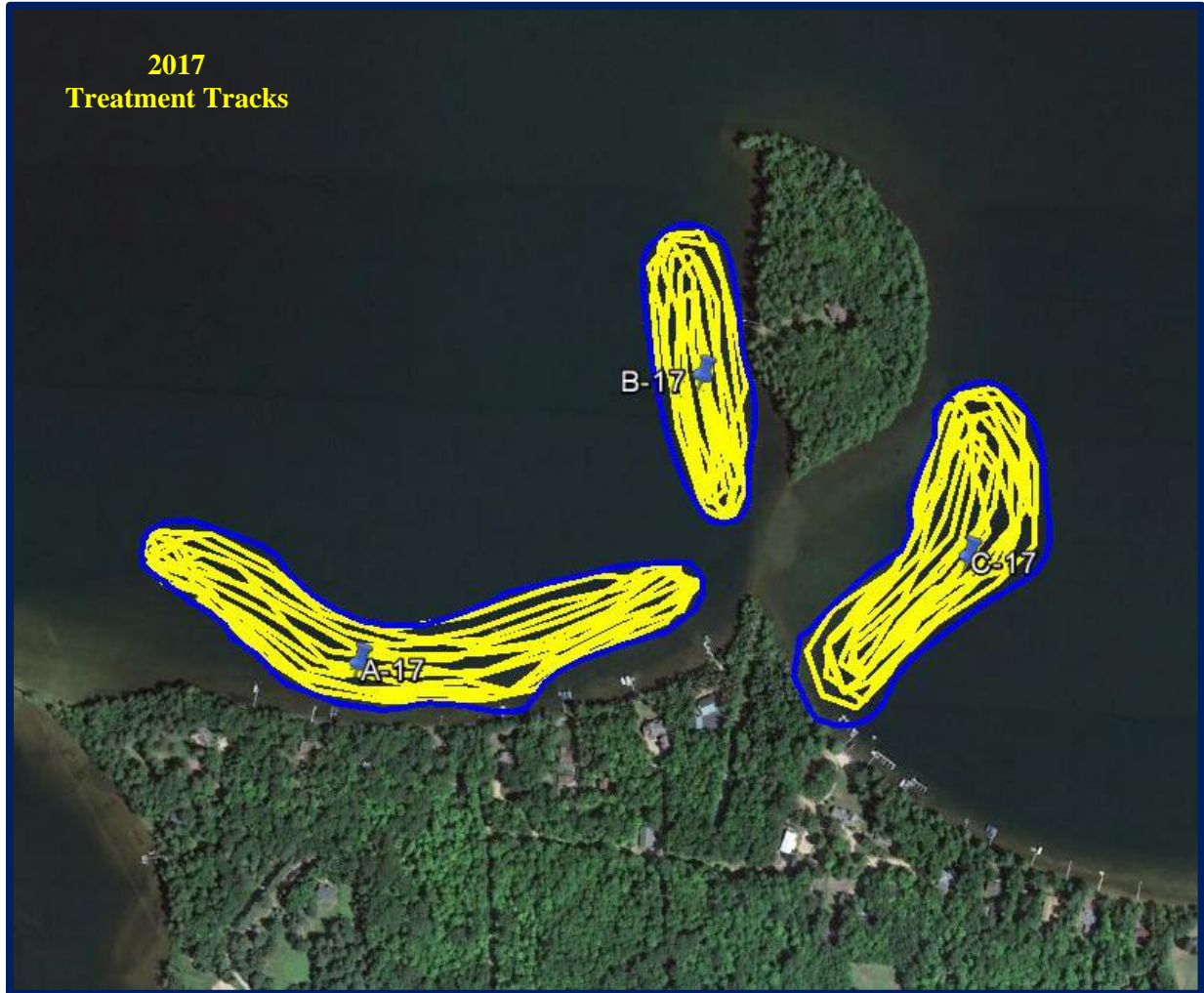


**North Twin Lake  
Vilas County, Wisconsin  
2017 AIS Aquatic Pesticide Application Report**



Prepared By:

**CLEAN LAKES**

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Prepared For:

North South Twin Lakes Riparian Association

P.O. Box

Phelps, WI

May 2017

**AQUATIC PESTICIDE APPLICATIONS:** Clean Lakes, Inc. (CLI) was contracted by the North South Twin Lakes Riparian Association (the Association) to perform aquatic pesticide (herbicide) applications to infestations of Eurasian Watermilfoil (EWM) in the project areas outlined below, in compliance with the published Wisconsin Department of Natural Resources (WDNR) Aquatic Invasive Species (AIS) Treatment Protocols, the March 13, 2012 coverage under the Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit for Aquatic Plant, Algae and Bacteria authorizing coverage for CLI, and the April 24, 2017 Wisconsin DNR Permit Approval issued to the Association (included as part of the attached Aquatic Pesticide Application Plan (APAP)).

