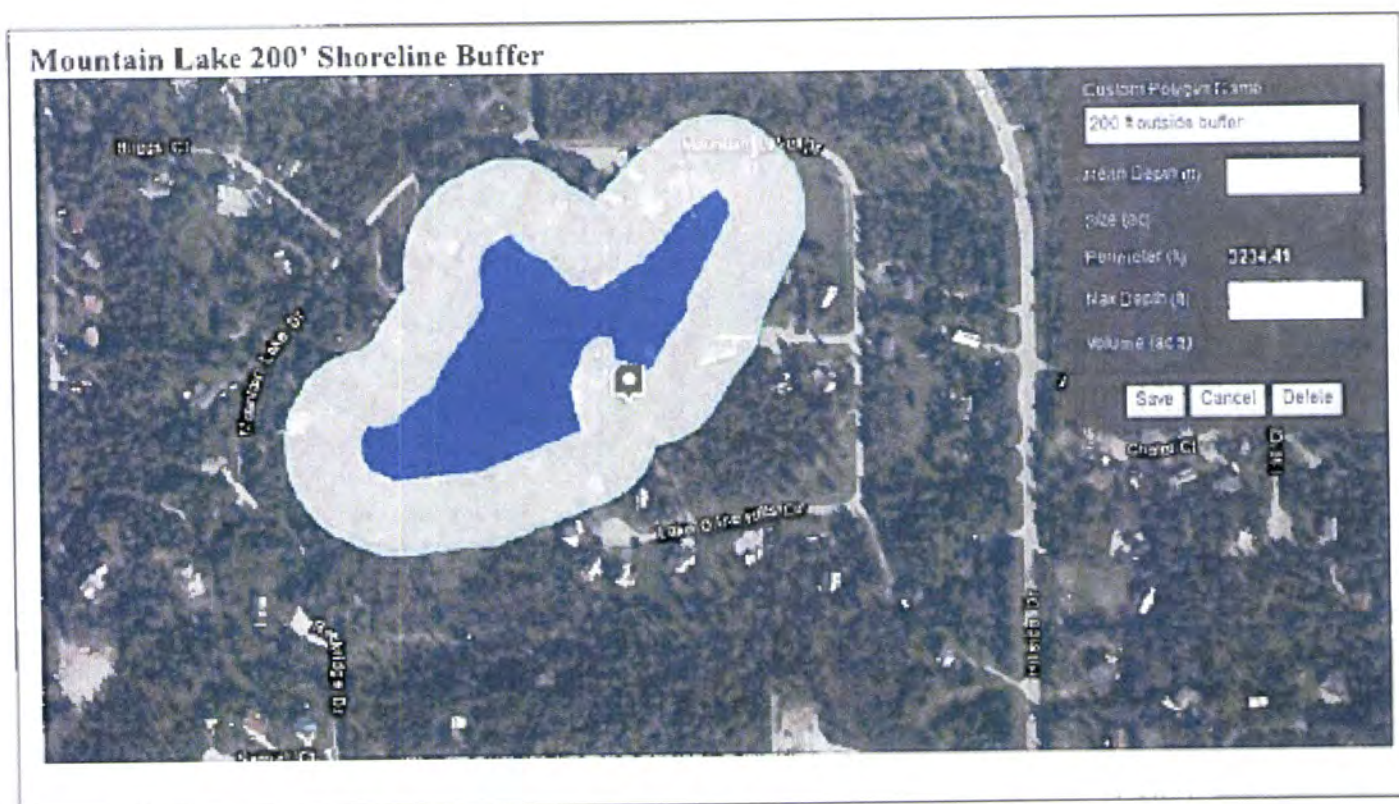


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ATTACHMENT 4: MAP/AERIAL PHOTO OF DRINKING WATER SOURCES WITHIN 200 FEET OF TREATMENT AREA

The following record was obtained through the State of Alaska's Department of Natural Resources' (DNR) Alaska Mapper database for all well records within the Anchorage area. Well logs were obtained through the DNR's Division of Mining, Land and Water's Well Log Tracking System (WELTS).

For the purposes of this project, this document includes all of the known well records within a 200 foot buffer of Mountain Lake's perimeter. One well within the WELTS record appears to be within the boundary of the lake itself; LAS 8257. This is due to the location information written on the well log being generalized to Meridian, Township, Range and Section. When spatially interpreted into digital format for the WELTS record, the location of the well is approximate and likely not within the lake boundary. The only well located within the 200' buffer zone that may be used for potable water is LAS 8257. Personal communication with the property owner found that this well has been abandoned for some time and the property owner is unable to locate the wellhead site at this time. Also, as stated in the project Environmental Assessment, there are no concerns for fluridone nor diquat contaminating groundwater supplies because of the inability of the pesticides noted to travel more than a few inches in the hydrosol through binding ability to soil particles, low quality aquifers near the surface usually not utilized by wells, and no bedrock presence in the area.



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ATTACHMENT 4: TREATMENT AREA WELLS



State of Alaska WELTS Records for Mountain Lake Area. Wells identified inside red circles are assumed abandoned and cannot be located by property owners onsite. LAS 8257 shown within lake boundary itself (yellow circle) is likely an anomaly of interpretation into digital format. No other wells that are known to exist or that are currently in use are found within the 200 foot boundary as outlined in '**Mountain Lake 200' Shoreline Buffer**' graphic.

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ATTACHMENT 5: USEPA APPROVED LABELS

Littora®

Landscape and
Aquatic Herbicide

SPECIMEN

SePRO

For use as a general herbicide to control weeds in commercial greenhouses and nurseries; ornamental seed crops*, landscape, industrial, recreational, commercial, residential, and public areas; turf renovation; dormant established turfgrass; and aquatic areas.

Active Ingredient

Diquat dibromide [6,7-dihydro pyrido(1,2-a,2',1'-d)pyrimidin-4(3H)-one] dihydrobromide 37.3%

Other Ingredients

62.7%

TOTAL 100.0%

Contains 2 pounds diquat calce per one (1) U.S. gallon (3.73 pounds diquat dibromide per gallon)

Keep Out of Reach of Children

CAUTION / PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

NOTICE: Read the entire label before using. Use only according to label directions. Before buying or using this product, read *Warranty Disclaimer and Misuse statements*. If terms are unacceptable, return at once unopened.

*except in the state of California

Littora is a registered trademark of SePRO Corporation

Manufactured for: **SePRO Corporation**

11550 North Meridian Street, Suite 600

Carmel, IN 46032, U.S.A.

EPA Reg. No. 67690-03

FPL 20151065

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

KEEP OUT OF REACH OF CHILDREN CAUTION / PRECAUCIÓN

Harmful if inhaled. Harmful if swallowed. Causes moderate eye irritation. Avoid breathing spray mist and contact with eyes or clothing.

FIRST AID	
If inhaled	<ul style="list-style-type: none"> Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
If swallowed	<ul style="list-style-type: none"> Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything to an unconscious person.
If in eyes	<ul style="list-style-type: none"> Hold eye 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 eye. Call a poison control center or doctor for treatment advice.
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the environment involving this product, call INFOTRAC at 1-800-635-5053.	

Note to Physicians: To be effective, treatment for diquat poisoning must begin **IMMEDIATELY**. Treatment consists of binding diquat in the gut with suspensions of activated charcoal or bentonite clay, administration of cathartics to enhance elimination, and removal of diquat from the blood by charcoal hemoperfusion or continuous hemodialysis.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are: barrier laminate butyl rubber ≥14 mils, nitrile rubber ≥14 mils.

Mixers, Loaders, Applicators and Other Handlers Must Wear:

- Coveralls over long-sleeved shirt and long pants;
- Chemical-resistant gloves;
- Chemical resistant footwear plus socks;
- Protective eyewear;
- Chemical-resistant headgear for overhead exposure;
- Chemical-resistant apron when cleaning equipment, mixing, or loading; and
- Face shield when mixing or loading.

Exception: After this product has been diluted to 0.50% or less in water (i.e., the labeled rate for some spot applications), applicators for **AQUATIC SURFACE APPLICATIONS** must, at a minimum, wear (Note: Mixers and loaders for this application method must still wear the PPE as described in the above section.)

- Long-sleeved shirt and long pants;
- Shoes plus socks
- Waterproof gloves; and
- Protective eyewear.

Exception: At a minimum, applicators for **AQUATIC SUBSURFACE APPLICATIONS** must wear (Note: Mixers and loaders for this application method must still wear the PPE as described in the above section.):

- Short-sleeved shirt and short pants;
- Waterproof gloves; and
- Chemical-resistant footwear plus socks.

USER SAFETY REQUIREMENT

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROLS

Mixers and loaders supporting aerial applications are required to use closed systems that provide dermal protection. The closed system must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)]. When using the closed system, mixers and loaders' PPE requirements may be reduced or modified as specified in the WPS.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to aquatic invertebrates. **For Terrestrial Uses** do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters. **For Aquatic Uses** do not apply directly to water except as specified on this label.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read the entire label. Use strictly in accordance with precautionary statements and directions for use, and with applicable state and federal regulations.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. Do not apply this product through any type of irrigation system. Do not use this product for reformulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS) 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the WPS.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the WPS and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls over long-sleeve shirt and long pants;
- Chemical-resistant gloves
- Chemical-resistant footwear plus socks
- Protective eyewear, and
- Chemical-resistant headgear for overhead exposure

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Keep all unprotected persons out of operating areas or vicinity where there may be drift.

For terrestrial uses do not enter or allow entry of maintenance workers into treated areas, or allow contact with treated vegetation wet with spray dew or rain, without appropriate protective clothing until spray has dried.

For aquatic uses do not enter treated areas while treatments are in progress.

PRODUCT INFORMATION

This product is a nonvolatile herbicide for general weed control in:

- Commercial greenhouses and nurseries;
- Ornamental seed crops (flowers, bulbs, etc., except in the state of California);
- Landscape, industrial, recreational, commercial, residential, and public areas;
- Turf renovation (all turf areas except commercial sod farms);
- Dormant established turfgrass (Bermudagrass, zoysa grass, nonfood or feed crop); and
- Aquatic areas.

Absorption and herbicidal actions usually quite rapid with effects visible in a few days. This product controls weeds by interfering with photosynthesis that occurs within green plant tissue. Weeds should be succulent and/or actively growing for best results.

Rinse all spray equipment thoroughly with water after use. Avoid spray drift to crops, ornamentals, and other desirable plants during application as injury may result. Application to muddy water may result in reduced control. Minimize creating muddy water during aquatic application. Use of dirty or muddy water for diluting this product may result in reduced herbicidal activity. Avoid applying under conditions of high wind, water flow, or wave action.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interactions of many equipment and weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops:

- The distance of the outermost nozzles on the boom must not exceed $\frac{1}{4}$ the length of the wingspan or rotor; and
- Nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they must be observed.

Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions sections of this label).

Controlling Droplet Size

Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.

Number of Nozzles - Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

Boom Length

For some use patterns, reducing the effective boom length to less than $\frac{1}{4}$ of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height

Applications should not be made at a height greater than 10 feet above the top of the target plants, unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inverses on potential. Note: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity

When making applications in low relative humidity conditions set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas

The pesticide should only be applied when the wind is blowing away from adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops).

USE IN COMMERCIAL GREENHOUSES AND NURSERIES

For general weed control in commercial greenhouses (beneath benches), field grown and container stock, and other similar areas, this product may be applied before crop emergence either pre- or post-plant in field grown ornamental nursery plantings or post-emergence as a directed spray. This product may also be applied before crop emergence in ornamental seed crops (except in the state of California).

Avoid contact with desirable foliage as injury may occur. Do not use on food or feed crops.

Spot spray: Apply 1-2 quarts of this product plus the labeled rate of a 75% or greater nonionic surfactant per 100 gallons of water or 0.75 ounces (22 milliliters) of this product plus the labeled rate of a 75% or greater nonionic surfactant per 1 gallon of water.

Broadcast: Apply 1-2 pints of this product in a minimum of 15 gallons of water per acre. Add the labeled rate of a 75% or greater nonionic surfactant per 100 gallons of spray mixture. Use an adequate spray volume to insure good coverage.

USE IN ORNAMENTAL SEED CROPS (FLOWERS, BULBS, ETC.)

[EXCEPT IN THE STATE OF CALIFORNIA]

For pre-harvest desiccation of ornamental seed crops. NOT FOR FOOD OR FIBER CROPS.

Broadcast (Air or Ground): Apply 1.5-2 pints of this product plus the labeled rate of a 75% or greater nonionic surfactant per acre in sufficient water (minimum of 5 gallons by air, 15 gallons by ground) for desiccation and weed burndown. Repeat as needed at no less than at 5-day intervals, up to three applications. Do not use seed screenings or waste as feed or for consumption.

USE IN LANDSCAPE, INDUSTRIAL, RECREATIONAL, COMMERCIAL,

RESIDENTIAL, AND PUBLIC AREAS

Littora Landscape and Aquatic Herbicide provides fast control of broadleaf and grassy weeds in industrial, recreational, golf course, commercial, residential and public areas. This product is a nonselective herbicide that rapidly kills undesirable above ground weed growth in 24-36 hours. Avoid applications to desirable plants.

This product is a contact/desiccant herbicide. It is essential to obtain complete coverage of the target weeds to get good control. Improper application technique and/or application to stressed weeds may result in unacceptable weed control. For best results, apply to actively growing, young weeds. Difficult weeds (such as perennial or deeply-rooted weeds) can often be controlled by tank mixing this product with other systemic-type herbicides. Refer to other product labels for specific application directions.

For residual weed control, tank mix this product with a pre-emergent herbicide labeled for the intended use site. When mixing this product with another herbicide it is recommended to mix just a small amount to first determine if the mixture is physically compatible before proceeding with larger volumes.

SePRO Corporation has not tested all possible tank mixtures with other herbicides for compatibility, efficacy or other adverse effects. Before mixing with other herbicides SePRO Corporation recommends you first consult your state experimental station, state university or extension agent.

- **Grounds maintenance weed control:** This product can be used as a spot or broadcast spray to control weeds in public commercial and residential landscapes, including landscape beds, lawns, golf courses and roadsides. This product can also be used for weed control around the edges and non-flooded portions of ponds, lakes and ditches.
- **Trim and Edge weed control:** This product can be used to eliminate undesired grass and broadleaf plant growth in a narrow band along driveways, walkways, patios, cart paths, fence lines, and around trees, ornamental gardens, buildings, other structures, and beneath noncommercial greenhouse benches. Vegetation control with this product is limited to the spray application width. Do not exceed the labeled rate of this product as excessive rates may result in staining of concrete-based materials.

