

DARRIN FRESH WATER INSTITUTE

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Environmental
Assessment Programs

Jonathan P. Zehr
Associate Director of
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Educational Programs

April 26, 1996

Mr. Jim Davis
Eagle Lake
Ticonderoga, NY 12883

Dear Jim,

The samples provided from Eagle Lake on April 22, 1996 have been analysed for a number of nutrient constituents as well as fecal coliform bacteria. The results from these analyses allow a fundamental understanding of the "health" of Eagle Lake with regard to nutrient inputs and possible septic contamination from faulty household systems. All results are given in the following tables with a brief interpretation with respect to Eagle Lake.

From all the samples provided, there appears to be no sign of coliform bacterial contamination to the lake from septic sources from the point and time this sample was collected. Fecal coliform levels were well below the New York State DOH standards (see below) for waters used for contact recreation and is not of a concentration that would normally indicate a faulty septic system or any other significant point source. Please bear in mind that these results indicate conditions *only* at the time of sampling and can change through time.

Maximum Allowable Levels of Coliform Bacteria in Waters Used for Contact Recreation (NYS Dept. of Health)		
Bacterial Test	Max. 5 Sample Mean	Max. Single Result
Total Coliform	2400 per 100 mls	5000 per 100 mls
Fecal Coliform	200 per 100 mls	1000 per 100 mls



Adirondack Field Station at Bolton Landing
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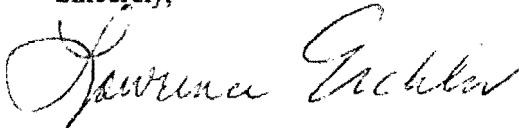
Analyses for nutrient concentration are the most basic measurements taken of a lake that show the level of a lake's eutrophication, that is, the level of nutrients available for the growth of algae in the water column. The results from the samples provided for drainage systems around Eagle Lake indicate nutrient additions from a number of these systems. Capture and detention of stormwaters before they reach the lake may be a consideration.

The pH of the samples collected show slightly alkaline waters, and within ranges that are not inhibitory to species most desirable for Eagle Lake. The alkalinity measurements show the water's ability to neutralize acidic inputs. The main source of these inputs would be from acid precipitation. The alkalinity of Eagle Lake appears to be sufficient to neutralize acid inputs, but continued monitoring of this parameter is important to track the possible effects of acid precipitation. Streams tributary to the lake at the time of sampling were contributing buffering capacity to the lake.

The chloride concentrations from Eagle Lake are in the moderate range for lakes in this region. On the whole, chloride is a relatively inert ion at low concentrations and poses little threat to native flora and fauna. Chloride measurements can provide a useful means to track roadway runoff in the spring as the deicing salts are washed into the lake during large runoff events. Carried along with this runoff are usually large amounts of sediments and nutrients which can become a problem if large amounts of roadway runoff reach the lake without the benefit of percolation into the soils.

If we can be of any further assistance, please feel free to contact us.

Sincerely,



Lawrence Eichler
Research Scientist

Enc.

Sample ID: 96-19
Date Collected: 22-Apr-96
Matrix: Water
Collected By: P. Burroughs
Location: Eagle Lake - Between Tiedermans & Conklins Large Island

<u>Analysis Date</u>	<u>Analyte</u>	<u>Method</u>	<u>Result</u>	<u>Units</u>
22-Apr-96	Fecal Coliform	Membrane Filtration	11	CFU/100m

Darrin Fresh Water Institute**Report of Analysis**

Sample ID: 96-20
Date Collected: 22-Apr-96
Matrix: Water
Collected By: P. Burroughs
Location: Eagle Lake - Conklins Boathouse Culvert

<u>Analysis Date</u>	<u>Analyte</u>	<u>Method</u>	<u>Result</u>	<u>Units</u>
22-Apr-96	pH	Electrometric	7.61	
23-Apr-96	Alkalinity	Gran Titration	47.5	mg/l CaCO ₃
24-Apr-96	Orthophosphate	Single Reagent Ascorbic Acid	6	ug P/l
25-Apr-96	Nitrate	Ion Chromatography	0.01	mg N/l
26-Apr-96	Chloride	Ion Chromatography	22	mg/l
27-Apr-96	Sulfate	Ion Chromatography	2.42	mg S/l