The appropriate logs of the work performed, and map of the locations of AIS colonies treated are both included in this report.

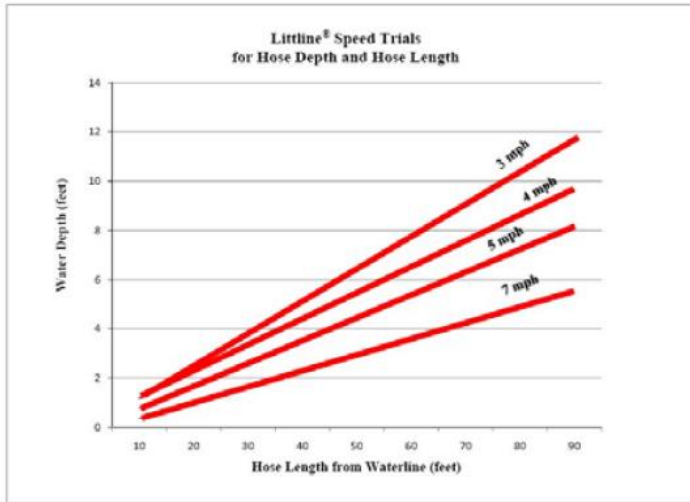
**AQUATIC HERBICIDES USED:** The Aquatic Herbicides used were Dow AgroSciences DMA 4 IVM (liquid 2, 4-D), EPA Registration Number 62719-3 and United Phosphorous, Inc.'s Aquathol K (liquid endothall), EPA Registration Number 70506-176 (Label and MSDS included as part of the attached Aquatic Pesticide Application Plan (APAP)).

**TREATMENT SCHEDULE:** The aquatic pesticide applications were performed on Tuesday, May 23, 2017.

**EQUIPMENT USED:** A LittLine<sup>®</sup>, one of CLI's state-of-the-art Littoral Zone Treatment vessels was used to perform the aquatic herbicide applications. The herbicide applications were made to the bottom acre foot of the water column to increase herbicide concentration and exposure time (CET) relationships for the control of EWM in the water column.



The LittLine vessel speed and water depth in the treatment area regulates the length of aquatic herbicide discharge hose required per the depth and hose length chart shown below.



The aquatic vegetation treatment area shapefiles created following Onterra's 2017 pre-treatment survey and approval by WDNR and the Association, were loaded into the LittLine computer system for vessel guidance and herbicide application data recording. The treatment tracks were automatically recorded via the LittLine vessel's GPS guidance system

supported by GIS software and handheld Garmin GPS for the production of the final treatment area maps to document the treatment areas. Treatment area maps as well as the digital data files are included in this report.



The LittLine system's computerized rate controllers regulate the aquatic herbicide applications through preset treatment rates. When the vessel speeds up and or slows down, the rate controllers adjust the herbicide application rate to match the preset rate in gallons of product per acre.



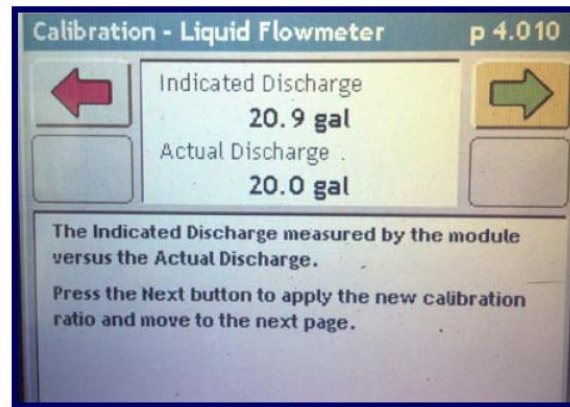
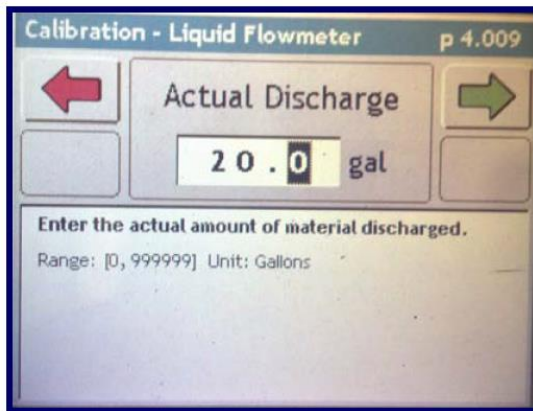
CLI provided the required support equipment for material handling (unloading trucks, loading boats) as well as support trucks for the vessels assigned to the project. The aquatic herbicides were delivered by Northwoods Distribution Services, Inc. of Rhinelander, WI in 250 gallon tote containers, and 60 gallons ((2) 30 gallon drums) were delivered from Stevens Point via the Association. The aquatic herbicide containers remained on and adjacent to Northwoods Distribution Services truck, and transferred via a closed system to CLI's application vessel.