Since this product does not translocate systemically, can be used as an edging or pruning tool when precisely applied to select areas of grass or to undesirable growth on desirable ornamental bedding plants, ground covers, etc

- **Industrial weed control:** Littora Landscape and Aquatic Herbicide can be used as a spot or broadcast spray either alone or in combination with other herbicides as a fast burndown or control weeds in rights-of-ways, railroad beds, yards, highways, roads, dividers and medians, parking lots, pipelines, pumping stations, public utility lines, transformer stations and substations, electric utilities, storage yards and other non-crop areas.

Spot spray: Apply either 1-2 quarts of this product plus the labeled rate of a 75% or greater nonionic surfactant per 100 gallons water, or 0.75 ounces (22 milliliters) of this product plus the labeled rate of a 75% or greater nonionic surfactant per 1 gallon of water.

Broadcast: 1-2 pints of this product per acre in sufficient water to insure good spray coverage. Add the labeled rate of 75% or greater nonionic surfactant per 100 gallons spray mixture. Greater water volumes are necessary if the target plants are tall and/or dense. It is recommended that 60 gallons or greater water volume be used to obtain good coverage of dense weeds.

USE IN TURF RENOVATION (ALL TURF AREAS EXCEPT COMMERCIAL SOD FARMS)

To desiccate golf course turf and other turf areas prior to renovation, apply 1-2 pints of this product per acre plus the labeled rate of a 75% or greater nonionic surfactant in 20-100 gallons of water (4 teaspoons of this product plus the labeled rate of a 75% or greater nonionic surfactant per 1 gallon of water) using ground spray equipment. Apply for full coverage and thorough contact with the turfgrass. Apply only when the turf is dry, free from dew and incidental moisture. For enhanced turf desiccation especially in the case of thick turfgrass, water volumes should approach 100 gallons of water per acre.

For suppression of regrowth and quick desiccation of treated turfgrass this product may be mixed with other systemic, nonselective or systemic post-emergence grassy weed herbicides. Refer to other product labels for specific application directions and restrictions.

Avoid spray contact with, or spray drift to, foliage of ornamental plants or food crops. Do not graze livestock on treated turf or feed treated thatch to livestock.

USE IN DORMANT ESTABLISHED TURFGRASS (BERMUDAGRASS, ZOYSIAGRASS), NONFOOD OR FEED CROP

For control of emerged annual broadleaf and grass weeds, including little barley¹, annual bluegrass, bromes including rescuegrass, six-weeks fescue, henbit, buttercup, and Carolina geranium in established dormant Bermudagrass lawns, parks, golf courses, etc

Apply 1-2 pints of this product per acre in 20-100 gallons of spray mix by ground as a broadcast application. Add the labeled rate of a 75% or greater nonionic surfactant per 100 gallons of spray mixture.

Bermudagrass must be dormant at application. Application to actively growing Bermudagrass or Bermudagrass in transition may cause delay or permanent injury. Users in the extreme Southern areas should be attentive to the extent of dormancy at the time of application.

¹For control of little barley apply this product prior to the mid-boot stage.

USE IN AQUATIC AREAS

New York - Not for Sale or Use in New York State without Supplemental Special Local Needs Labeling.

Obtain Required Permits: Consult with appropriate state or local pesticide and/or water authorities before applying this product in or around public waters. Permits and posting or treatment notification may be required by state, tribal, or local public agencies.

Treatment of dense weed areas may result in oxygen loss from decomposition of dead weeds. This loss of oxygen may cause fish suffocation. Therefore, to minimize this hazard, do not treat more than 1/2 of the water body area at one time and wait 14 days between treatments when susceptible plants are mature and have grown to the water's surface, or when the treatment would result in significant reductions in total plant biomass. Waters having limited and less dense weed infestations may not require partial treatments.

For application only to still water (i.e. ponds, lakes, and drainage ditches) where there is minimal or no outflow to public waters.

and/or

For applications to public waters in ponds, lakes, reservoirs, marshes, bayous, drainage ditches, canals, streams, rivers, and other slow-moving or quiescent bodies of water for control of aquatic weeds. For use by:

- Corps of Engineers,
- Federal or State public agencies (i.e., Water Management District personnel, municipal officials) or
- Applicators and/or licensees (certified for aquatic pest control) that are authorized by the State or Local government.

Treated water may be used according to the water use restrictions set forth in Table 1 or when an approved assay or analytical method establishes that the water does not contain more than the designated maximum contaminant level goal (MCLG) of 0.02 mg/l (ppm) of diquat dibromide (calculated as the cation).

TABLE 1: WATER USE RESTRICTIONS FOLLOWING APPLICATION (Days)

Application Rate (gallons/surface acre)	Drinking	Fishing and Swimming	Livestock/ Domestic Animals Consumption	Irrigation to Turf and Landscape Ornamentals ¹	Irrigation to Food Crops and Production Ornamentals ¹
≥ 2	3 days	0	1 day	3 days	5 days
1	2 days	0	1 day	2 days	5 days
0.75	2 days	0	1 day	2 days	5 days
0.50	1 day	0	1 day	1 day	5 days
Spot Spray ² (< 0.5)	1 day	0	1 day	1 day	5 days

¹ Add a nonionic surfactant (with at least 75% of the constituents active as a spray adjuvant) at the rate recommended by the manufacturer.

² For preparing agricultural sprays for food crops, turf or ornamentals (to prevent phytotoxicity), do not use water treated with this product before the specified time period.

When the contents of more than one spray tank is necessary to complete a single aquatic application, no water holding restrictions apply between the consecutive spray tanks.

No applications are to be made in areas where commercial processing of fish resulting in the production of fish protein concentrate or fish meal, is practiced.

Floating and Marginal Weed Control

This product may be applied by backpack, airboat, spray handgun, helicopter, airplane, or similar application equipment that results in thorough spray coverage.

- cattails, *Typha* spp.
- duckweed, including *Lemna* spp.
- frog's bit¹, *Limnobium spongia*
- pennywort, *Hydrocotyle* spp.
- salvinia spp., including *Salvinia molesta*
- water hyacinth, *Eichhornia crassipes*
- water lettuce, *Pistia stratiotes*

¹ Not for use in California

Spot Treatment: Apply this product at 2 to 4 quarts per 100 gallons spray carrier (0.5 - 1.0% solution, with an approved aquatic surfactant or wetting agent at 0.25 - 1.0% v/v (1 quart to 1 gallon per 100 gallons water; refer to the surfactant label for product-specific rates). For cattail control, this product should be applied prior to flowering at the maximum application rate (8 quarts of this product/100 gallons spray carrier) plus the wetting agent. Repeat treatments may be necessary for complete control.

Spray to completely wet target weeds but not to runoff. Densely packed weeds or mats may require additional applications due to incomplete spray coverage. Re-treat as needed. For best results, re-treat weed escapes within 2 weeks of the initial treatment.

Broadcast Treatment: Apply this product at the rate of 0.5 - 2.0 gallons per surface acre in sufficient carrier along with 16-32 ounces per acre of an aquatic surfactant or wetting agent (refer to the surfactant label for product specific rates). Re-treat as necessary for densely populated weed areas. Good coverage is necessary for control of the target weeds.

For duckweed control, apply this product at 1 - 2 gallons/acre.

Submersed Weed Control

To control submersed weeds apply this product in water at 0.5 - 2.0 gallons per surface acre (per 4 foot water depth), or up to 0.5 gallons/acre foot in water with an average depth greater than 4 feet deep. For severe weed infestations or when treating more difficult to control species, use 0.5 gallons/acre foot of water. Refer to Table 2 for application rates.

- algae¹, *Spirogyra* spp. and *Pithophora* spp.
- bladderwort, *Utricularia* spp.
- Brazilian elodea, *Egeria densa*
- coontail, *Ceratophyllum demersum*
- watermilfoils, including Eurasian, *Myriophyllum* spp.
- elodea, *Elodea* spp.
- hydrilla, *Hydrilla verticillata*
- naiads, *Najas* spp.
- pondweeds¹, *Potamogeton* spp.

¹This product controls *Potamogeton* species except Richardson's pondweed (*P. richardsonii*).

²Suppression only. For control of *Spirogyra* and/or *Pithophora*, use this product in a tank mix with an approved algaecide.

TABLE 2: GALLONS OF PRODUCT PER SURFACE ACRE¹

Application Rate (gallons/acre)	Average Water Depth			
	1 Foot	2 Feet	3 Feet	4 Feet ¹¹
1	0.25 gal.	0.50 gal.	0.75 gal.	1.0 gal.
2	0.50 gal.	1.0 gal.	1.5 gals.	2.0 gals.

¹For water depths ≤ 2 feet including shorelines, do not exceed 1 gallon per surface acre.

¹¹In treatment areas with an average water depth greater than 4 feet, apply a maximum of 0.5 gallons per acre foot of water.

Subsurface Applications: Where the submersed weed growth, especially hydrilla, has reached the water surface, apply either in a water carrier or an invert emulsion through trailing hoses to apply the dilute spray below the water surface to insure adequate coverage.

Bottom Placement: Where submersed weeds such as hydrilla, bladderwort, or coontail are growing in deeper water and are less mature (e.g. not to the surface of the water) and/or where the water is slowly moving through the weed growth, the use of an application method (such as invert emulsion carrier or long-trailing hoses) to inject this product near the bottom with weighted hoses may improve control.

Surface Application for Submerged Aquatic Weeds: Apply the recommended rate of this product as a spray in sufficient carrier to fully cover the target area. Applications should be made to ensure complete coverage of the weed areas. In mixed weed populations, use the high rate of application as indicated by weeds present. For dense submersed weeds or water over 2 feet deep, a surface spray is not recommended (This product should be applied subsurface in these situations.)

Tank Mixes With Other Aquatic Herbicides/Algaecides: For severe weed or algae infestations, the use of an approved algaecide either as a pretreatment to the application of this product or in a tank mix, may result in enhanced weed control.

When tank mixing, read and follow the labeled precautionary statements, directions for use, weeds controlled, and other restrictions for each tank mix product. Use in accordance with the most restrictive label limitations and precautions of the products used in the tank mix. Do not exceed any labeled rate or dose. To ensure compatibility, a jar test is recommended before field application of any tank mix combination. Consult with SePRO Corporation for latest tank mix recommendations.

Littora Landscape and Aquatic Herbicide + Komeen®

The addition of Komeen, or other copper-based herbicides/algaecides, with this product may improve control on some species, such as hydrilla. For best results, apply 2 gallons this product in combination with 4 gallons of Komeen (0.6 lbs. a.i./gallon) per acre. For hydrilla control and control of other species with high sensitivity to copper, lower rates of Komeen may also enhance the activity of this product. Apply copper at a minimum of 0.1 ppm in combination with this product. Higher rates may be needed in areas with dense weeds.

Littora Landscape and Aquatic Herbicide + endothall

The addition of endothall with this product may improve control on some species, such as hydrilla. For best results, apply this product at 1 to 2 gallons per acre in combination with the dipotassium salt of endothall at 0.6 to 1.2 gallons/acre foot (i.e. 1 to 2.0 ppm a.i.). Higher rates may be used, but do not exceed the maximum allowed rate for either product.

NOTE: For Drinking (Potable) Water

- The drinking (potable) water restrictions for applications of this product plus endothall are to ensure that consumption of water by the public is allowed only when the concentration of endothall in the water is less than the MCL (Maximum Contamination Level) of 0.1 ppm. Applicators should consider the unique characteristics of the treated waters to assure that endothall concentrations in potable drinking water do not exceed 0.1 ppm at the time of consumption.
- For applications of this product plus endothall, the drinking water setback distance from functioning potable water intakes is ≥ 600 feet. Note: Existing potable water intakes that are no longer in use, such as those replaced by a connection to a municipal water system or a potable water well, are not considered to be functioning potable water intakes.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Pesticide Storage: Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Do not contaminate feed, foodstuffs, or drinking water. Do not store or transport near feed or food. Store at temperatures above 32°F.

Pesticide Disposal: Open dumping is prohibited. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Non-refillable Container Disposal (rigid, 5 gallons or less): Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat the procedure two more times. Then offer the container for recycling (if available) or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
CONTAINER IS NOT SAFE FOR FOOD, FEED, OR DRINKING WATER!

Warranty Disclaimer: SePRO Corporation warrants that this product conforms to the chemical description on the product label. Testing and research have also determined that this product is reasonably fit for the uses described on the product label. To the extent consistent with applicable law, SePRO Corporation makes no other express or implied warranty of fitness or merchantability nor any other express or implied warranty and any such warranties are expressly disclaimed.

Misuse: Federal law prohibits the use of this product in a manner inconsistent with its label directions. To the extent consistent with applicable law, the buyer assumes responsibility for any adverse consequences if this product is not used according to its label directions. In no case shall SePRO Corporation be liable for any losses or damages resulting from the use, handling or application of this product in a manner inconsistent with its label.

For additional important labeling information regarding SePRO Corporation's Terms and Conditions of Use, Inherent Risks of Use and Limitation of Remedies, please visit <http://seprolabels.com/terms> or scan the image below.




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SePRO Corporation
11550 North Meridian Street, Suite 600
Carmel, IN 46032, U.S.A.

Sonar[®] Genesis

Aquatic Herbicide



SPECIMEN

AN HERBICIDE FOR MANAGEMENT OF FRESHWATER AQUATIC VEGETATION IN PONDS, LAKES, RESERVOIRS, POTABLE WATER SOURCES, DRAINAGE CANALS AND IRRIGATION CANALS.

For use in New York State, comply with Section 24 (C) Special Local Need labeling for Sonar Genesis, SJN NY12006.

Active Ingredient
fluridone, 1-methyl-3-phenyl-5-[3-(trifluoromethyl)phenyl]-4,5,6-triazol-2-one

Other Ingredients
TOTAL

Contains 0.5 pounds active ingredient per gallon

Gross
Net
100.0%

Keep Out of Reach of Children

DANGER / PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

Refer to the inside of the label booklet for additional precautionary information and Directions for Use including Storage and Disposal.

NOTICE: Read the entire label before using. Use only according to label directions. Before buying or using this product, read *Terms and Conditions of Use, Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies* inside label booklet.

Sonar is a registered trademark of SePRO Corporation.
SePRO Corporation 11550 North Meridian Street, Suite 600
Carmel, IN 46032 U.S.A. EPA Reg. No. 67690-54 FPL20121219

Concentrated Formulation

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Corrosive Causes irreversible eye damage. Harmful if swallowed. Avoid contact with skin. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Wear long-sleeved shirt and long pants, socks, shoes, and chemical resistant gloves. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

KEEP OUT OF REACH OF CHILDREN

DANGER / PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

FIRST AID	
If in eyes	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If swallowed	<ul style="list-style-type: none"> Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
If on skin or clothing	<ul style="list-style-type: none"> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.	
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering life or property involving this product, call INFOTRAC at 1-800-535-5053.	

