

**GREAT SACANDAGA LAKE
COLIFORM MONITORING PROGRAM – 2011
SECOND INTERIM REPORT**

prepared for

The Great Sacandaga Lake Advisory Council (GSLAC)

By

Lawrence W. Eichler, Research Scientist
&
Charles W. Boylen, Associate Director
Darrin Fresh Water Institute
5060 Lakeshore Drive
Bolton Landing, NY 12814



Darrin Fresh Water Institute

A Research Center of Rensselaer Polytechnic Institute

August 22, 2011

Great Sacandaga Lake Coliform Monitoring Program

The Great Sacandaga Lake Coliform Monitoring Program (GSLCMP) for 2011 is designed to quantify the bacterial water quality at selected locations in Great Sacandaga Lake for contact recreation purposes. Public bathing facilities, recreational areas and runoff locations will be a primary focus. Approximately 20 shoreline locations will be sampled during July and an additional 20 locations sampled in August. The time interval coincides with the period of maximum population density and intensity of recreational use. Two primary measurements will be made for each sample: Total Coliform (TC) and Fecal Coliform (FC) Bacteria. These bacteria serve as indicators of the presence of animal or human waste. The presence of elevated levels of these bacteria indicate potentially disease-causing protozoa, bacteria and other microorganisms may be present in the water. Follow-up sampling will be conducted within 48 hours for any samples exceeding contact recreation standards (Table 1). Should adjacent public swimming areas exist, they will be sampled along with any follow-up sampling efforts. Sampling sites will be chosen in consultation with the Great Sacandaga Lake Advisory Council (GSLAC). DFWI personnel will attempt to assist the local regulatory authorities with location of bacterial sources, working closely with the county and local authorities to locate and correct sources of contamination. Follow-up investigations by the NYS Department of Health, NYS Department of Environmental Conservation and county and local government personnel are encouraged at sites with elevated fecal coliform levels.

Action Levels of the Great Sacandaga Lake Coliform Monitoring Program

In order to respond effectively to contamination problems detected during the Great Sacandaga Lake Coliform Monitoring Program, the following actions will occur:

1. If 200 or more fecal coliform bacteria per 100 milliliters are reported, the site will be resampled during the next sampling cycle.
2. If 400 or more fecal coliform bacteria per 100 milliliters are reported, the site will be resampled within 24 to 48 hours. The data for both samples will be reported to the GSLAC. They will accept responsibility for contacting the appropriate regulatory agencies.

Follow-up samples to locate specific shoreline problems are not within the guidelines of this program and will be the responsibility of the appropriate regulatory agencies. The Darrin Fresh Water Institute will provide technical assistance upon request, however the cost of additional sampling and analysis must be covered by the local, county or state agency responsible for water quality complaints.

SUGGESTIONS FOR INTERPRETATION OF COLIFORM DATA

New York State Department of Health has determined maximum allowable bacterial levels for contact recreation (swimming, wading, etc.). A table of these bacterial concentrations is included. When these maximum bacterial levels are exceeded, the New York State Department of Health is empowered to close the location to bathing until the problem or problems are corrected. These levels are used by the Darrin Fresh Water Institute to determine appropriate responses to various bacterial concentrations found during sampling. A table of these responses is included.

Interpretation of data to determine and locate sources of contamination (human or other warm-blooded animal) requires more than just current bacterial levels. A knowledge of past history of the site, weather, geology of the area, drainage patterns, and some information on human activities in the area are also useful. To differentiate between human waste and that produced by other warm-blooded animals, it is sometimes helpful to refer to the ratio of fecal coliform to Enterococcus bacteria (FC/EC). An FC/EC ratio of 4 or greater is generally considered indicative of contamination of human origin. Enterococcus (EC) Bacteria abundance will be determined for any resample locations.

Table 1. New York State coliform bacteria standards for bathing beaches.