**PERMIT COMPLIANCE:** The Association provided the required Permits and approvals for the herbicide treatments from the Wisconsin Department of Natural Resources as outlined and included in the attached APAP. CLI obtained coverage for aquatic plant control activities under the Statewide Wisconsin Pollutant Discharge Elimination System (WPDES) General Permit (#WI-0064556-1 Clean Lakes, Inc. Statewide Treatments/FIN 46219) that provided authorization for the herbicide applications.

- **Visual Check Record:** Compliance with the WPDES permit requires a visual check be performed at a representative location during or soon after plant control activities. A visual check was carried out by Tom Moorhouse and Amy Kay (Wisconsin Commercial

Pesticide Applicators) at multiple representative locations within the treatment area during the applications. During and immediately following the herbicide applications no adverse conditions were observed. Adverse Incidents are defined as death or distress of non-target organisms, disruption of wildlife habitat, risk to recreational activities, risk to human health, etc.

- **Pesticide Application Control:** To ensure that CLI did not exceed the pesticide label maximum rate, a licensed and certified applicator (Tom Moorhouse – certification #89222) performed aquatic herbicide applications. Application equipment was maintained and calibrated prior to the application through on board computer based application equipment (see examples below) and discharge monitored during application to ensure effective pesticide application. Maintenance of herbicide transfer and application equipment ensured that no unintended discharges occurred.



## **PUBLIC NOTIFICATION/POSTING PESTICIDE**

**TREATMENT AREA WARNING SIGNS:** The properties within and adjacent to treatment areas, and public launching sites were posted with the approved WDNR “Warning” signs prior to treatment by the Association. There are no swimming, or fishing use restrictions, there is a 21 day irrigation use restriction which expires on June 14, 2017. The “Warning” signs need to be posted until the water use restriction has expired and the Association will be responsible for removing and disposing of/recycling as appropriate. The Association published all other notices per the treatment requirements.

## EQUIPMENT

## DECONTAMINATION

**PROCEDURES:** Equipment decontamination measures were performed prior to entering North Twin Lake and prior to exiting the boat launching site and moving CLI's vessel to another waterbody per the current decontamination procedures (Reference NR40).

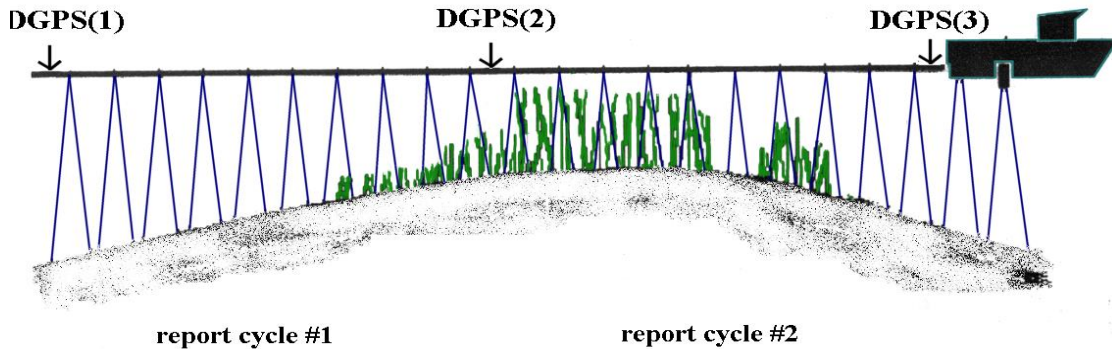




### Treatment Area Data

2017 North Twin Lake Herbicide Rate Data			Aquathol K (Liquid Endothall)			DMA 4 IVM (Liquid 2,4-D)			
ID	Acres	Mean Depth Estimate	Volume	Rate	Qty/Acre	Total	Rate	Qty/Acre	Total
A-17	10.6	9.0	95	1.5	8.7	91.9	4.0	25.7	272.9
B-17	5.2	9.5	49	1.5	9.1	47.6	4.0	27.2	141.3
C-17	8.8	9.5	84	1.5	9.1	80.5	4.0	27.2	239.2
<b>TOTALS</b>	<b>24.6</b>		<b>228</b>			<b>219.9</b>			<b>653.5</b>

**SUBMERGED AQUATIC VEGETATION (SAV) MAPPING:** A Lowrance HDS Digital Echosounder System with a Structure Scan Module was used to record data of the EWM profile in the control plots during treatment on May 23, 2017. Data was collected in both the .SLG (traditional sonar on HDS line) and the .SL2 (multi-channel structure scan) formats.