ENVIRONMENTAL HAZARDS

Do not apply to water except as specified on the label. Do not contaminate water by disposal of equipment washwaters. Lowest rates should be used in shallow areas where the water depth is considerably less than the average depth of the entire treatment site, for example, shallow shoreline areas. Trees and shrubs growing in water treated with Sonar Genesis aquatic herbicide may occasionally develop chlorosis. Follow use directions carefully so as to minimize adverse effects on non-target organisms.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Ensure spray drift to nontarget susceptible species does not occur.

DO NOT apply Sonar Genesis Aquatic Herbicide in any manner not specifically described in this label.

Observe all cautions and limitations on this label and on the labels of products used in combination with Sonar Genesis. DO NOT use Sonar Genesis other than in accordance with the instructions set forth on this label. Keep containers closed to avoid spills and contamination.

IN CASE OF EMERGENCY

In case of large-scale spillage regarding this product, call INFOTRAC at 1-800-535-5053.

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- INFOTRAC 1-800-535-5053

Steps to be taken in case material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing, and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

PRODUCT INFORMATION

Sonar Genesis is a selective systemic aquatic herbicide for management of freshwater aquatic vegetation in ponds, lakes, reservoirs, drainage canals and irrigation canals, including dry or de-watered areas of these sites. Sonar Genesis is absorbed from water by plant shoots and from hydrosol by the roots of aquatic vascular plants. For in-water treatments, it is important to maintain the specified concentration of Sonar Genesis in contact with the target plants for a minimum of 45 days. Rapid water movement or any condition which results in rapid dilution of Sonar Genesis in treated water will reduce its effectiveness. In susceptible plants, Sonar Genesis inhibits the formation of carotene. In the absence of carotene, chlorophyll is rapidly degraded by sunlight. Herbicidal symptoms of Sonar Genesis appear in seven to ten days and appear as white (chlorotic) or pink growing points in many susceptible plant species. Under optimum conditions, a minimum of 30 to 80 days may be required before the desired level of aquatic plant management is achieved. Plant species susceptibility to Sonar Genesis may vary depending on time of year, stage of growth, and water movement. For best results, apply Sonar Genesis prior to initiation of weed growth or when weeds begin active growth. Application to mature target plants may require an application rate at the higher end of the specified rate range and may take longer to control.

Sonar Genesis is not corrosive to application equipment.

This label provides recommendations on the use of a laboratory analysis for the active ingredient. SePRO Corporation recommends the use of high-performance liquid chromatography (HPLC) for the determination of fluridone concentrations in water. It is recommended to contact SePRO Corporation for the incorporation of this test, known as a FastEST, in a treatment program. FastEST is referenced in this label as the preferred method for the rapid determination of the active ingredient in water. Other proven chemical analyses for the active ingredient may also be used.

Application rates and calculations of Sonar Genesis are provided to achieve a desired concentration of fluridone in parts per billion (ppb). The maximum application rate or sum of all application rates is 90 ppb in ponds and 150 ppb in lakes, reservoirs and static canals per annual growth cycle. For purposes of Sonar Genesis labeling, a pond is defined as a body of water 10 acres or less in size. A lake or reservoir is greater than 10 acres. This maximum concentration is the amount of product calculated as the target application rate, NOT determined by testing the concentration of fluridone in the treated water.

Use Restrictions and Precautions

- Obtain Required Permits: Consult with appropriate state or local pesticide and/or water authorities before applying this product in or around public waters. Permits and posting or treatment notification may be required by state or local public agencies.
- Chemigation: Do not apply Sonar Genesis through any type of irrigation system.
- Hydroponic Farming: Do not use Sonar Genesis treated water for hydroponic farming unless a FastEST has been run and confirmed that concentrations are less than 1 ppb.
- Greenhouse and Nursery Plants: Consult with SePRO Corporation for site-specific recommendations prior to any use of Sonar Genesis treated water for irrigating greenhouse or nursery plants. Without site-specific guidance from SePRO, do not use Sonar Genesis treated water for irrigating greenhouse or nursery plants unless a FastEST has been run and confirmed that concentrations are less than 1 ppb.
- Water Use Restrictions Following Applications With Sonar Genesis (Days)

Application Rate	Drinking ¹	Fishing	Swimming	Livestock/Pet Consumption	Irrigation ²
Maximum Rate (150 ppb) or less	0	0	0	0	See irrigation instructions below

¹ Note below, under Potable Water Intakes, the information for application of Sonar Genesis within 1/4 mile (1,320 feet) of a functioning potable water intake.

² Note below, under Irrigation, specific time frames or fluridone concentrations that provide the widest safety margin for irrigating with treated water.

- Potable Water Intakes: In lakes and reservoirs or other sources of potable water, do not apply Sonar Genesis at application rates greater than 20 ppb within one-fourth mile (1,320 feet) of any functioning potable water intake. At application rates of 4 to 20 ppb, Sonar Genesis may be applied where functioning potable water intakes are present. NOTE: Existing potable water intakes which are no longer in use, such as those replaced by potable water wells or connections to a municipal water system, are not considered to be functioning potable water intakes.
- Irrigation: Irrigation from a Sonar Genesis treated area may result in injury to the irrigated vegetation. Follow these precautions and inform those who irrigate from areas treated with Sonar Genesis of the irrigation time frames or FastEST requirements presented in the table below. Follow the following time frames and assay directions to reduce the potential for injury to vegetation irrigated with water treated with Sonar Genesis. Greater potential for crop injury occurs where Sonar Genesis treated water is applied to crops grown on low organic and sandy soils.

Application Site	DAYS AFTER APPLICATION		
	Established Tree Crops	Established Row Crops/Turf Plants	Newly Seeded Crops/Seedbeds or Areas to be Planted Including Overseeded Golf Course Greens
Ponds and Static Canals ³	7	30	Assay required
Canals	7	14	Assay required
Lakes and Reservoirs ⁴	7	14	Assay required
Dry or De-watered Canals ⁵	0	0	***

³ For purposes of Sonar Genesis labeling, a pond is defined as a body of water 10 acres or less in size. A lake or reservoir is greater than 10 acres.

⁴ In lakes and reservoirs where one-half or greater of the body of water is treated, use the pond and static canal irrigation precautions. When applying Sonar Genesis to exposed sediments of aquatic sites such as lakes and reservoirs, follow these time frames prior to using water for irrigation once sites are reflooded.

^{†††} When Sonar Genesis is applied to exposed sediments of dry or de-watered irrigation canals, treatments must be made at least 2 weeks prior to when the canals are to be refilled, and allow canals to refill for a minimum of 24 hours before using water for irrigation.

Where the use of Sonar Genesis treated water is desired for irrigating crops prior to the time frames established above, the use of FastEST analysis is recommended to measure the concentration of fluridone in the treated water. Where a FastEST has determined that the fluridone concentrations are less than 10 parts per billion, there are no irrigation precautions for irrigating established tree crops, plants, row crops or turf. For tobacco, tomatoes, peppers or other plants within the Solanaceae Family and newly seeded crops or newly seeded grasses such as overseeded golf course greens, do not use Sonar Genesis treated water if measured fluridone concentrations are greater than 5 ppb. Furthermore, when rotating crops, do not plant members of the Solanaceae family in land that has been previously irrigated with fluridone concentrations in excess of 5 ppb in the previous year without direct consultation with a SePRO Aquatic Specialist. It is recommended that a SePRO Aquatic Specialist be consulted prior to commencing irrigation of these sites.

PLANT CONTROL INFORMATION

Sonar Genesis selectivity is dependent upon dosage, time of year, stage of growth, method of application and water movement. The following categories, controlled and partially controlled are provided to describe expected efficacy under ideal treatment conditions using higher to maximum label rates. Use of lower rates will increase selectivity of some species listed as controlled or partially controlled. Additional aquatic plants may be controlled, partially controlled, or tolerant to Sonar Genesis. It is recommended to consult a SePRO Aquatic Specialist prior to application of Sonar Genesis to determine a plant's susceptibility to the planned treatment.

Vascular Aquatic Plants Controlled by Sonar Genesis:

Submersed Plants:

bladderwort (*Utricularia* spp.)
common coontail (*Ceratophyllum demersum*)
common elodea (*Elodea canadensis*)
egeria, Brazilian elodea (*Egeria densa*)
tarnwort, cabomba (*Cabomba caroliniana*)
hydrilla (*Hydrilla verticillata*)
najas (*Najas* spp.)
pondweed (*Potamogeton* spp., except Illinois pondweed)
watermilfoil (*Myriophyllum* spp., including *M. spicatum* x *sibiricum* hybrids)

Emerged Plants:

spatterdock (*Nuphar luteum*)
water lily (*Nymphaea* spp.)
watershield (*Brasenia schreberi*)

Floating Plants:

common duckweed (*Lemna minor*)
Sagittaria (*Sagittaria* spp.)

Vascular Aquatic Plants Partially Controlled by Sonar Genesis:

Submersed Plants:

Illinois pondweed (*Potamogeton illinoensis*)
limnophila (*Limnophila sessiliflora*)
tapegrass, American regrass (*Vallisneria spiralis*)

Emerged Plants:

alligatorweed (*Alternanthera philoxeroides*)
American lotus (*Nelumbo lutea*)
cattail (*Typha* spp.)
creeping waterprimrose (*Luchwiga peploides*)
parrotfeather (*Myriophyllum aquaticum*)
smartweed (*Polygonum* spp.)
spikerush (*Eleocharis* spp.)
waterpurslane (*Luchwiga pedunculata*)

Floating Plants:

common watermeal (*Wolffia columbiana*)[†]

Shoreline Grasses:

barnyardgrass (*Echinochloa crus-galli*)
giant cutgrass (*Zizaniopsis milacea*)
reed canarygrass (*Phalaris arundinacea*)
southern watergrass (*Hydrochloa carolinensis*)
torpedograss (*Panicum repens*)

[†] Consult with a SePRO Aquatic Specialist about techniques to enhance efficacy of watermeal including incorporation of Galeon S.C. Aquatic Herbicide into a Sonar Genesis treatment program, in difficult to control sites.

MIXING AND APPLICATION DIRECTIONS

The aquatic plants present in the treatment site should be identified prior to application to determine their susceptibility to Sonar Genesis. It is important to determine the area (acres) to be treated and the average depth in order to select the proper application rate. Do not exceed the maximum labeled rate for a given treatment site per annual growth cycle.

Sonar Genesis may be applied or metered directly into the treated area or diluted with water prior to application. Add the specified amount of Sonar Genesis to water in the spray tank during the filling operation. Surface and subsurface application of the spray can be made with conventional spray equipment. Sonar Genesis can also be applied near the surface of the hydrosol using weighted trailing hoses. A minimum spray volume of 5 to 100 gallons per acre may be used. Sonar Genesis may also be directly metered into the pumping system where it is diluted with water.

Tank Mix Directions

Sonar Genesis may be tank mixed with other aquatic herbicides and algaecides to enhance efficacy and plant selectivity provided that this label does not prohibit such mixing. When tank mixing, read and follow the labeled precautionary statements, directions for use, weeds controlled, and other restrictions for each tank mix product. Use in accordance with the most restrictive label limitations and precautions of the products used in the tank-mix. No labeled rate or dose should be exceeded. To ensure compatibility, a jar test is recommended before field application of any tank mix combination. It is recommended to consult with SePRO Corporation for latest tank mix recommendations.

NOTE: Tank mixing or use of Sonar Genesis with any other product which is not specifically and expressly authorized by the label shall be at the exclusive risk of the user, applicator and/or application adviser, to the extent allowed by applicable law.

Application Rate Calculation

The amount of Sonar Genesis to be applied to provide the desired ppb concentration of active ingredient in treated water may be calculated as follows:

Sonar Genesis gallons required per treated surface acre = surfaces area X average water depth of treatment site (feet) x desired ppb concentration of active ingredient x 0.0054

For example, the amount per acre of Sonar Genesis required to provide a concentration of 30 ppb of active ingredient in a 1 acre pond with an average depth of 5 feet is calculated as follows:

$$1 \text{ acre} \times 5 \text{ feet} \times 30 \text{ ppb} \times 0.0054 = 0.81 \text{ gallons per treated surface acre}$$

$$\text{or}$$

$$0.81 \text{ gallons} \times 4 \text{ quarts/gallon} = 3.2 \text{ quarts per treated surface acres}$$

$$\text{or}$$

$$0.81 \text{ gallons} \times 128 \text{ ounces/gallon} = 104 \text{ ounces per treated surface acre}$$

Application to Ponds

Sonar Genesis may be applied to the entire surface area of a pond. For single applications, rates may be selected to provide 30 to 90 ppb in the treated water. Use the higher rate within the rate range where there is a dense weed mass, when treating more difficult to control species, and for ponds less than 5 acres in size with an average depth less than 4 feet. Application rates necessary to obtain these concentrations are shown in the following table. For additional application rate calculations, refer to the Application Rate Calculation section of this label. Split or multiple applications may be used to control more difficult target plants and/or where dilution of treated water is anticipated; however, the sum of all applications must not exceed a total of 90 ppb per annual growth cycle.

Average Water Depth of Treatment Site (feet)	Gallons of Sonar Genesis per Treated Surface Acre [†]	
	30 ppb	90 ppb
1	0.16	0.48
2	0.32	0.97
3	0.48	1.45
4	0.64	1.94
5	0.81	2.43
6	0.97	2.91
7	1.13	3.40
8	1.29	3.88
9	1.45	4.37
10	1.62	4.86

[†] To calculate the number of quarts of Sonar Genesis required, use the calculation as follows: gallons per surface acre x 4 quarts/gallon = quarts per surface acre

For example, targeting a concentration of 30 ppb in a one acre pond with average depth of 5 feet would require 0.81 gallons or 3.2 quarts.

Application to Lakes and Reservoirs

The following treatments may be used for treating both whole lakes or reservoirs and partial areas of lakes or reservoirs (bays, etc.). For best results in treating partial lakes and reservoirs, Sonar Genesis treatment areas should be a minimum of 5 acres in size. Treatment of areas smaller than 5 acres or treatment of narrow strips such as boat lanes or shorelines may not produce satisfactory results due to dilution by untreated water. Rate ranges are provided as a guide to include a wide range of environmental factors, such as, target species, plant susceptibility, selectivity and other aquatic plant management objectives. Application rates and methods should be selected to meet the specific lake/reservoir aquatic plant management goals.