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	
Fecal Coliform	200 per 100 mls	1000 per 100 mls
Enterococcus	33 per 100 mls	61 per 100 mls

Definitions

TC – Total Coliform Bacteria

FC – Fecal Coliform Bacteria

EC – Enterococcus Bacteria

FC/EC – Ratio of Fecal Coliform to Enterococcus Bacteria

TNTC – Too Numerous to Count

CONF – Confluent growth of target bacteria

MAT – Confluent growth of non-target bacteria

? – High background, referring to non-target growth of bacteria interfering with counts of target bacteria

lt – Less than

LA – Laboratory accident preventing enumeration of bacteria

2011 GREAT SACANDAGA LAKE COLIFORM MONITORING PROGRAM

SITE	DATE	TC/100ml	FC/100ml	NOTES
Town Of Broadalbin				
Frenchman's Creek	05-Jul-11	2	<1	Moderate flow, brown
McMurray's Boat Livery	15-Aug-11	60	14	Calm, slightly turbid
NYDEC Broadlbin Boat Launch	15-Aug-11	60	12	calm, clear, AM rain
Sacandaga Bible Conference	05-Jul-11	17	8	Slightly turbid, bathers
Town of Day				
Allentown Creek	05-Jul-11	760	220	High flow, clear
Allentown Creek	15-Aug-11	450	210	Moderate flow, rain
Bell Brook	15-Aug-11	30	27	Rain, Moderate flow and Clear
Daley Creek	15-Aug-11	330	62	Moderate Flow, rain and clear
Sacandaga Avenue Brook	05-Jul-11	100	58	Cold, brown, high flow
Sacandaga Avenue Brook	15-Aug-11	10	1	Low flow, cloudy
Sand Creek	05-Jul-11	59	44	Clear, cold, high flow
Saratoga Biathlon Creek	05-Jul-11	190	50	Cold, brown, high flow
Saratoga County Boat Launch	05-Jul-11	16	7	Choppy, warm, 2 dogs
Town of Edinburgh				
Batchellerville Creek	05-Jul-11	52	41	Clear, cold, high flow, many ducks
Beechers Creek	05-Jul-11	28	14	Moderate flow, brown
Ponderosa Pines Beach	05-Jul-11	41	12	Many bathers, slightly turbid
Ponderosa Pines Beach	15-Aug-11	20	2	Rain, No bathers, Clear
Richters Brook	15-Aug-11	820	270	Rain, cool, clear and moderate flow
Town of Luzerne				
Conklingville Dam	15-Aug-11	30	2	Rain, Calm and clear
Town of Mayfield				
Cranberry Cove Marina	15-Aug-11	10	2	Calm, Clear, Rain
Kennyetto Creek @ Route 30	05-Jul-11	740	330	Moderate flow, slightly turbid
Kennyetto Creek @ Route 30	15-Aug-11	4900	1590	AM rain, moderate flow, slightly turbid
Kennyetto Creek @ Route 30	16-Aug-11	8000?	7400?	High flow, muddy
Mayfield Lake Spillway	15-Aug-11	80	30	AM rain, moderate flow, foam turbid
Mayfield Town Beach	05-Jul-11	23	9	Clear, calm, no bathers
Mayfield Town Beach	15-Aug-11	30	4	Rain, no bathers, clear
Sunset Bay	05-Jul-11	2	3	Cool, clear
Vandenburg Point Swim Area	05-Jul-11	13?	2	Cool, clear, no bathers
Vandenburg Point Swim Area	15-Aug-11	10	3	calm, clear, AM rain
Town of Northampton				
Northville Town Beach	05-Jul-11	37	13	2 bathers, calm
Northville Town Beach	15-Aug-11	140	51	Rain, No bathers, seagulls
NYDEC Northampton Beach	15-Aug-11	30	6	Rain, no bathers, clear
NYS DEC Northampton Beach	05-Jul-11	42	29	Warm, many bathers
Sacandaga Beach/ Sport Island Pub	05-Jul-11	33	10	Several bathers, calm
Sacandaga Beach/ Sport Island Pub	15-Aug-11	10	8	No bathers, rain
Sacandaga Park Brook	05-Jul-11	450	100	Turbid, low flow
Small (Northville) Lake Spillway	15-Aug-11	20	7	Clear and Rain
State Boat Launch- Northampton	05-Jul-11	300	32	Calm, slightly turbid
Town of Providence				
Cloutler Creek	15-Aug-11	830	400	Rain, Moderate flow and Cloudy
Cloutler Creek	16-Aug-11	700	200	High flow, brown
Providence Town Beach	05-Jul-11	12	4	Closed, slightly turbid
Providence Town Beach	15-Aug-11	40	7	No bathers, rain and clear

Great Sacandaga Lake

2011 Coliform Sampling