The data collected was then uploaded to a data processing website for time of treatment processing of SAV data in the treatment plots. The SAV data collected (coverage, height in the water column, and bio-volume) was performed in order to support CLI's best management practices and the use of best available technologies as well as post-treatment efficacy evaluations. The map image generated from the May 23, 2016 treatment will follow in a separate attachment.



### Treatment Site, Herbicide Application Rate & Cost Data

**Project Cost Data:** Table 2 below outlines the quantities of herbicide used, herbicide costs, application costs, total costs, and cost per acre.

- The Aquathol K costs were \$72.10 per gallon and DMA 4 IVM costs were \$23.00 per gallon including delivery to the project site. The total herbicide costs were \$30,887.95.
- The herbicide application costs were \$125.00 per acre for a total herbicide application cost of \$3,075.00.
- The mobilization and program costs were \$984.00
- The total 2017 herbicide treatment project costs as outlined above and detailed below in the table come to a total of \$34,96.95.

#### Treatment Project Cost Data

2017 North Twin Lake Herbicide Rate/Cost Data				Aquathol K (Liquid Endothall)			DMA 4 IVM (Liquid 2,4- D)			Application Costs/Acre	Application Costs/Site	Herbicides Costs/Acre	Herbicides Costs/Site	Total
ID	Acres	Mean Depth Estimate	Volume	Rate	Qty/Acre	Total	Rate	Qty/Acre	Total	Application	Application	Herbicides	Herbicides	Application +Herbicides
A-17	10.6	9.0	95	1.5	8.7	91.9	4.0	25.7	272.9	\$125.00	\$1,325.00	\$1,217.13	\$12,901.54	\$14,226.54
B-17	5.2	9.5	49	1.5	9.1	47.6	4.0	27.2	141.3	\$125.00	\$650.00	\$1,284.74	\$6,680.67	\$7,330.67
C-17	8.8	9.5	84	1.5	9.1	80.5	4.0	27.2	239.2	\$125.00	\$1,100.00	\$1,284.74	\$11,305.75	\$12,405.75
<b>TOTALS</b>	<b>24.6</b>		<b>228</b>			<b>219.9</b>			<b>653.5</b>		<b>\$3,075.00</b>		<b>\$30,887.95</b>	<b>\$33,962.95</b>

**LIST OF PROJECT PERSONNEL**

**PROJECT MANAGER:**

Amy Kay  
WI Commercial Pesticide Applicator  
Applicators Certification No. 90532  
Cell Phone: 715-891-6798  
Email: akay@cleanlakesmidwest.com

**SITE SAFETY AND HEALTH OFFICER:**

Tom Moorhouse  
WI Commercial Pesticide Applicator  
Cell Phone: 818-201-5982  
Email: [tmoorhouse@cleanlake.com](mailto:tmoorhouse@cleanlake.com)

**ALTERNATE SITE SAFETY OFFICER:**

Amy Kay  
Cell Phone: 715-891-6798

**EMERGENCY RESPONSE COORDINATOR:**

Tom Moorhouse  
Cell Phone: 818-201-5982

**ALTERNATE EMERGENCY COORDINATOR:**

Amy Kay  
Cell Phone: 715-891-6798

**FIELD SUPPORT PERSONNEL:**

Brandyn Dahlquist  
WI Certified Mixer/Loader  
Northwoods Distribution Services  
Cell Phone: 715-482-9901

**NORTH TWIN LAKE CONTACT:**

Jay Wittman  
Cell Phone: 715-574-9531  
Email: jjwittman@charter.net

**Attachments:**

- **Wisconsin DNR Aquatic Plant Management Herbicide Treatment Record for May 23, 2017.**
- **North Twin Lake, 2017 Aquatic Pesticide Application Plan (APAP) that includes:**
  - Wisconsin DNR Approval Letter & Permit Application
  - Product Label and MSDS for Aquathol K and DMA 4 IVM
  - Site Specific Safety Plan for the project, May 2017

**END OF PESTICIDE APPLICATION REPORT (See Attachments)**