A. Whole Lake or Reservoir Treatments (Limited or No Water Discharge)

Single Application to Whole Lakes or Reservoirs

Where single applications to whole lakes or reservoirs are desired, apply Sonar Genesis at an application rate of 10 to 90 ppb. Application rates necessary to obtain these concentrations in treated water are shown in the following table. For additional rate calculations, refer to the Application Rate Calculation section of this label. Choose an application rate from the table below to meet the aquatic plant management objective. Where greater plant selectivity is desired such as when controlling Eurasian watermilfoil and curlyleaf pondweed, choose an application rate lower in the rate range. For other plant species, it is recommended to contact a SePRO Aquatic Specialist for determining when to choose application rates lower in the rate range to meet specific plant management goals. Use the higher rate within the rate range where there is a dense weed mass or when treating more difficult to control plant species. Retreatments may be required to control more difficult to control species or in the event of a heavy rainfall event where dilution of the treatment concentration has occurred. In these cases, a second application or more may be required, however, the sum of all applications cannot exceed 150 ppb per annual growth cycle. Refer to the section of this label entitled, Split or Multiple Applications to Whole Lakes or Reservoirs, for guidelines and maximum rate allowed.

SINGLE APPLICATION OF Sonar Genesis		
Average Water Depth of Treatment Site (feet)	Gallons of Sonar Genesis per Treated Surface Acre to Achieve [†]	
	10 ppb	90 ppb
1	0.05	0.48
2	0.10	0.97
3	0.16	1.45
4	0.21	1.94
5	0.27	2.43
6	0.32	2.91
7	0.37	3.40
8	0.43	3.88
9	0.48	4.37
10	0.54	4.86

[†] To calculate the number of quarts of Sonar Genesis required, use the calculation as follows: gallons per surface acre x 4 quarts/gallon = quarts per surface acre

For example, targeting a dose of 10 ppb in a 20 acre lake with average depth of 5 feet would require 0.27 gallons per surface acre or 1.0 quarts.

Split or Multiple Applications to Whole Lakes or Reservoirs

To meet certain plant management objectives, split or multiple applications may be desired in making whole lake treatments. Split or multiple application programs are desirable when the objective is to use the minimum effective dose and, through the use of a water analysis, e.g. FastTEST, add additional Sonar Genesis to maintain this lower dose for the sufficient time to ensure efficacy and enhance selectivity. Water may be treated at an initial application concentration of 4 to 50 ppb. Additional split applications should be conducted to maintain a sufficient concentration for a minimum of 45 days or longer. In controlling Eurasian watermilfoil and curlyleaf pondweed and where greater plant selectivity is desired, choose an application rate lower in the rate range. For other plant species, it is recommended to contact a SePRO Aquatic Specialist for assistance in selecting the appropriate concentrations and timing of application to meet specific plant management goals. When utilizing split or multiple applications of Sonar Genesis, the utilization of FastTEST is strongly recommended to determine the actual concentration in the water over time. For split or multiple applications, the sum of all applications must not exceed 150 ppb per annual growth cycle.

NOTE: In treating lakes or reservoirs that contain functioning potable water intakes and the application requires treating within ¼ mile of a potable water intake, no single application can exceed 20 ppb. Additionally, the sum of all applications cannot exceed 150 ppb per annual growth cycle.

B. Partial Lake or Reservoir Treatments

Where dilution of Sonar Genesis with untreated water is anticipated, such as in partial lake or reservoir treatments, split or multiple applications may be used to extend the contact time to the target plants. The application rate and use frequency of Sonar Genesis in a partial lake is highly dependent upon the treatment area. An application rate at the higher end of the specified rate range may be required and frequency of applications will vary depending upon the potential of untreated water diluting the Sonar Genesis concentration in the treatment area. Use a rate at the higher end of the rate range where greater dilution with untreated water is anticipated.

Treatment Areas Greater Than ¼ Mile from a Functioning Potable Water Intake

For single applications, apply Sonar Genesis at application rates from 30 to 150 ppb. Split or multiple applications may be made; however, the sum of all applications cannot exceed 150 ppb per annual growth cycle. Split applications should be conducted to maintain a sufficient concentration in the target area for a period of 45 days or longer. The use of a FastTEST is recommended to maintain the desired concentration in the target area over time.

Treatment Areas Within ¼ Mile of a Functioning Potable Water Intake

In treatment areas that are within ¼ mile of a potable water intake, no single application can exceed 20 ppb. When utilizing split or multiple applications of Sonar Genesis for sites which contain a potable water intake, a FastTEST is required to determine the actual concentration in the water. Additionally, the sum of all applications cannot exceed 150 ppb per annual growth cycle.

Application to Sediments of Dry or De-Watered Aquatic Sites

For application of Sonar Genesis to sediments of dry or de-watered aquatic sites, including exposed sediments of lakes or reservoirs, irrigation canals, non-irrigation canals and drainage canals, apply a maximum of 4 gallons of Sonar Genesis per surface acre per annual growth cycle. Apply Sonar Genesis evenly to the sediment surface, with a minimum spray solution of 30 to 100 gallons per surface acre. High levels of organic matter in treated sediments may reduce efficacy. Sonar Genesis may be applied with other aquatic herbicides labeled for this use. It is recommended that a SePRO Aquatic Specialist be consulted for further use recommendations.

Direct foliar application to floating, topped-out and emerged aquatic vegetation

For application of Sonar Genesis to floating, topped out and emerged aquatic vegetation in ponds, lakes, reservoirs, drainage canals and irrigation canals, including dry or de-watered areas of these sites, apply a maximum of 4 gallons of Sonar Genesis per surface acre per annual growth cycle. Apply Sonar Genesis evenly to the treatment area using properly calibrated broadcast equipment in a minimum spray solution of 20 to 100 gallons per surface acre. For treatment of vegetation in or on water, do not exceed a water concentration of 150 ppb. Spot treatments can be made with up to 5% Sonar Genesis by volume when application rate does not exceed 4 gallons Sonar Genesis per surface acre. It is recommended that a SePRO Aquatic Specialist be consulted for site specific recommendations.

Application to Drainage Canals and Irrigation Canals

Static Canals

In static drainage and irrigation canals, apply Sonar Genesis at the rate of 30 to 150 ppb per treated surface acre. The maximum application rate or sum of all application rates cannot exceed 150 ppb per annual growth cycle.

Moving Water Canals

In slow moving bodies of water use an application technique that maintains a concentration of 10 to 40 ppb in the target area for a minimum of 45 days. Sonar Genesis can be applied by split or multiple broadcast applications or by metering in the product to provide a uniform concentration of the herbicide based upon the flow pattern. The use of a FastTEST is recommended to maintain the desired concentration in the target area over time.

Static or Moving Water Canals Containing a Functioning Potable Water Intake

In treating a static or moving water canal which contains a functioning potable water intake, applications of Sonar Genesis greater than 20 ppb must be made more than ¼ mile from a functioning potable water intake. Applications less than 20 ppb may be applied within ¼ mile from a functioning potable water intake, however, if applications of Sonar Genesis are made within ¼ mile of a functioning potable water intake, a FastTEST analysis must be utilized to demonstrate that concentrations do not exceed 150 ppb at the functioning potable water intake.

Application Rate Calculation – Moving Water Drainage and Irrigation Canals

The amount of Sonar Genesis to be applied through a metering system to provide the desired ppb concentration of active ingredient in treated water may be calculated as follows:

1. Average flow rate (feet per second) x average canal width (ft.) x average canal depth (ft.)
= CFS (cubic feet per second)
2. CFS x 1.98 = acre feet per day (water movement)
3. Acre feet per day x desired ppb x 0.0054 = Gallons Sonar Genesis required per day

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

Pesticide Storage. Keep from freezing. Store in original container only. Do not store near feed or foodstuffs. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.

Pesticide Disposal. Wastes resulting from use of this product may be used according to label directions or disposed of at an approved waste disposal facility.

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake (capacity > 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable Container. Refill this container with pesticide only. DO NOT reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use. Return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. DO NOT transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

TERMS AND CONDITIONS OF USE

If terms of the following *Warranty Disclaimer, Inherent Risks of Use and Limitation of Remedies* are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. Otherwise, to the extent consistent with applicable law, use by the buyer or any other user constitutes acceptance of the terms under *Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies*.

WARRANTY DISCLAIMER

SePRO Corporation warrants that the product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, SEPRO CORPORATION MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

INHERENT RISKS OF USE

It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of SePRO Corporation or the seller. To the extent consistent with applicable law all such risks shall be assumed by buyer.

LIMITATION OF REMEDIES

To the extent consistent with applicable law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories) shall be limited to, at SePRO Corporation's election, one of the following:

- (1) Refund of purchase price paid by buyer or user for product bought, or
- (2) Replacement of amount of product used

To the extent consistent with applicable law, SePRO Corporation shall not be liable for losses or damages resulting from handling or use of this product unless SePRO Corporation is promptly notified of such losses or damages in writing. In no case shall SePRO Corporation be liable for consequential or incidental damages or losses.

The terms of the *Warranty Disclaimer, Inherent Risks of Use and this Limitation of Remedies* cannot be varied by any written or verbal statements or agreements. No employee or sales agent of SePRO Corporation or the seller is authorized to vary or exceed the terms of the *Warranty Disclaimer* or this *Limitation of Remedies* in any manner.

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SePRO Corporation
11550 North Meridian Street, Suite 600
Carmel, IN 46032



SePRO Corporation
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Carmel, IN 46032, U.S.A.

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
Division of Environmental Health
Pesticide Control Program

ATTACHMENT 6: PRODUCT SAFETY DATA SHEETS



Conforms to HazCom 2012/United States

SDS

Littora

SAFETY DATA SHEET



Littora®

Landscape and Aquatic Herbicide

Section 1. Identification

Product name : Littora® Landscape and Aquatic Herbicide

Other means of identification : EPA Registration Number 67690-53

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 : 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

Classification: Eye Damage 1
Skin irritation 2
Acute Tox. 3
Oral, Skin Sensitization I
Acute Tox. 2
Inhalation, STOT SE 3, STOT RE 1
Aquatic Acute 1
Aquatic Chronic 3

Hazard statement: Causes serious eye damage; Causes skin irritation; Toxic if swallowed; May cause an allergic skin reaction, Fatal if inhaled; May cause respiratory irritation; Cause damage to organs through prolonged or repeated exposure; Very toxic to aquatic life; Harmful to aquatic life with long lasting effects

Signal Word: Danger

Hazard Pictograms:



GHS07



GHS08



GHS09



GHS06

Precautionary statements:	Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/ protective clothing/ eye protection/face protection. Rinse mouth.
IF SWALLOWED	Call a POISON CENTER or doctor/ physician if you feel unwell. Dispose of contents/ container in accordance with local/ regional/national/international regulation.
IF ON SKIN	Wash with plenty of soap and water. If skin irritation occurs. Get medical advice/attention. Specific treatment (Reference to supplemental first aid instruction on the label). Take off contaminated clothing and wash before reuse.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Avoid breathing dust/fume/gas/mist/vapors/ spray. Contaminated work clothing should not be allowed out of the workplace.
IF ON SKIN	Wash with plenty of soap and water. If skin irritation or rash occurs. Get medical advice/attention.
IF INHALED	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Store locked up. Do not eat, drink or smoke when using this product. Get medical advice/ attention if you feel unwell. Avoid accidental release to the environment. Wash contaminated clothing before reuse. Wear respiratory protection. Immediately call a POISON CENTER or doctor/physician. Specific treatment is urgent (see if immediate administration of antidote is required on this label). Call a POISON CENTER or doctor/physician if you feel unwell. Store in a well-ventilated place. Keep container tightly closed. Do not breathe dust/fume/ gas/mist/ vapors/spray. Use only outdoors or in a well-ventilated area.

Hazard Ratings: NFPA

Health: 4
Flammability: 0
Reactivity: 0

Hazard Ratings: HMIS

Health: 4
Flammability: 0
Reactivity: 0



Routes of Entry: Ingestion, Inhalation, eye, and dermal contact.

Section 3. Composition/information on ingredients

List of raw materials in the mixture with hazardous/non-hazardous additional

% Conc.	CAS No.	Substance Name
91.42%	85-00-7	Diquat Concentrate
8.58%	7732-18-5	Water

No major known impurity have Carcinogen, Mutagen & Reprotoxic (CMR) classification which can contribute to the Classification & Labelling of the chemical.

Section 4. First aid measures

Description of first aid measures

General information:	Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; medical observation for at least 48 hrs after the accident is recommended. Remove breathing apparatus only after contaminated clothing have been completely removed. In case of irregular breathing or respiratory arrest provide artificial respiration.
Inhalation:	Remove source of contamination or move victim to fresh air. Keep victim warm and at rest. Treat symptomatically and supportively. Obtain medical advice if necessary.
Skin contact:	Remove contaminated clothing, shoes and leather goods. Wash skin gently and thoroughly with water and non-abrasive soap. Persons who become sensitized may require specialized medical management with anti-inflammatory agents.
Eye contact:	Immediately flush the eyes with gently flowing lukewarm water or saline solution for 20 minutes, occasionally lifting the upper and lower lids. Specialized ophthalmologic treatment might be required.
Oral:	Do not induce emesis. Seek medical advice.
Important Symptoms & Effects:	Possible symptoms are as per the hazard identified in section 2 of the SDS, known symptoms being skin and eye irritation, causing redness and pain.
Immediate Medical Attention:	Notes for the doctor: There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. For 24-hour emergency assistance call INFOTRAC at 1-800-535-5053.

Section 5. Fire-fighting measures

Suitable Extinguishing Media: Water, foam, carbon dioxide

Special hazards arising from the chemical: Carbon oxides, Hydrogen chloride gas, nitrogen oxides (NO_x)

Special protective equipment and precautions for firefighters: As in any fire, wear full protective clothing and self-contained breathing apparatus with full face piece operated in pressure-demand or other positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Protective equipment: Wear appropriate protective eyeglasses, splash goggles or chemical safety goggles and appropriate respiratory equipment. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls as appropriate to prevent skin contact.



- Emergency procedures:** Remove an incapacitated worker from further exposure. Keep Personal unconscious victims warm and on their sides to avoid choking if vomiting occurs. Initiate precautions, the measures / procedures as mentioned in Section 4.
- Removal of ignition sources:** Disconnect electrical connection and all other sources of equipment and ignition.
- Provision of sufficient ventilation:** Adequate ventilation should be provided when procedures accidental release occurs.
- For emergency responders:** Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Do not touch the spilled material. Avoid the spread of the spillage by using adsorbents, if this can be done without risks. Ground all equipment containing material.
- Methods and material for containment and cleaning up**
- Cleaning techniques:** Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.
- Vacuuming techniques:** Sweep or vacuum up spillage and collect in suitable container for disposal
- Equipment required for containment/clean-up:** Use approved industrial vacuum cleaner for removal. Shovel into suitable container for disposal.