Darrin Fresh Water Institute**Report of Analysis**

Sample ID: 96-22
Date Collected: 22-Apr-96
Matrix: Water
Collected By: P. Burroughs
Location: Eagle Lake - Inlet behind Secone House

<u>Analysis Date</u>	<u>Analyte</u>	<u>Method</u>	<u>Result</u>	<u>Units</u>
22-Apr-96	pH	Electrometric	6.85	
23-Apr-96	Alkalinity	Gran Titration	25	mg/l CaCO ₃
24-Apr-96	Orthophosphate	Single Reagent Ascorbic Acid	3	ug P/l
25-Apr-96	Nitrate	Ion Chromatography	lt 0.01	mg N/l
26-Apr-96	Chloride	Ion Chromatography	12.3	mg/l
27-Apr-96	Sulfate	Ion Chromatography	1.20	mg S/l

Darrin Fresh Water Institute**Report of Analysis**

Sample ID: 96-24
Date Collected: 22-Apr-96
Matrix: Water
Collected By: P. Burroughs
Location: Eagle Lake - Culvert at Allens House

<u>Analysis Date</u>	<u>Analyte</u>	<u>Method</u>	<u>Result</u>	<u>Units</u>
22-Apr-96	pH	Electrometric	7.42	
23-Apr-96	Alkalinity	Gran Titration	53	mg/l CaCO ₃
24-Apr-96	Orthophosphate	Single Reagent Ascorbic Acid	2	ug P/l
25-Apr-96	Nitrate	Ion Chromatography	0.15	mg N/l
26-Apr-96	Chloride	Ion Chromatography	60.5	mg/l
27-Apr-96	Sulfate	Ion Chromatography	2.54	mg S/l

Darrin Fresh Water Institute

Report of Analysis

Sample ID: 96-23
Date Collected: 22-Apr-96
Matrix: Water
Collected By: P. Burroughs
Location: Eagle Lake - Culvert East of Watters Dock

<u>Analysis Date</u>	<u>Analyte</u>	<u>Method</u>	<u>Result</u>	<u>Units</u>
22-Apr-96	pH	Electrometric	7.59	
23-Apr-96	Alkalinity	Gran Titration	46	mg/l CaCO ₃
24-Apr-96	Orthophosphate	Single Reagent Ascorbic Acid	12	ug P/l
25-Apr-96	Nitrate	Ion Chromatography	0.2	mg N/l
26-Apr-96	Chloride	Ion Chromatography	17.3	mg/l
27-Apr-96	Sulfate	Ion Chromatography	2.8	mg S/l

Darrin Fresh Water Institute**Report of Analysis**

Sample ID: 96-21
Date Collected: 22-Apr-96
Matrix: Water
Collected By: P. Burroughs
Location: Eagle Lake - Culvert East of Chamberlains

<u>Analysis Date</u>	<u>Analyte</u>	<u>Method</u>	<u>Result</u>	<u>Units</u>
22-Apr-96	pH	Electrometric	7.43	
23-Apr-96	Alkalinity	Gran Titration	47.5	mg/l CaCO ₃
24-Apr-96	Orthophosphate	Single Reagent Ascorbic Acid	21	ug P/l
25-Apr-96	Nitrate	Ion Chromatography	0.09	mg N/l
26-Apr-96	Chloride	Ion Chromatography	5.22	mg/l
27-Apr-96	Sulfate	Ion Chromatography	1.76	mg S/l

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Paid 8/19/96

BILL FOR LABORATORY SERVICES

1	Fecal Coliform Bacterial Analysis @ \$7.50 ea.	7.50
5	Orthophosphorus Analysis @ \$7.50 ea.	37.50
5	Nitrate Analysis @ \$7.50 ea.	37.50
5	pH Analysis @ \$3.00 ea.	15.00
5	Alkalinity Analysis @ \$10.00 ea.	50.00
5	Chloride Analysis @ \$7.50 ea.	37.50

TOTAL \$185.00

Please make check payable to:

To →
Darrin Fresh Water Institute
RR#1 Box 84C
Bolton Landing, NY 12814
Attn: L. Eichler



for Spring test of Hank's window

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