

To: Mountain Lakes District:
 Planning Board, ZBA, Water and Recreation Committees,
 Home and Lot Owners and Renters

From : Tom Eighmy, Planning Board (tbeighmy@rcn.com)

2012 VLAP Sampling Data

I received the first results for the July 5, 2012 sampling on August 4, a very fast turnaround. A published report will be issued later, but the following data provide all that we need to know from the laboratory testing.

Measurement and Comment	Lake	North (Lower) Outlet
	South (Upper) Inlet	
1] E-coli bacteria (human, dog, cow & goose poop)	68/100 mL	12/100 mL
	<i>For beach areas, a single measure greater than 88 (or a geometric mean of 47 over 3 samplings in 60 days) signals possible sewage. Recall we took a single sample one day after the major annual date of beach use, toilet flushing and rain runoff. Seemingly not a problem but we need to sample each year.</i>	
2] Chlorophyll -a (milligrams/cubic meter)	9.45 Deep Spot	6.07 & 6.01 (Duplicate Composite Measures)
	<i>0-5= Good; 5.1-15= More than desirable; More than 15 =Nuisance Amounts An important measure of plant abundance (algae blooms weed growth) and overall lake health. North (Outlet) Lake is in better shape. We await the final published report to see the long term trends.</i>	
3] Total Phosphorus (ug/L milligrams/Liter)	11 Inlet 19 Surface Deep Spot 21 Depth “ “	7.8 Surface Deep Spot 15.0 Depth “ “ 7.1 Outlet
	<i>1-10 Low- Good; 11-20 Average; 21-40 High; More than 40 Excessive We await the final published report to see the long term trends.</i>	

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Total Phosphorus is the second critical measure of lake quality.

DES notes “Phosphorus is the most important water quality parameter measured in our lakes. It is the nutrient that limits the algae’s ability to grow and reproduce. Phosphorus sources around a lake typically include septic systems, animal waste, lawn fertilizer, road and construction erosion and natural wetlands.”

Two samples in the North (Outlet) Lake are in the Good range.
 One sample “ “ “ “ “ is Average
 Two samples in the South (Inlet) “ are “
 Depth sample in the “ “ “ verges on High

Some phosphorus accumulation at depth results from natural underwater vegetative decay.

4] Clarity or Turbidity < 2 meters < 2 meters
 Clarity falls due to suspended matter (silt, clay, algae, fertilizer, effluent)
 flowing into the lakes.
 All measurements at all depths with and without Viewscope
 for both lakes were below 2 meters which NH DES (Department of
 Environmental Services) defines as **POOR**. This is not good.
 (Turbidity levels--light scattering—are perhaps a less telling measure, but both
 lakes are above the state median.)

FOR ALL MOUNTAIN LAKES LANDOWNERS:

Vegetated Shoreline and Lot Buffers are the most efficient as well as a no cost barriers to Runoff.
 Restricted or zero use of lawn fertilizers appears to be the other no cost option immediately available to
 existing land owners to improve lake quality. Use Zero Phosphate dish detergent and clothes washing
 detergents.

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 The following three measures are of technical value but perhaps less critical for the overall health of our  
 lakes.

5] ANC 10.1 8.7  
 ( Acid Neutralizing Low Vulnerability Moderately Vulnerable  
 Capacity ) Low values reduce the ability to offset acid rain or construction Runoff.  
 Not yet a problem.

6] Conductivity 90.2, 90.8, 89.1, 88.8 85.9, 103.2,102.3,84.3  
 (multiple depths and Capacity to carry an electric current.  
 sites) Values over 100 as in North Lake deep spot may indicate human disturbance  
 (road salting, septic systems, soil runoff) Not yet a problem.

pH 6.71, 6.38, 6.93, 6.97 7.17, 6.41, 6.42, 7.16  
 (multiple depths and All values cluster around 7.0 or neutral. Acid levels below 5 are harmful for  
 Sites) fish growth and reproduction. Not a problem.  
 Note to fisherman—DES biologist noted that the water is too warm for trout  
 reproduction.

Cc: Don Drew, Maintenance  
 Marsha Luce, Office for Distribution  
 Sara Steiner DES