Section 7. Handling and storage

Precautions for safe handling

- Recommendations:** Read label carefully before use. Avoid contact with skin, eyes or clothing. Avoid breathing dust. Remove personal protective equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Conditions for safe storage, including any incompatibilities

- How to manage risks associated with storage:** Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco product in the storage area. Prevent eating, drinking, tobacco use and cosmetic application in areas where there is a potential for exposure to the including any material. Wash thoroughly with soap and water after handling
- Other advice including:** Do not contaminate water, food, or feed by storage or disposal. Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Section 8. Exposure controls/personal protection

Medium – AIR Specification – Work Place	
Country	Exposure limit description
Australia	Threshold limit value (TLV) Time-weighted average (TWA) = 0.5 mg/m ³ Short-term exposure limit (STEL) = 1 mg/m ³

Belgium	Threshold limit value (TLV) Time-weighted average (TWA) = 0.5 mg/m ³ Short-term exposure limit (STEL) = 1 mg/m ³
Bulgaria	Maximum permissible concentration Time weighted average (TWA) = 0.5 mg/m ³
Finland	Threshold limit value (TLV) Time-weighted average (TWA) = 0.5 mg/m ³ Short-term exposure limit (STEL) = 1.5 mg/m ³
Switzerland	Maximum work-site concentration (MAK) Time-weighted average (TWA) = 0.5 mg/m ³
USA (OSHA)	Permissible exposure limit (PEL) Time-weighted average (TWA) = 0.5 mg/m ³
USA (ACGIH)	Threshold limit value (TLV) Time-weighted average (TWA) = 0.5 mg/m ³
United Kingdom	Recommended limit (RECL) 8-h time-weighted average (TWA) = 0.5 mg/m ³ Short-term exposure level (STEL) = 1 mg/m ³ (10-min time-weighted average)

Exposure Controls

Appropriate engineering controls:

A system of general or local exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value needs to be provided. Ensure that eyewash stations and safety showers are proximal to the work-station location. Do not release to the atmosphere or water streams.

Individual protection measures:

Eye / face protection:

Wear appropriate protective eyeglasses, splash goggles or chemical safety goggles and face shield

Skin protection:

wear appropriate protective clothing like impervious lab coat, apron or coveralls.

Hand protection: Use compatible chemical / solvent resistant protective gloves made of suitable materials like rubber, plastic, etc.

Other: Wear appropriate boots and other footwear.

Respiratory Protection:

In case of a brief exposure or low pollution, use respiratory filter device. In case of intensive or longer exposure, use self-contained respiratory protective device. Short term filter device: Filter AX. In case of emergency spills, use a NIOSH approved respirator with any N, R, P, or HE filter.

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.

Section 9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Liquid
Color:	None
Auto-ignition temperature:	Not applicable
pH of liquid formulation:	4.5
Partition coefficient (n-octanol/water):	3.05
Boiling Point:	> 200°C
Bulk Density:	10.1 lb/gal at 240°C
Vapour pressure:	1.67 mPa (25°C)
Flammability (solid, gas):	Not applicable
Explosion limits:	
Lower:	Not applicable
Upper:	Not applicable
Solubility (ies):	(Water) 6.1 g/L (25°C)
Relative Density:	1.5 at 25°C

Section 10. Stability and reactivity

Reactivity	Not known
Chemical stability	Stable at normal temperature and pressure
Possibility of hazardous reactions	No information known
Conditions to avoid	Not known
Incompatible materials:	It poses a fire and explosion hazard in the presence of strong oxidizers
Hazardous decomposition products:	Thermal decomposition of diquat dibromide will release toxic oxides of nitrogen and carbon and toxic and corrosive fumes of bromides

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity:	Acute oral toxicity 4 Acute inhalation toxicity 2
Skin corrosion/irritation:	Irritant to skin in category 2
Serious eye damage / irritation:	Eye irritant in category 2
Respiratory or skin sensitization:	Skin sensitizing in category 1
Carcinogenicity:	No known evidence
Reproductive toxicity:	No known evidence
STOT - single exposure:	STOT SE 1
STOT- repeated exposure:	STOT RE 1

**Numerical measures of toxicity (such as acute toxicity estimates)**

Oral LD50	120 mg/kg in rats 233 mg/ kg in mice 188 mg/ kg in rabbits
Inhalation:	Inhalation of diquat dibromide may cause coughing and sore throat. Exposing the skin and eyes may cause redness and pain.
Neurotoxicity:	No evidence for neurotoxic effects in rats dosed up to 400 ppm ion in the diet for 13 weeks.; but symptoms of headache; confusion, excitement, mania, disorientation, emotional ability; Depression, stupor, coma, respiratory failure, often without convulsions. Intense nausea, vomiting and diarrhea may occur.
Reproductive Effects:	Mutagenicity No evidence in the in vivo assays; Rats receiving 25 mg/kg decreased their food intake and showed slowed growth, but had unchanged reproduction.
Development Toxicity:	In rabbit studies, a small percentage of fetuses had minor defects at 3 and 10 mg ion/kg/d
Chronic/Subchronic Toxicity Studies:	Kidney weight decreases and cataracts seen in dogs at 12.5 mg ion/kg/d
Eye irritation:	Cataracts, a clouding of the eyes which interferes with light entering the eye, occurred in rats and dogs given 2 .5 mg/kg and 5 mg/kg of diquat dibromide, respectively.
Skin irritation:	The effects of repeated, or prolonged, dermal contact with diquat dibromide range from inflammation of the skin, to general bodily ('systemic') poisoning, as evidenced by injury to internal organs, primarily the kidneys. Repeated applications of 42 mg/kg of diquat dibromide killed four out of six rabbits tested. While rats fed 50 mg/kg of diquat dibromide for two years did not die from testing, their food intake and growth was decreased.
STOT RE:	Repeated inhalation exposure of rats to 1.9 mg/m ³ caused inflammatory changes in connective tissues, damage to the kidneys and heart, abnormal levels of several liver enzymes, low white blood cell counts, high red blood cell counts, and depressed cholinesterase activity.

Chemical if, listed in NTP or IARC or by OSHA as Carcinogens

Diquat dibromide is not classified as a tumor-causing chemical. An 80-week feeding study showed that dietary doses of 15 mg/kg/day of diquat dibromide did not cause tumors in rats. Likewise, dietary levels of 36 mg/kg/day for two years did not induce tumors in rats.

Other Information Product shows following danger according to internally approved calculation methods for preparation:

Very Toxic
Dangerous for the environment

Section 12. Ecological information

Eco – Toxicity

Freshwater Algae Data:	96 Hr EC50 Selenastrum capricornutum = 0.011 mg/L
Water Flea Data:	48 Hr EC50 Daphnia magna = 1.2 mg/L
Rainbow Trout	96-hour LC50 = 21 mg/L
Mirror Carp	96 hours LC50 = 67 mg/L

**Persistence and Degradability****Probability of Rapid Biodegradation (BIOWIN v4.10):**

Biowin1 (Linear Model Prediction): Biodegrades Fast
Biowin2 (Non-Linear Model Prediction): Does Not Biodegrade Fast
Biowin3 (Ultimate Biodegradation Timeframe): Weeks-Months
Biowin4 (Primary Biodegradation Timeframe): Days-Weeks
Biowin5 (MITI Linear Model Prediction): Does Not Biodegrade Fast
Biowin6 (MITI Non-Linear Model Prediction): Does Not Biodegrade Fast
Biowin7 (Anaerobic Model Prediction): Does Not Biodegrade Fast
Ready Biodegradability Prediction: NO
Ready Biodegradability Prediction: Does Not Biodegrade Fast

Bioaccumulative Potential**Summary Results:**

Log BCF (regression-based estimate): 0.50 (BCF = 3.16 L/kg wet-wt)
Biotransformation Half-Life (days): 0.0076 (normalized to 10 g fish)
Log BAF (Arnot-Gobas upper trophic): -0.05 (BAF = 0.893 L/kg wet-wt)

Environmental Fate (Exposure)**Persistence:**

Typical half-life is 1000 d. Diquat dibromide is highly persistent due to strong binding to clay and unavailability to microbes. Diquat dibromide in soil is not taken up by plants, so any crop can be seeded at any time after application.

Mobility:

Immobile in soil (Diquat)

Level III Fugacity Model:

	Mass Amount (%)	Half-Life (hr)	Emissions (kg/hr)
Air	1.05e-005	11	1000
Water	10.3	900	1000
Soil	84.1	1.8e+003	1000
Sediment	5.57	8.1e+004	0

Persistence Time: 1.95e+003 hr
Reaction Time: 2.45e+003 hr
Advection Time: 9.56e+003 hr
Percent Reacted: 79.6
Percent Advected: 20.4

Other adverse effects: This product is not a PBT chemical

Section 13. Disposal considerations

Waste treatment containers and methods**Waste Disposal Method:**

Product disposal- Pesticide wastes may be acutely hazardous. Improper disposal is a violation of federal law. Pesticide mixtures, or equipment rinse water that cannot be chemically reprocessed must be disposed of according to applicable federal, state or local regulations. Contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional office for guidance.

Container disposal:

Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

Sewage disposal:

Sewage disposal shall be discouraged.

Additional Information:

RCRA HAZARD CLASS: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

Section 14. Transport information

UN Number:

UN3082



UN proper shipping name:

ADR: 3082 - Environmentally hazardous substance, liquid toxic, n.o.s (diquat dibromide),

DOT: Environmentally hazardous substance, liquid toxic, n.o.s (diquat dibromide)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (diquat dibromide), MARINE POLLUTANT

IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID TOXIC, N.O.S (diquat dibromide)

Transport hazard class(es):

9 Miscellaneous dangerous substance and articles

Packing group:

III

Environmental hazards
(e.g., Marine pollutant):

Yes

Special precautions for user:

Warning: Miscellaneous dangerous substance and articles

Danger code (kemler):

90

EMS number:

F-A, S-F

Quantity specification: Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not applicable

Section 15. Regulatory information**Safety, health and environmental regulations/legislation**

Hazard statements:

Harmful if inhaled. Harmful if swallowed. Causes moderate eye irritation.

Signal word:

CAUTION

Precautionary statements:

Avoid breathing spray mist. Avoid contact with eyes or clothing.

Other regulations:

Listed /not listed within
the following regulationCERCLA/SARA 302 Reportable Quantity (RQ) Report product spills \geq 250 gal. (based on diquat [RQ = 1,000 lbs.] content in the formulation)

Sara- section 355 (extremely hazardous substance) Not listed



SDS

Littora

TSCA (TOXIC SUBSTANCE CONTROL ACT) -listed
EU CLP Regulation (EC) No 1272/2008 -listed
Proposition 65 (chemical known to cause cancer): Not listed
Proposition 65 (chemical known to cause reproductive toxicity for females/ males): Not listed
U.S. EPA Carcinogens - Unlikely
TLV: ACGIH: listed
NIOSH - Ca (National Institute of Occupational Health and Safety): Not listed
OSHA - Ca (Occupational Health and Safety Administration) : Not listed

Section 16. Other information

Date of Issue: 08 June 2016

Abbreviations and acronyms:

OSHA:	Occupational Safety and Health Administration
GHS:	Globally harmonized system on classification and labelling
TWA:	Time Weighted Average
STEL:	Short Term Exposure Limit
PEL:	Permissible Exposure Limits
ACGIH:	American Conference of Governmental Industrial Hygienists
NIOSH:	National Institute for Occupational Safety and Health
TLV:	Threshold Limit Value
MARPOL:	Marine pollution
IBC Code:	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IARC:	International Agency for Research on Cancer
NTP:	National Toxicology Program
CAS:	Chemical Abstracts Service (division of the American Chemical Society)
LC50:	Lethal concentration, 50 percent
LD50:	Lethal dose, 50 percent
IMDG:	International Maritime Code for Dangerous Goods IATA: International Air

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.

SAFETY DATA SHEET



Sonar® Genesis

Aquatic Herbicide

Section 1. Identification

GHS product identifier : Sonar® Genesis
Aquatic Herbicide

Other means of identification : Not available.

EPA Registration No. : 67690-54

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 : ACUTE TOXICITY (inhalation) - Category 3
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Hazard pictograms : Skull and crossbones
Signal word : Danger
Hazard statements : Toxic if inhaled.
Causes serious eye irritation.
Causes skin irritation.
Harmful to aquatic life with long lasting effects.



Section 2. Hazards identification

Precautionary statements

- Prevention** : Wear protective gloves. Wear eye or face protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Wash hands thoroughly after handling.
- Response** : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
- Storage** : Store locked up.
- Disposal** : 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.

CAS number/other identifiers

- CAS number** : Not applicable.

Ingredient name	%	CAS number
Fluridone	6.3	59756-60-4
Proprietary ingredient 1	30 - 40	-
Proprietary ingredient 2	40 - 50	-
Proprietary ingredient 3	5 - 10	-
Proprietary ingredient 4	1 - 5	-
Proprietary ingredient 5	1 - 5	-
Proprietary ingredient 6	0.5 - 2.5	-
Proprietary ingredient 7	0.1 - 0.5	-

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. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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.

Section 4. First aid measures

- Skin contact** : Flush contaminated skin with plenty of water. Continue to rinse for at least 20 minutes. Get medical attention. 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. Never give anything by mouth to an unconscious person. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Toxic if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

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** : Adverse symptoms may include the following:
irritation
redness
- 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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 : This material is harmful 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 : No special measures are required.

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. Do not breathe 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 released in large quantities.

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 get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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. Store locked up. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- 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.
- Eyeface 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.

Section 8. Exposure controls/personal protection

- | | |
|-------------------------------|--|
| 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 | : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. |

Section 9. Physical and chemical properties

Appearance

- | | |
|---|---|
| Physical state | : Liquid. [Clear.] |
| Color | : Golden yellow. |
| Odor | : Sweet, non-pungent. [Slight] |
| Odor threshold | : Not available. |
| pH | : 4.6 [Conc. (% w/w): 1%] |
| Melting point | : Not available. |
| Boiling point | : Not available. |
| Flash point | : Open cup. >93.3°C (>200°F) |
| Burning time | : Not applicable. |
| Burning rate | : Not applicable. |
| Evaporation rate | : Not available. |
| Flammability (solid, gas) | : Not available. |
| Lower and upper explosive (flammable) limits | : Not available. |
| Vapor pressure | : Not available. |
| Vapor density | : Not available. |
| Relative density | : 0.97 |
| Solubility | : Dispersible in water. |
| Solubility in water | : Not available. |
| Partition coefficient: n-octanol/water | : Not available. |
| Auto-ignition temperature | : Not available. |
| Decomposition temperature | : Not available. |
| SADT | : Not available. |
| Viscosity | : Kinematic (room temperature): 0.303 cm ² /s (30.3 cSt) |

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials.
- Hazardous decomposition products** : 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® Genesis	LC50 Inhalation Vapor	Rat	>2.04 mg/L	4 hours
	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Sonar® Genesis	Skin - Primary dermal irritation index (PDII)	Rabbit	4.9	-	1 hours
	Eyes - Cornea opacity	Rabbit	43	-	24 hours

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Sonar® Genesis	skin	Guinea pig	Not sensitizing

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Proprietary ingredient 5	Category 3	Not applicable.	Respiratory tract irritation

Section 11. Toxicological information

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 : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : Toxic if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact : Causes skin irritation.
Ingestion : Irritating to mouth, throat and stomach.

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 : Adverse symptoms may include the following:
irritation
redness
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

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	Acute EC50 3 mg/L Fresh water Acute LC50 8 mg/L Fresh water Acute LC50 1.8 mg/L Fresh water Chronic NOEC 0.2 mg/L Fresh water Chronic NOEC 0.43 mg/L	Daphnia - <i>Daphnia magna</i> Crustaceans - <i>Eucyclops sp</i> Fish - <i>Sander vitreus</i>	48 hours 48 hours 96 hours
Proprietary ingredient 4	Acute EC50 5.65 mg/L Fresh water	Daphnia - <i>Daphnia magna</i> Fish - <i>Oncorhynchus tshawytscha</i> Crustaceans - <i>Ceriodaphnia dubia</i> - Neonate	21 days 75 days 48 hours
Proprietary ingredient 5	Acute LC50 28.2 mg/L Fresh water	Fish - <i>Pimephales promelas</i>	96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Fluridone	3.16	-	low
Proprietary ingredient 5	2.9	25.33	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

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
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-

Section 14. Transport information

Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

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.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) PAIR: Proprietary ingredient 7
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Commerce control list precursor: Proprietary ingredient 6
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

Section 15. Regulatory information**Composition/information on ingredients**

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Proprietary ingredient 2	40 - 50	No.	No.	No.	Yes.	No.
Proprietary ingredient 3	5 - 10	No.	No.	No.	Yes.	No.
Fluridone	6.3	No.	No.	No.	Yes.	No.
Proprietary ingredient 4	1 - 5	No.	No.	No.	Yes.	No.
Proprietary ingredient 5	1 - 5	Yes.	No.	No.	Yes.	No.

SARA 313

No products were found.

State regulations

- Massachusetts** : The following components are listed: Proprietary ingredient 5
New York : None of the components are listed.
New Jersey : The following components are listed: Proprietary ingredient 1
Pennsylvania : The following components are listed: Proprietary ingredient 1; Proprietary ingredient 5

California Prop. 65

No products were found.

International regulations

- International lists** : **Australia inventory (AICS)**: Not determined.
China inventory (IECSC): Not determined.
Japan inventory: Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): Not determined.
Taiwan inventory (CSNN): Not determined.
- Chemical Weapons Convention List Schedule I Chemicals** : Not listed
- Chemical Weapons Convention List Schedule II Chemicals** : Not listed
- Chemical Weapons Convention List Schedule III Chemicals** : Listed

Section 16. Other information**Hazardous Material Information System (U.S.A.)**

Health : 1 * Flammability : 1 Physical hazards : 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

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

Health : 1 Flammability : 1 Instability : 0

Section 16. Other information

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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.

History

Date of issue mm/dd/yyyy : 04/15/2015
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Version : 2
Revised Section(s) : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.
Prepared by : KMK Regulatory Services Inc.
Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships.
1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

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.

Pesticide-Use Permit Application To Apply Pesticides to Water



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ATTACHMENT 7: IMPACTS TO ENVIRONMENT AND NON TARGET SPECIES

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Pesticide Control Program

ATTACHMENT 7: IMPACTS TO ENVIRONMENT AND NON TARGET SPECIES

Fluridone effects on non-target animals (including humans)

Any pesticide approved by the U.S. Environmental Protection Agency (USEPA) has undergone extensive testing to determine toxicity level through acute (high dose for short periods of time) and chronic (long term exposure) studies on animals (USEPA 1986). Sonar has been tested in both acute and chronic studies, as well as studies to examine the potential for carcinogenic, mutagenic, and teratogenic effects. Sonar was not shown to result in the development of tumors, adverse reproductive effects or offspring development, or genetic damage. Sonar has been tested extensively on target aquatic nuisance plants, as well as in long-term residue monitoring studies in treated waters. Sonar is labelled with the signal word "caution" by the USEPA, indicating a level of toxicity lesser than those labelled with either "danger" (more toxic) or "poison" (most toxic).

The USEPA has approved Sonar's application in water used for drinking as long as residue levels do not exceed 0.15 parts per million (ppm) or 150 parts per billion (ppb). Sonar applications can be made within one fourth of a mile (1320 feet) of a potable water intake at rates less than or equal to 20 parts per billion. This treatment concentration is well below the 150ppb allowable limit in water used for drinking (USEPA 1986). Human contact with fluridone may occur through swimming, in treated waters, drinking treated waters, by consuming fish harvested from treated waters, or by consuming meat, poultry, eggs, or milk from livestock that were provided treated water. Mountain Lake has no commercial agricultural use, so exposure through livestock is unlikely. Mountain Lake has is open for recreational activities (fishing, swimming) to property owners within the homeowners association. Even so, there are no USEPA restrictions on the use of fluridone-treated water for swimming or fishing when used according to label directions (USEPA 1986) should such activities occur despite the closure in force.

The maximum non-toxic dose is characterized by the "no observable effect level" or NOEL for pesticides. The dietary NOEL for fluridone (the highest dose at which no adverse effects were observed in laboratory test animals fed fluridone) is approximately 8 milligrams of fluridone per kilogram of body weight per day (8mg/kg/day). A 70Kg (150lb) adult would have to drink over 1,000 gallons of water containing the maximum USEPA allowable concentrations in potable water (150ppb) for a significant portion of their lifetime to receive an equivalent dose. A 20Kg (40lb) child would have to drink approximately 285 gallons of fluridone treated water every day to receive the same NOEL-equivalent dose. The risk therefore is negligible even if a human were to accidentally ingest water directly following a Sonar treatment. As Sonar is only applied intermittently and in limited areas, and because it disappears from the environment, continuous exposure over a lifetime for humans, mammals, and other animals is improbable. Fluridone has been tested for acute and chronic toxicity, as well as reproductive effects, on mammals (rats, mice, guinea pigs, rabbits, dogs), birds (bobwhite quail, mallard ducks), insects (honey bee, amphipods, daphnids, midge, chironomid), earthworms, fish (fathead minnows, catfish, mosquitofish, rainbow trout), and other aquatic animals (Hamelink et al. 2009, Kamarianos et al. 1989, Muir et al. 1982, McGowen et al. 1979).

Exposure of test animals dermally (skin contact) has shown minimal toxicity to animals by acute, concentrated contact. Chronic dermal exposure in mammals showed no signs of toxicity and only slight skin irritation. Mammals were shown to excrete fluridone metabolites within 72 hours of varying doses up to 1400ppm/day (McGowen et al. 1979). A dietary NOEL was established for birds that man feed on

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aquatic plants or insects in treated waters. The risk to birds was considered negligible. The acute median lethal concentrations of fluridone were 4.3 ± 3.7 mg/L for invertebrates and 10.4 ± 3.0 mg/L for fish. Fish in treated ponds have shown no fluridone metabolites after treatment (Kamarianos et al. 1989). Chronic studies showed no effects on daphnids, midge larvae, fathead minnows, or channel catfish and rapid rates of metabolic excretion (Hamelink et al. 2009, Muir et al. 1982). Insects that fed on bottom sediment had higher rates of fluridone intake and persistence than others (Muir et al. 1982). Honeybees and earthworms were not considered particularly sensitive to fluridone, even when directly dusted or placed in treated soil. Fluridone has low bioaccumulation potential in fish, bird, or mammalian tissues. Irrigation of crops using water treated with fluridone lead on to trace amounts detected in forage crops. Livestock consumption of Sonar-treated water resulted in negligible levels of Sonar in lean meat and milk. Sonar manufacturer recommendations indicate that livestock can water immediately from Sonar-treated water. The tolerance for milk is the same as for water 150ppb.

Fluridone effects on non-target vegetation

The desired outcome of this proposed treatment is high-level ($\geq 80\%$) control of nuisance aquatic vegetation; primarily species of *Potamogeton* and *Myriophyllum*. Madsen et al. (2002) evaluated nontarget plant effects in three lakes in southern Michigan that were treated with low dosages of fluridone to control Eurasian water milfoil (*Myriophyllum spicatum*). Despite achieving $>93\%$ reduction in the frequency of Eurasian water milfoil, native plant cover (composed primarily of *Ceratophyllum demersum*, *Chara* spp., *Heteranthera dui*, *Potamogeton* spp., and *Valisneria americana*) was maintained at $>70\%$ in the year of treatment and 1-year post treatment. Floating leaf plants, such as yellow pond lily, exhibiting chlorosis due to chlorophyll injury usually recover within the year of treatment or become reestablished within the following year (Kenaga 1992). At the low concentrations applied (<150 ppb), fluridone is expected to be only lethal to *Myriophyllum* species noted. The aquatic plant community is expected to be impacted to the extent that float plane operations may occur safely but not to the extent of effective eradication. There may be a time period when these established plant population assemblages are decaying that light and dissolved oxygen may temporarily be reduced. However, as the treatment plan takes these factors into account, these areas are expected to be localized rather than lake wide further mitigating risk associated with dissolved oxygen decrease to native fish populations. As plant materials continue to decay, water clarity and dissolved oxygen as well as nutrient levels are expected to return to normal levels; particularly so given the relatively high rates of lake turnover anticipated during the months of treatment (JUNE-AUGUST).

Diquat effects on non-target animals (including humans)

Any pesticide approved by the U.S. Environmental Protection Agency (USEPA) has undergone extensive testing to determine toxicity level through acute (high dose for short periods of time) and chronic (long term exposure) studies on animals (USEPA 1986). Diquat dibromide has been tested in both acute and chronic studies, as well as studies to examine the potential for carcinogenic, mutagenic, and teratogenic effects. Diquat was not shown to result in the development of teratogenic effects, reproductive effects, or reductions in fertility when tested in experimental animals (ExToxNet, SEP93)¹. Diquat has not been found to cause mutagenic nor carcinogenic effects, nor has diquat been found to cause adverse reproductive effects or offspring development, or genetic damage. Diquat has been tested extensively on target aquatic nuisance

¹ <http://pmep.cce.cornell.edu/profiles/extoxnet/dienochlor-glyphosate/diquat-ext.html#35>

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Pesticide Control Program

plants, as well as in long-term residue monitoring studies in treated waters. Littora™ is labelled with the signal word “caution” by the USEPA, indicating a level of toxicity lesser than those labelled with either “danger” (more toxic) or “poison” (most toxic).

The USEPA has approved Littora’s application in water used for drinking as long as residue levels do not exceed 0.02 parts per million (ppm; mg/L) or 20 parts per billion (ppb) diquat dibromide calculated as the cation. Littora applications to waters actively used for potable drinking water require use restrictions of 1 day when treated at rates of <0.5 gallons per surface acre, 2 days when treated at rates of >0.5 to ≤ 1 gallon per surface acre, and 3 days when treated at rates of 1- 2 gallons per surface acre, respectively. In addition, no more than 50% of the surface acreage of a lake may be treated with diquat and a 14 day period must occur between subsequent treatments. Human contact with diquat may occur through swimming, in treated waters, drinking treated waters, by consuming fish harvested from treated waters, or by consuming meat, poultry, eggs, or milk from livestock that were provided treated water. Mountain Lake has no commercial agricultural use, so exposure through livestock is unlikely. Mountain Lake has is open for recreational activities (fishing, swimming). Even so, there are no USEPA restrictions on the use of diquat-treated water for swimming or fishing when used according to label directions (USEPA 1986) should such activities occur despite the closure in force.

The maximum non-toxic dose is characterized by the “no observable effect level” or NOEL for pesticides. The dietary NOEL for diquat (the highest dose at which no adverse effects were observed in laboratory test animals fed diquat) is approximately 7.2 milligrams of diquat per kilogram of body weight per day (7.2mg/kg/day). The single dose NOEL for clinical signs in rats was 25mg/kg while the adjusted chronic NOEL of diquat is 0.05mg/kg/day is used as a calculation of safety margin. In 1974, the USEPA established a Maximum Contaminant Level (MCL) of 20 ppb. A 70Kg (150lb) adult would have to drink over 175 gallons of water containing the maximum USEPA allowable concentrations in potable water (20 ppb diquat cation per gallon) for a significant portion of their lifetime to receive an equivalent dose. A 20Kg (40lb) child would have to drink approximately 50 gallons of diquat treated water every day to receive the same NOEL-equivalent dose. The risk therefore is negligible even if a human were to accidentally ingest water immediately following a diquat treatment. Further, as diquat is only applied intermittently and in limited areas, and because it disappears from the environment, continuous exposure over a lifetime for humans, mammals, and other animals is improbable.

Diquat has been tested for acute and chronic toxicity, as well as reproductive effects, on mammals (rats, mice, guinea pigs, dogs, rabbits, cows), birds (Bobwhite Quail, Mallard Ducks, Japanese Quail, Ring-necked Pheasant), insects (Daphnids, Water flea, Isopods, Mayfly, Cockles, Freshwater shrimp, Shrimp, Eastern oyster, Ostracod, Copepod, Scud, Amphipod, Dragonfly, Pond snail, Caddisfly, Pocket shrimp, Aquatic moth, Pink shrimp, White shrimp, Apple snail, Fairy shrimp, Bloodworm, Honeybees), fish (American Eels, Zebra fish, Goldfish, Hamilton’s carp, Grass carp, Sheepshead minnow, Common carp, Lake chubsucker, Northern pike, Muskellunge, Longnose killifish, Mosquito fish, Black bullhead, Channel catfish, Bluegill sunfish, Smallmouth bass, Largemouth bass, Striped bass, Gold shiner, Emerald shiner, Coho salmon, Rainbow trout, Yellow perch, Fathead minnow, Guppy, Mexican molly, Harlequin fish, Scissor-tail, Brown trout, Eastern brook trout, and Walleye), and other aquatic animals (Alabaster J.S., 1969, Berry, C.R., 1984, Bimber et al, 1978, Bond et al, 1960, Cook, A.S, 1977, Hilsenhoff, W. 1966).

Pesticide-Use Permit Application To Apply Pesticides to Water



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The proposed treatment area does eventually connect to the Turnagain Arm of Cook Inlet which is habitat for the Beluga Whale (*Delphinapterus leucas*), is classified as 'Near Threatened' (IUCN 3.1). The potential impacts of Sonar[®] and Littora[®] treatment are outlined further in **Attachment 7: Impacts to Environment and Non Target Species**. All outflow carrying herbicides from the proposed treatment area and ultimately into the Turnagain Arm would immediately drop to the point of non-detectability by conventional methods (<1 part-per-billion) through simple dilution. The extreme tidal fluctuation will expedite this process.

Diquat effects on non-target vegetation

The desired outcome of this proposed treatment is high-level ($\geq 80\%$) control of nuisance aquatic vegetation; primarily species of *Potamogeton* and *Myriophyllum*. Madsen et al. (2002) evaluated nontarget plant effects in three lakes in southern Michigan that were treated with low dosages of fluridone to control Eurasian water milfoil (*Myriophyllum spicatum*). Despite achieving >93% reduction in the frequency of Eurasian water milfoil, native plant cover (composed primarily of *Ceratophyllum demersum*, *Chara* spp., *Heteranthera dui*, *Potamogeton* spp., and *Valisneria americana*) was maintained at >70% in the year of treatment and 1-year post treatment. Floating leaf plants, such as yellow pond lily, exhibiting chlorosis due to chlorophyll injury usually recover within the year of treatment or become reestablished within the following year (Kenaga 1992). At the low concentrations applied (<150ppb), fluridone is expected to be only lethal to *Myriophyllum* species noted. The aquatic plant community is expected to be impacted to the extent that float plane operations may occur safely but not to the extent of effective eradication. There may be a time period when these established plant population assemblages are decaying that light and dissolved oxygen may temporarily be reduced. However, as the treatment plan takes these factors into account, these areas are expected to be localized rather than lake wide further mitigating risk associated with dissolved oxygen decrease to native fish populations. As plant materials continue to decay, water clarity and dissolved oxygen as well as nutrient levels are expected to return to normal levels; particularly so given the relatively high rates of lake turnover anticipated during the months of treatment (JUNE-AUGUST).

Mountain Lake Flow Discharge Effects on Herbicide Concentration and Potential for Offsite Impact

Mountain Lake streamflow analysis was inferred using data sourced from the United States Geological Service (USGS) Streamflow Gauge Station "USGS 15274495 L CAMPBELL C HILLSIDE DR AT ANCHORAGE AK²", Hydrologic Unit Code 19020401; Station Location Latitude 61°06'59", Longitude 149°44'33" NAD27 Projection. The proposed period of treatment 2017 (JUN-SEP) occurs during the peak of stream flow into and out of Mountain Lake. Treatment protocol and herbicide active ingredient and formulation selection were predicated by the need for a fast-acting contact type herbicide (Littora[®]) with relatively short half-life (DT_{50}) and a systemic herbicide (Sonar[®]) having an extended half-life (DT_{50}) of >45 days in order to maintain effective concentrations within the water column despite a short *in situ* residence time. While significant, the historical flow data does not indicate that the average turnover in water volume within Mountain Lake precludes the effective use of herbicides. As such, the proposed treatment program is based, in part, upon these historical abiotic conditions. With regards to the offsite movement of applied herbicide active ingredients into the Turnagain Arm of the Cook Inlet, the extreme tidal fluctuation and mechanical dilution are likely to immediately dilute these concentrations to the point of non-detectability (<1 ppb).

² http://waterdata.usgs.gov/ak/nwis/uv/?site_no=15274600&PARAMeter_cd=00065,00060

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
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Pesticide Control Program

ATTACHMENT 8: DESCRIPTION OF PESTICIDE USE PRECAUTIONS

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
Division of Environmental Health
Pesticide Control Program

ATTACHMENT 8: DESCRIPTION OF PESTICIDE USE PRECAUTIONS

All personnel and environmental use precautions listed on the USEPA approved pesticide labels and those on the Safety Data Sheets will be followed strictly. Transportation, storage and application will follow manufacturer guidelines. All application will be done by certified AK DEC Pesticide Applicators with Category 6: Aquatic Pest Control endorsements.

Appropriate signage will be placed in the application areas to inform the public of the potential safety concerns. All adjacent property owners will be kept informed of the application procedure, interaction concerns, and follow-up monitoring results.

Public notification of pesticide applications in public places will be posted in writing at each public access point of entry and exit. Signs will stay posted at least 24 hours after the application with contact names, phone numbers, time of application, and any appropriate restrictions noted.

Applications of the pesticides will adhere to custom prescriptions formulated for Mountain Lake and followed accordingly. This will minimize any potential for adverse effects on all non-target environmental elements.

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
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Pesticide Control Program

ATTACHMENT 9: PROOF OF LIABILITY INSURANCE

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
Division of Environmental Health
Pesticide Control Program

ATTACHMENT 9: PROOF OF LIABILITY INSURANCE

CCOKER



INSURANCE BINDER

DATE (MM/DD/YYYY)
2017-03-21

THIS BINDER IS A TEMPORARY INSURANCE CONTRACT, SUBJECT TO THE CONDITIONS SHOWN ON PAGE 2 OF THIS FORM

AGENCY Hub International Southeast 178 Mo3rain Drive West Columbia, SC 29189	COMPANY Evanston Insurance Company	BINDER # 56362
PHONE (803) 733-0001 6121	FAX (877) 224-5834	
CODE AMARENV-02	SUB CODE License # 1000005384	
INSURED AND MAILING ADDRESS Amaruq Environmental Services, LLC 173 Blue Heron Ln North Augusta, SC 29841		
DATE EFFECTIVE 2017-03-20		
TIME 12:01		
DATE EXPIRATION 2017-04-19		
TIME 12:01 AM		
THIS BINDER IS ISSUED TO EXTEND COVERAGE BY THE ABOVE NAMED COMPANY PER EXPIRING POLICY #		
DESCRIPTION OF OPERATIONS / VEHICLES / PROPERTY (including Location) Consultant		

COVERAGES		LIMITS	
TYPE OF INSURANCE	COVERAGE / FORMS	DEDUCTIBLE	AMOUNT
PROPERTY <input type="checkbox"/> BLDG <input type="checkbox"/> BROAD <input type="checkbox"/> SPEC			
GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR		EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES \$ 50,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 1,000,000 PRODUCTS - COMPLETION \$ 1,000,000	
VEHICLE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> MERGED AUTOS <input type="checkbox"/> NON-OWNED AUTOS		COMBINED SINGLE LIMIT \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE \$ MEDICAL PAYMENTS \$ PERSONAL INJURY PROT \$ UNINSURED MOTORIST \$	
VEHICLE PHYSICAL DAMAGE DED <input type="checkbox"/> ALL VEHICLES <input type="checkbox"/> SCHEDULED VEHICLES		ACTUAL CASH VALUE STATED AMOUNT \$	
GARAGE LIABILITY <input type="checkbox"/> ANY AUTO		AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY \$ EACH ACCIDENT \$ AGGREGATE \$	
EXCESS LIABILITY <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM		EACH OCCURRENCE \$ AGGREGATE \$ SELF-INSURED RETENTION \$	
WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY		PER STATUTE E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$	
SPECIAL CONDITIONS: Contractors Pollution Liability \$ \$1,000,000 Each Pollution Condition Limit \$1,000,000 Shared General Aggregate Limit OTHER COVERAGES: Professional Liability \$1,000,000 Each Claims Limit \$1,000,000 Shared General Aggregate Limit		FEES \$ TAXES \$ ESTIMATED TOTAL PREMIUM \$	

NAME & ADDRESS 	MORTGAGE LOAN PAYEE LOAN # AUTHORIZED REPRESENTATIVE Christina Coker	ADDITIONAL INSURED
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INSURANCE BINDER

CCOKER

DATE (MM/DD/YYYY)
2017-03-21

THIS BINDER IS A TEMPORARY INSURANCE CONTRACT, SUBJECT TO THE CONDITIONS SHOWN ON PAGE 2 OF THIS FORM.

AGENCY Hub International Southeast 176 McSwain Drive West Columbia, SC 29169		COMPANY Evanston Insurance Company		BINDER # 56362	
PHONE (A/C, No, Ext): (803) 739-0001 6121		FAX (A/C, No): (877) 224-5834		DATE EFFECTIVE 2017-03-20 12:01	
CODE: AGENCY: AMARENV-02 CUSTOMER ID: License # 1000009384		SUB CODE:		DATE EXPIRATION 2017-04-19 12:01 AM	
INSURED AND MAILING ADDRESS Amaruq Environmental Services, LLC 173 Blue Heron Ln North Augusta, SC 29841		DESCRIPTION OF OPERATIONS / VEHICLES / PROPERTY (including Location) Consultant			

COVERAGES

LIMITS

TYPE OF INSURANCE	COVERAGE / FORMS	DEDUCTIBLE	COINS %	AMOUNT
PROPERTY CAUSES OF LOSS <input type="checkbox"/> BASIC <input type="checkbox"/> BROAD <input type="checkbox"/> SPEC				
GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR		EACH OCCURRENCE		\$ 1,000,000
		DAMAGE TO RENTED PREMISES		\$ 50,000
		MED EXP (Any one person)		\$ 5,000
		PERSONAL & ADV INJURY		\$ 1,000,000
		GENERAL AGGREGATE		\$ 1,000,000
		PRODUCTS - COMP/OP AGG		\$ 1,000,000
	RETRO DATE FOR CLAIMS MADE			
VEHICLE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS		COMBINED SINGLE LIMIT		\$
		BODILY INJURY (Per person)		\$
		BODILY INJURY (Per accident)		\$
		PROPERTY DAMAGE		\$
		MEDICAL PAYMENTS		\$
		PERSONAL INJURY PROT		\$
		UNINSURED MOTORIST		\$
				\$
VEHICLE PHYSICAL DAMAGE DED <input type="checkbox"/> ALL VEHICLES <input type="checkbox"/> SCHEDULED VEHICLES		ACTUAL CASH VALUE		
<input type="checkbox"/> COLLISION <input type="checkbox"/> OTHER THAN COL		STATED AMOUNT		\$
GARAGE LIABILITY <input type="checkbox"/> ANY AUTO		AUTO ONLY - EA ACCIDENT		\$
		OTHER THAN AUTO ONLY		\$
		EACH ACCIDENT		\$
		AGGREGATE		\$
EXCESS LIABILITY <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM		EACH OCCURRENCE		\$
		AGGREGATE		\$
		SELF-INSURED RETENTION		\$
WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY		PER STATUTE		
		E L EACH ACCIDENT		\$
		E L DISEASE - EA EMPLOYEE		\$
		E L DISEASE - POLICY LIMIT		\$
SPECIAL CONDITIONS / OTHER COVERAGES	Contractors Pollution Liability \$ \$1,000,000 Each Pollution Condition Limit/\$1,000,000 Shared General Aggregate Limit			
	Professional Liability \$1,000,000 Each Claim Limit/\$1,000,000 Shared General Aggregate Limit			
	FEES		\$	
	TAXES		\$	
	ESTIMATED TOTAL PREMIUM		\$	

NAME & ADDRESS

	<input type="checkbox"/> MORTGAGEE	<input type="checkbox"/> ADDITIONAL INSURED
	<input type="checkbox"/> LOSS PAYEE	
	LOAN #:	
	AUTHORIZED REPRESENTATIVE Christina Coker	

CONDITIONS

This Company binds the kind(s) of insurance stipulated on page 1 of this form. The Insurance is subject to the terms, conditions and limitations of the policy(ies) in current use by the Company.

This binder may be cancelled by the Insured by surrender of this binder or by written notice to the Company stating when cancellation will be effective. This binder may be cancelled by the Company by notice to the Insured in accordance with the policy conditions. This binder is cancelled when replaced by a policy. If this binder is not replaced by a policy, the Company is entitled to charge a premium for the binder according to the Rules and Rates in use by the Company.

Applicable in Arizona

Binders are effective for no more than ninety (90) days.

Applicable in California

When this form is used to provide insurance in the amount of one million dollars (\$1,000,000) or more, the title of the form is changed from "Insurance Binder" to "Cover Note".

Applicable in Colorado

With respect to binders issued to renters of residential premises, home owners, condo unit owners and mobile home owners, the insurer has thirty (30) business days, commencing from the effective date of coverage, to evaluate the issuance of the insurance policy.

Applicable in Delaware

The mortgagee or Obligee of any mortgage or other instrument given for the purpose of creating a lien on real property shall accept as evidence of insurance a written binder issued by an authorized insurer or its agent if the binder includes or is accompanied by: the name and address of the borrower; the name and address of the lender as loss payee; a description of the insured real property; a provision that the binder may not be canceled within the term of the binder unless the lender and the insured borrower receive written notice of the cancellation at least ten (10) days prior to the cancellation; except in the case of a renewal of a policy subsequent to the closing of the loan, a paid receipt of the full amount of the applicable premium, and the amount of insurance coverage.

Chapter 21 Title 25 Paragraph 2119

Applicable in Florida

Except for Auto Insurance coverage, no notice of cancellation or nonrenewal of a binder is required unless the duration of the binder exceeds 60 days. For auto insurance, the insurer must give 5 days prior notice, unless the binder is replaced by a policy or another binder in the same company.

Applicable in Maryland

The insurer has 45 business days, commencing from the effective date of coverage to confirm eligibility for coverage under the insurance policy.

Applicable in Michigan

The policy may be cancelled at any time at the request of the insured.

Applicable in Nevada

Any person who refuses to accept a binder which provides coverage of less than \$1,000,000.00 when proof is required: (A) Shall be fined not more than \$500.00, and (B) is liable to the party presenting the binder as proof of insurance for actual damages sustained therefrom.

Applicable in Oklahoma

All policies shall expire at 12:01 a.m. standard time on the expiration date stated in the policy.

Applicable in Oregon

Binders are effective for no more than ninety (90) days. A binder extension or renewal beyond such 90 days would require the written approval by the Director of the Department of Consumer and Business Services.

Applicable in the Virgin Islands

This binder is effective for only ninety (90) days. Within thirty (30) days of receipt of this binder, you should request an insurance policy or certificate (if applicable) from your agent and/or insurance company.

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
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Pesticide Control Program

ATTACHMENT 10: INFORMATION ON ENDANGERED SPECIES



N/A – EO ENDANGERED SPECIES IDENTIFIED

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
Division of Environmental Health
Pesticide Control Program

ATTACHMENT 11: APDES DOCUMENTATION

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
Division of Environmental Health
Pesticide Control Program

ATTACHMENT 11: APDES DOCUMENTATION



THE STATE
of ALASKA

GOVERNMENT PRINTING OFFICE

Department of Environmental
Conservation

DIVISION OF WATER

Stormwater Pollution Prevention Program

555 Cordova Street
Anchorage, Alaska 99501-2417
Phone: 907-269-0103
Fax: 907-269-2415
Email: dec@alaska.gov

October 29, 2015

Andrew Skibo
11550 N Meridian St, Ste 600
Carmel, IN 46032

Re: AKG870012 Campbell Lake SEPRO Weed Control

Dear Mr. Skibo:

This letter acknowledges that you have submitted a Notice of Intent (NOI) form to be covered under the APDES Pesticide General Permit (PGP). As the permittee, you are authorized to discharge to Waters of the U.S. under the terms and conditions of this permit ten (10) calendar days after acknowledgment of receipt of the permittee's completed NOI is posted on ADEC's Storm Water Permit Search website (<http://dec.alaska.gov/Applications/Water/WaterPermitSearch/Search.aspx>).

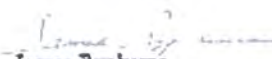
As stated above, this letter acknowledges receipt of a NOI. However, it is not an ADEC determination of the validity of the information you provided. Your eligibility for coverage under the Permit is based on the validity of the certification you provided. Your signature on the NOI certifies that you have read, understood, and are implementing all of the applicable requirements. An important aspect of this certification requires that you correctly determine whether you are eligible for coverage under this permit.

As you know, the PGP requires you to have developed and begun implementing a Pesticide Discharge Management Plan (PDMP) and establishes additional monitoring, corrective action, record keeping, and annual reporting requirements. You must also comply with any additional location-specific requirements applicable to Alaska.

For tracking purposes, the following number has been assigned to your Notice of Intent Form: **AKG870012**.

If you have any questions regarding the above, please contact Shannon DeWandel at 907-269-0103 or via email at Shannon.DeWandel@alaska.gov.

Sincerely,


James Rypkema
Section Manager, Storm Water and Wetlands

Enclosure: NOI

cc: w/enclosure (email)
Karin Hendrickson, Pesticide Program Coordinator, DEC-EH/Pesticides

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
Division of Environmental Health
Pesticide Control Program

Submit Notice of Intent Form to:
Alaska Department of Environmental Conservation - Wastewater Discharge Authorization Program
555 Cordova Street, Anchorage, AK 99501
Phone: (907) 269-6285 Fax: (907) 269-3457 Email: DEC.Water.WQPermit@alaska.gov



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460
NOTICE OF INTENT (NOI) OF COVERAGE UNDER THE PESTICIDE
GENERAL PERMIT (PGP) FOR DISCHARGES FROM THE APPLICATION
OF PESTICIDES

Form Approved
OMB No
2040-0284

Submission of this completed Notice of Intent (NOI) constitutes notice that the Operator identified in Section B intends to be authorized to discharge pollutants to Waters of the United States within the pest management area identified in Section C under EPA's Pesticide General Permit. Submission of this NOI constitutes notice that the party identified in Section B of this form has read, understands, and meets the eligibility conditions of Part 1 of the permit; agrees to comply with all applicable terms and conditions of the permit; and understands that continued authorization under the permit is contingent on maintaining eligibility for coverage. To be granted coverage, all information required on this form must be completed. Please read and make sure you comply with all permit requirements, including the requirement for large entities to prepare a Pesticide Discharge Management Plan (PDMP) prior to NOI submittal. Refer to the instructions at the end of this form to complete your NOI.

Electronic Submission Waiver (skip if submitting through EPA's eNOI system)

☒ I hereby acknowledge my waiver request from the use of EPA's electronic Notice of Intent system (eNOI) because my use of eNOI will incur undue burden or expense over my use of this paper NOI form.

Briefly describe the reason why use of the electronic system causes undue burden or expense:

Requested form by AK-DEC WDAP Staff

A. Notice of Intent Status

1. Mark whether this is the first time you are requesting coverage under the Pesticide General Permit or if this is a change of information for a discharge already covered under the Pesticide General Permit. If this is a change of information, supply the NPDES permit tracking number for the discharge.

a. ☒ Original NOI Submission

b. ☐ NOI Change of Information: [] [] [] [] [] [] [] [] [] [] (NPDES Permit Tracking Number)

Please note: When selecting A.1 b please fill out Section B (Operator Name and Mailing Address) and the fields of the NOI that need to be modified.

B. Operator Information

1. Operator Name: SEPRO CORPORATION

2. IRS Employer Identification Number (EIN): 35-1902554

3. Operator Type (check one)

a. ☐ Federal government

b. ☐ State government

c. ☐ Local government

d. ☐ Mosquito control district (or similar)

e. ☐ Irrigation control district (or similar)

f. ☐ Weed control district (or similar)

g. ☒ Other. If other, provide brief description of type of operator: ENVIRONMENTAL SERVICES

4. Are you a large entity as defined in Appendix A of the permit? (check one)

☐ Yes ☒ No

Please note: If you answer "Yes" to question 4 you are required to develop a Pesticide Discharge Management Plan (PDMP) and submit an Annual Report reflecting all pesticide uses for which you are requesting permit coverage under this NOI.

5. In which state are your pest management areas located? Please specify only one state per NOI: AK

6. Mailing Address

a. Street: 11550 N MERIDIAN ST STE 600

b. City: CARNEL c. State: IN d. ZIP Code: 46032

e. Telephone: 317-580-8282 Ext. [] [] f. Fax: [] [] [] [] [] []

g. Contact Name: ANDREW Z SKIBO PhD

h. E-mail: ANDREW.SKIBO@SEPRO.COM

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
Division of Environmental Health
Pesticide Control Program

Submit Notice of Intent Form to:
Alaska Department of Environmental Conservation - Wastewater Discharge Authorization Program
555 Cordova Street, Anchorage, AK 99501
Phone: (907) 269-6285; Fax: (907) 269-3487; Email: DEC.Water.WQPermit@alaska.gov

C. Pest Management Areas: Complete Section C for each Pest Management Area for which coverage under EPA's Pesticide General Permit is desired. Copy this section for non-electronic submissions.

Pest Management Area # 1 of ## 1

1. Pest Management Area Name: LAKE O' THE HILLS

Provide a map of the location of the Pest Management Area (attach map) or describe the location of the Pest Management Area in detail.

61° 07' 01.12" N 149° 45' 04.57" W

Bordered on the North by Mountain Lake Drive, intersected East by Mountain Lake Circle, to the West by Rockridge Dr., and South by the South Fork of Little Campbell Creek.

2. Are any of your activities for which you are requesting coverage under this NOI occurring on Indian Country Lands? ☐ Yes ☒ No

If yes, identify the reservation or otherwise describe those areas

N/A

3. Are any of your activities (in this pest management area) for which you are requesting coverage under this NOI occurring on areas considered "federal facilities" as defined by the permit? ☐ Yes ☒ No

4. Mailing address and contact information of the pesticide applicator (or check here ☒ if same as provided in Section B):

a. Street:
b. City: c. State: d. ZIP Code:
e. Telephone: - - Ext. f. Fax: - -
g. Contact Name:
h. E-mail:

5. Pesticide Use Patterns to be included in this Pest Management Area (check all that apply)

- a. ☐ Mosquito and Other Flying Insect Pest Control c. ☐ Animal Pest Control
b. ☒ Weed and Algae Pest Control d. ☐ Forest Canopy Pest Control

6. Receiving Waters (check one)

- a. ☒ Coverage requested for all Waters of the United States within the Pest Management Area identified above
b. ☐ Coverage requested specifically for the following Waters of the United States within the Pest Management Area identified above

c. ☐ Coverage requested for all Waters of the United States within the Pest Management Area identified above except for

7. Tier 3 Waters

Is coverage requested for discharge to a Tier 3 water (Outstanding National Resource Water) of the United States? ☐ Yes ☒ No
If yes, answer a and b

- a. Name of Tier 3 water(s) _____
b. Provide rationale for determination that pesticide discharge is necessary to protect water quality, the environment, and/or public health and that any such discharge will not degrade water quality or will degrade water quality only on a short-term or temporary basis.

N/A

8. Water Quality Impaired Waters

Operators are not eligible for coverage under this permit for any discharges from a pesticide application to Waters of the United States if the waters are identified as impaired by a substance which is either an active ingredient of the pesticide designated for use or is a degradate of such an active ingredient. See Part 1.1.2.1 of the permit. Check one

- a. ☐ Waters are NOT impaired by any substance which is either an active ingredient of a pesticide to be discharged or a degradate of such an active ingredient
b. ☐ Waters are on a current state list as being impaired by a substance which is either an active ingredient of a pesticide to be discharged or a degradate of such an active ingredient, however, evidence is attached documenting that the waters are no longer impaired.

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
Division of Environmental Health
Pesticide Control Program

Submit Notice of Intent Form to:
Alaska Department of Environmental Conservation - Wastewater Discharge Authorization Program
555 Cordova Street, Anchorage, AK 99501
Phone: (907) 269-6285; Fax: (907) 269-3487; Email: DEC.Water.WQPermit@alaska.gov

D. Endangered Species Protection: Complete Section D for each Pest Management Area for which coverage under EPA's Pesticide General Permit is desired. Copy this section for non-electronic submissions.

Pest Management Area # 1 of 1

f. Identify the criterion for which you are eligible for permit coverage as it applies to Federally Listed Threatened or Endangered Species (i.e., Species) and/or Federally Designated Critical Habitat (i.e., Habitat) (check one).

a. ☒ Pesticide application activities will not result in a point source discharge to one or more Waters of the United States containing National Marine Fisheries Service (NMFS) Listed Resources of Concern, as defined in Appendix A, of the PGP

b. ☐ Pesticide application activities for which permit coverage is being requested will discharge to one or more Waters of the United States containing NMFS Listed Resources of Concern, as defined in Appendix A of the PGP but consultation with NMFS under Section 7 of the Endangered Species Act (ESA) has been concluded for pesticide application activities covered under the PGP. Consultations can be either formal or informal, and would have occurred only as a result of a separate federal action. The consultation addressed the effects of pesticide discharges and discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and must have resulted in either:

i. A biological opinion from NMFS finding no jeopardy to federally-listed species and no destruction/adverse modification of federally-designated critical habitat; or

ii. Written concurrence from NMFS with a finding that the pesticide discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally-designated critical habitat.

c. ☐ Pesticide application activities for which permit coverage is being requested will discharge to one or more Waters of the United States containing NMFS Listed Resources of Concern, as defined in Appendix A of the PGP but all "take" of these resources associated with such pesticide application activities has been authorized through NMFS' issuance of a permit under section 10 of the ESA, and such authorization addresses the effects of the pesticide discharges and discharge-related activities on federally-listed species and federally-designated critical habitat. (The term "take" means to harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. See Section 3 of the Endangered Species Act, 16 U.S.C. § 1532 (19).)

d. ☐ Pesticide application activities were, or will be, discharged to one or more Waters of the United States containing NMFS Listed Resources of Concern, as defined in Appendix A of the PGP, but only in response to a Declared Pest Emergency Situation

e. ☐ Pesticide application activities for which permit coverage is being requested in the NOI will discharge to one or more Waters of the United States containing NMFS Listed Resources of Concern, as defined in Appendix A of the PGP. Eligible discharges include those where the Decision-maker includes in the NOI written correspondence from NMFS that pesticide application activities performed consistent with appropriate measures will avoid or eliminate the likelihood of adverse effects to NMFS Listed Resources of Concern.

f. ☐ Pesticide application activities for which permit coverage is being requested in the NOI will discharge to one or more Waters of the United States containing NMFS Listed Resources of Concern, as defined in Appendix A of the PGP. Eligible discharges include those where the Decision-maker includes in the NOI written correspondence from NMFS that pesticide application activities performed consistent with appropriate measures will avoid or eliminate the likelihood of adverse effects to NMFS Listed Resources of Concern or that the pest poses a greater threat to the NMFS Listed Resources of Concern than does the discharge of the pesticide.

2. If you checked criterion d or criterion f above, provide the following information for all discharges to Waters of the United States containing NMFS Listed Resources of Concern identified within the pest management area for which permit coverage is being requested. For discharges pursuant to criterion d, Declared Pest Emergency Situations, information for items a through g should also include any discharges that have already occurred prior to NOI submission as well as the activities you performed in the 15 day period before submission of this NOI was required. In some cases, implementation of pest management measures as specified in the permit involves a degree of "adaptive management" such that exact timing and quantities of applications cannot be determined in advance for the duration of the permit. In such cases, the permittee must provide the required information to the extent feasible and consistent with the implementation of the selected pest management measures.

a. Describe the location of the pest management area in detail or provide a map of the location

b. Pest(s) to be controlled.

c. Pesticide product(s) to be discharged and method of application

d. Planned quantity and rate of discharge(s) for each method of application

e. Number of planned discharges

f. Approximate date(s) of planned discharge(s)

g. Your rationale supporting your determination that you meet the criterion for which you are submitting this NOI, including appropriate measures to be undertaken to avoid or eliminate the likelihood of adverse effects. For certifications pursuant to Criterion D, indicate whether the discharge is likely to adversely affect NMFS Listed Resources of Concern and if so, any feasible measures to avoid or eliminate such adverse effects (attach additional pages as necessary)

Pesticide-Use Permit Application To Apply Pesticides to Water



Alaska Department of
Environmental Conservation
Division of Environmental Health
Pesticide Control Program

Submit Notice of Intent Form to
Alaska Department of Environmental Conservation Wastewater Discharge Authorization Program
555 Cordova Street, Anchorage, AK 99501
Phone: (907) 269-6285, Fax: (907) 269-3487, Email: DEC.Water.WQPermit@alaska.gov

E. Certification

I 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 gather and evaluate the information submitted. On the basis of 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.

Printed Name: ANDREW E SKIBO PWD

Title: TECHNICAL DEVELOPMENT SPECIALIST

E-Mail: ANDREW.SKIBO@SEPRO.COM

Signature/Responsible Official:  Date: 10/29/2015

NOI Preparer (Complete if NOI was prepared by someone other than the certifier)

Preparer Name:

Organization:

Phone: - - Ext: Date: / /

E-Mail: