

MEMORANDUM

TO: Andrew Stack, PE, Town Engineer; Arthur Markos, Project Manager, Town of Tewksbury

FROM: Jaurice A. Schwartz, PE; Andy Gaughan, EIT, Weston & Sampson

DATE: September 22, 2023

SUBJECT: Long Pond Sampling

Weston & Sampson is pleased to present this memorandum summarizing sampling efforts conducted in Long Pond on April 20, 2023. The goal of this project was to obtain sampling data to assist in making a determination as to whether the elevated levels of phosphorus in the pond are originating from failing septic systems on the developed side of the pond, from stormwater entering the pond via the inlet at the north end of the pond, or nonpoint source runoff from the larger watershed. This memorandum summarizes the sampling results, pond characteristics and recommendations for future sampling and next steps. The results discussed in this report provide a snapshot of water quality as observed on the day of sampling and are not necessarily indicative of long-term trends. The limitations of the data were considered when developing conclusions and recommendations.

Background

A day of in-pond sampling, via access by canoe, was performed in Long Pond (MA83010) on April 20, 2023, to gain an understanding of potential sources of pollution in the vicinity of the waterbody that could be impacting receiving water quality. The 44-acre pond is situated on the southern border of Tewksbury, south of the intersection between Whipple Road and Pleasant Street. Long Pond is located in the Shawsheen River Basin and is listed on the Final Massachusetts Integrated List of Waters for the Clean Water Act 2018/2020 Reporting Cycle as a Category 5 impaired water for algae, chlorophyll-a, dissolved oxygen, total phosphorous, and transparency/clarity. Due to its impairment for phosphorus, Long Pond is included under the 2016 MS4 Permit as requiring a Phosphorus Source Identification Report (PSIR), which was developed during Permit Year 4. This PSIR was ultimately developed for the entire Town of Tewksbury, as most catchment areas either directly discharge to a phosphorus-impaired water body, or discharge to a water body that is tributary to a receiving water impaired for phosphorus. The report was updated during Permit Year 5 to expand on potential opportunities to retrofit the Town's existing stormwater system with the goal of prioritizing retrofits in catchments with high phosphorus loadings based on land use and impervious area data.

Long Pond is presumed to be a Class C water, designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for secondary contact recreation, like boating. These waters shall be suitable for the irrigation of crops used for consumption after cooking, and for compatible industrial cooling and process uses. These waters shall

have good aesthetic value—while primary contact recreation, like swimming, is not a designated use, Tewksbury is interested in improving and maintaining water quality to support swimming in the future. The 44-acre pond is developed on the east side with seven (7) residential properties and has two (2) residential properties on the southern edge. The western and northern portion of the pond are bordered by a wetland and woodland, respectively.

Long Pond has a relatively small watershed and drains to Richardson Pond in Billerica, then to Content Brook and the Shawsheen River. Long Pond has one inlet and one outlet. The inlet of the pond collects flow from a 0.26 square mile area consisting of medium density residential and forested area. The entire pond collects runoff from a 0.97 square mile area including the inlet and the pond. A map showing each subwatershed can be found in Attachment A.

Work Conducted

Elevated phosphorus levels in surface waters can originate from multiple sources, including failing septic systems, stormwater runoff from impervious surfaces, and decaying organic material. To determine if the potential source of the elevated levels of phosphorus in Long Pond are specifically from failing septic systems or other sources within the watershed of the pond, sampling was conducted at three (3) locations near existing residential properties along the developed side of the pond, three (3) locations along the undeveloped side of the pond, and at the pond's inlet and outlet. A map of the pond and sampling locations is included as Figure 1.

Each sampling location identified in Figure 1 was visited on April 20, 2023. There was no rainfall recorded in the five (5) days prior to sampling. Weston & Sampson field staff accessed the sampling locations by canoe. A Kemmerer water sampler was used to obtain samples from a depth of two-feet throughout the pond. Samples were taken at eight (8) locations and analyzed using field instrumentation for the following parameters: chlorine, conductivity, salinity, and temperature. Chlorine was analyzed using a Hach DR 850 Colorimeter; while temperature, conductivity, and salinity were measured using a Pocket Pro+ Multi 1 Tester. Samples were also sent to Nelson Analytical Laboratory in Manchester, New Hampshire to be analyzed for ammonia, dissolved oxygen, enterococcus, nitrate, nitrite, total coliform bacteria, E. coli, phosphorus, total suspended solids and turbidity. These parameters were selected to convey information regarding the overall health of the pond, and whether failing septic systems may be a contributing factor to the high concentrations of phosphorus within the pond.

Sampling Procedures

All sampling bottles were procured from Nelson Analytical Laboratory. Using the Kemmerer sampling unit, a sample was obtained from a depth of two feet within the pond and was used to fill each of the lab bottles. The bottles were labeled and placed in a cooler with ice. E. coli and Total Coliform were analyzed from one 120mL sterile bottle. Enterococcus was analyzed from one 120mL sterile bottle. Ammonia and Total Phosphorus were analyzed from one 500mL bottle preserved with sulfuric acid. Surfactants and Total Suspended Solids were analyzed from one 500mL unpreserved plastic bottle. Nitrate, nitrite and turbidity were all analyzed from one 500mL unpreserved plastic bottle. Staff followed appropriate standard sampling procedures prior to taking each sample to remove any potential

contamination. In-field samples were analyzed using the instrumentation discussed above and each unit was rinsed three times to remove any potential contamination from prior uses. A chain of custody form was completed for those samples analyzed at the laboratory, which were transported by a courier. The chain of custody form is included in Attachment B.

Figure 1: Sampling Locations



Sampling Results

Water quality samples were analyzed by Nelson Analytical for ten analytes: ammonia, dissolved oxygen, enterococcus, nitrate, nitrite, total coliform bacteria, e. coli, phosphorus, total suspended solids, and turbidity. Lab results and in field sampling results are summarized in Tables 1 and 2, and included in Attachment B.

Table 1: Laboratory Sampling Results

Sample ID	Date	Ammonia (mg/L)	Dissolved Oxygen (mg/L)	Enterococcus (mpn/100mL)	Surfactants (mg/L)	Nitrate -N (mg/L)	Nitrite-N(mg/L)	Total Coliform Bacteria (mpn/100 mL)	E.coli (mpn/10 0mL)	Phosphorus as P (mg/L)	TSS (mg/L)	Turbidity (NTU)
Inlet	4/20/2023 8:30 AM	<0.05	9.51	10.00	0.06	<1.0	<0.01	272.00	1.00	0.04	<2.0	<0.5
Outlet	4/20/2023 9:04 AM	0.07	9.71	10.00	0.09	<1.0	<0.01	118.00	3.00	0.05	<2.5	<0.5
Developed #1	4/20/2023 8:40 AM	<0.05	9.70	10.00	0.08	<1.0	<0.01	219.00	2.00	0.04	<2	<0.5
Developed #2	4/20/2023 8:50 AM	0.12	9.94	84.00	0.06	<1.0	<0.01	50.00	<1	0.04	<2.5	<0.5
Developed #3	4/20/23 9:14 AM	<0.05	9.53	<10	0.09	<1.0	<0.01	155.00	14.00	0.03	<2	<0.5
Undeveloped #1	4/20/2023 10:40 AM	<0.05	10.48	41.00	0.07	<1.0	<0.01	58.00	<1	0.04	<2.5	1.20
Undeveloped #2	4/20/2023 10:15 AM	<.10	10.25	10.00	0.12	<1.0	<0.01	75.00	<1	0.03	<2.0	<0.5
Undeveloped #3	4/20/2023 9:25 AM	<.10	10.51	31.00	0.10	<1.0	<0.01	60.00	2.00	0.05	2.40	<0.5
Water Quality Standards	-	.5 mg/l*	Chronic: <5.0 mg/L Acute< 3.0 mg/L	-	>0.25 mg/L*	-	-	-	>630 mpn/100 ml	-	-	aesthetic

*These water quality standards stem from the 2016 MS4 Permit.

Table 2: In-Field Sampling Result

Sample ID	Date	Temperature (F)	Salinity (ppt)	Conductivity ($\mu\text{s}/\text{cm}$)	Chlorine (mg/L)
Inlet	4/20/2023 8:30 AM	56.6	0.24	486.00	0.06
Outlet	4/20/2023 9:04 AM	54.8	0.25	494.00	0.15
Developed #1	4/20/2023 8:40 AM	53.6	0.25	490.00	0.07
Developed #2	4/20/2023 8:50 AM	58.6	0.24	488.00	0.01
Developed #3	4/20/23 9:14 AM	55	0.25	493.00	0.15
Undeveloped #1	4/20/2023 10:40 AM	57.6	0.24	487.00	0.06
Undeveloped #2	4/20/2023 10:15 AM	57.2	0.25	495.00	0.03
Undeveloped #3	4/20/2023 9:25 AM	55.8	0.24	491.00	0.00
Water Quality Standards	-	>85	-	-	0.019

Pond Observations

While sampling, beaver activity was observed in and around the pond. A beaver dam was observed at the outlet of the pond, obstructing flow as shown in the photo below.



In addition to the dam, a beaver den and other beaver activity was observed on the undeveloped side of the pond. The den looked to be active with several trails leading into the wetlands from the water's edge surrounding the den. A map of observed activity and additional pictures are included in Attachment C.

Conclusions and Recommendations

A day of sampling data only provides information on specific conditions at that point in time, and does not provide a comprehensive understanding of the actual water quality of the pond nor confirm the source of elevated levels of phosphorus within the pond. The following table summarizes the sampling results from the inlet, outlet, and provides an average of the sampling results obtained for various parameters from the developed and undeveloped portions of the pond.

Table 3: Averaged Sampling Results

Parameter	Inlet	Outlet	Developed Side Average	Undeveloped Side Average
Chlorine (mg/L)	0.06	0.15	0.077	0.03
Temperature (C)	13.7	12.7	13.2	13.8
Salinity (ppt)	0.24	0.25	0.247	0.243
Conductivity (μ s/cm)	486	494	490.3	491
Ammonia (mg/L)	<0.05	0.07	<0.073	<0.066
Dissolved Oxygen(mg/L)	9.51	9.71	9.723	10.41
Enterococcus (mpn/100mL)	10	10	47	27.33
Surfactants (mg/L)	0.06	0.09	0.077	0.097
Nitrate-N (mg/L)	<1.0	<1.0	<1.0	<1.0
Nitrite- N(mg/L)	<0.01	<0.01	<0.01	<0.01
Total Coliform Bacteria (mpn/100mL)	272	118	141.33	64.33
E. coli (mpn/100mL)	1	3	8	2
Phosphorus as P (mg/L)	0.04	0.05	0.038	0.037
TSS (mg/L)	<2.0	<2.5	<2.17	<2.3
Turbidity (NTU)	<0.5	<0.5	<0.5	<.733

In analyzing the sampling results, the following observations were made:

- Based on the averaged sampling results, chlorine, salinity, ammonia, enterococcus, total coliform bacteria, E. coli, and phosphorus were all slightly elevated on the developed side compared to the undeveloped side of the pond. Dissolved oxygen was lower on the developed side.
- It was visually observed that on the undeveloped side of the pond, the water was more stagnant. Sampling results indicated slightly higher concentrations of turbidity, TSS, surfactants, and conductivity.
- Concentrations of most parameters sampled and analyzed were lower at the inlet than at the outlet except for total coliform bacteria. Enterococcus, nitrate, nitrite, and turbidity measurements were the same at the inlet and outlet.
- The inlet sampling results were generally lower compared to the average sampling results from the developed side of the pond, for most, but not all parameters. Total coliform bacteria was higher at the inlet. Total coliform bacteria is associated with warm-blooded animals and can be

found in surface runoff as well as soil. The higher level of total coliform observed at the inlet could be attributed to the animals living in the watershed of the inlet.

- All sampling results were found to be lower than the Massachusetts surface water quality standards for Class C waterbodies.

No sampling results met the criteria for likely sewer input outlined in the 2016 Massachusetts MS4 Permit.¹

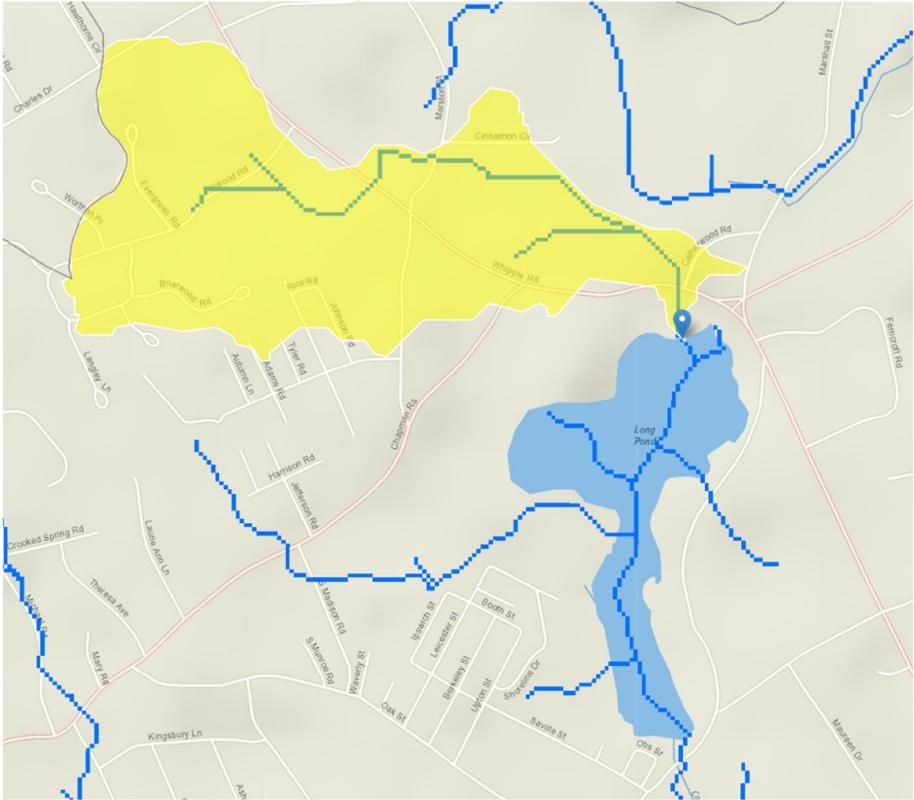
The results of this sampling event did not substantiate that septic systems in the vicinity of Long Pond are impacting water quality. The following short and long-term recommendations include steps that Tewksbury can take to collect additional in-pond data, more definitively determine the impact septic systems have on water quality and remove any potential impact associated with failing septic systems.

Recommendations:

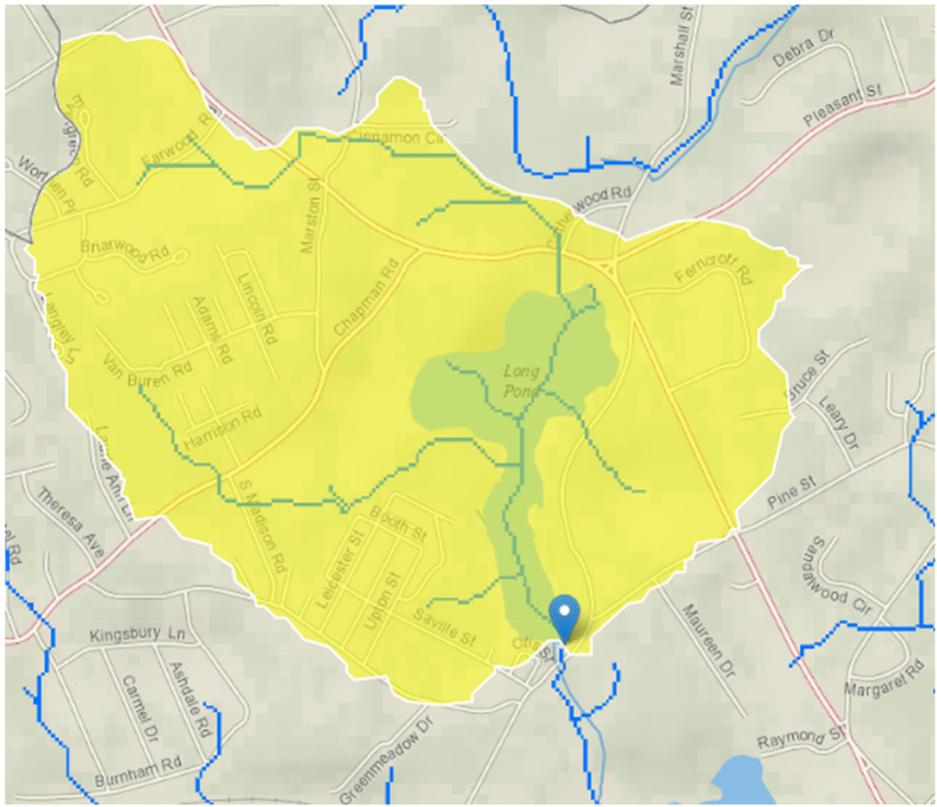
- Create a sampling plan to continually monitor water quality at each of the sampling locations to develop a more comprehensive understanding of water quality in Long Pond. The sampling plan should include quarterly sampling at each of the locations for the same parameters listed in this report throughout the summer months.
- Develop a comprehensive watershed-based plan for Long Pond to include more extensive in-pond sampling, better evaluate the potential sources of pollutants in the watershed and their potential impact on water quality within Long Pond, and develop a long-term plan to restore the health of Long Pond.
- Conduct a septic system survey and conduct regular inspections of the septic systems surrounding the pond to evaluate their condition.
- Consider decommissioning all septic systems and connecting to the existing sewer system to remove the potential for contamination.

¹ Olfactory or visual evidence of sewage, Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, Ammonia ≥ 0.5 mg/L, surfactants ≥ 0.25 mg/L, and detectable levels of chlorine.

Attachment A



Watershed for the Inlet of Long Pond



Watershed for Long Pond

Attachment B

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
 Manchester, NH 03109
 (603)622-0200

NH ELAP Accreditation #NH1005
 Maine Certification # NH01005
 Vermont State Certification # VT1005
 www.nelsonanalytical.com

Client: Weston & Sampson: 01 May 2023

55 Walkers Brooks Drive Reading MA , 01867:

Enclosed are the results of analytical testing performed on the following samples:

NOTE: Dissolved Oxygen testing was performed after receiving the samples at the lab.

Samples C1, C2, C3 were received with air space in the sample containers.

NOTE: Sample C3 was preserved after receiving at the lab for Total Phosphorus and Ammonia testing.

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
123042098.01	Tewksbury Long Pond, Tewksbury, MA:	Inlet	Surface Water	20-Apr-23 08:30	20-Apr-23 16:15
123042098.02	Tewksbury Long Pond, Tewksbury, MA:	Outlet	Surface Water	20-Apr-23 09:04	20-Apr-23 16:15
123042098.03	Tewksbury Long Pond, Tewksbury, MA:	S1	Surface Water	20-Apr-23 08:40	20-Apr-23 16:15
123042098.04	Tewksbury Long Pond, Tewksbury, MA:	S2	Surface Water	20-Apr-23 08:50	20-Apr-23 16:15
123042098.05	Tewksbury Long Pond, Tewksbury, MA:	S3	Surface Water	20-Apr-23 09:14	20-Apr-23 16:15
123042098.06	Tewksbury Long Pond, Tewksbury, MA:	C1	Surface Water	20-Apr-23 10:40	20-Apr-23 16:15
123042098.07	Tewksbury Long Pond, Tewksbury, MA:	C2	Surface Water	20-Apr-23 10:15	20-Apr-23 16:15
123042098.08	Tewksbury Long Pond, Tewksbury, MA:	C3	Surface Water	20-Apr-23 09:25	20-Apr-23 16:15

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:



Andrew Nelson Laboratory Director



Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #=Sample(s) received at laboratory do not meet method specified temperature criteria.

Solid samples are reported on a dry weight basis unless noted otherwise.
 Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7: Nelson Analytical EAI Div. NH1007, SUB4:NH2073, SUB5:NH2530, SUB8:NH2136, SUB9:NH2572

http://des.nh.gov/organization/divisions/water/dwgb/nhelap/
 http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
 https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml
 https://www.mass.gov/info-details/

490 East Industrial Park Drive
 Manchester, NH 03109
 (603)622-0200

NH ELAP Accreditation #NH1005
 Maine State Certification #NH01005
 Vermont State Certification #VT1005
www.nelsonanalytical.com

Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 08:30

123042098.01

**Tewksbury Long Pond,
 Tewksbury, MA
 Inlet**

Ammonia

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Ammonia as N	<0.05	0.05	mg/L	04/26/2023 12:00	E350.1	SUB8

Dissolved Oxygen

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Dissolved Oxygen	9.51	1.0	mg/L	04/20/2023 19:00	SM4500OG	AON

Enterococcus

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Enterococci	10	10	mpn/100mL	04/20/2023 17:30	Enterolert	KF

MBAS

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Surfactants	0.06	0.05	mg/L	04/21/2023 23:26	SM 5540C	SUB8

Nitrate

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	04/21/2023 17:09	SM 4500 NO3 D	LS

Nitrite

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	<0.01	0.01	mg/L	04/21/2023 16:55	SM 4500 NO2B	LS

Total Coliform Colilert 18 Quanti-Tray

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Coliform Bacteria	272	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.

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sampled Date: 20-Apr-2023 08:30

123042098.01

Tewksbury Long Pond,
 Tewksbury, MA
 Inlet

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	1	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Phosphorus, as P

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Phosphorus, as P	0.037	0.01	mg/L	04/22/2023 12:00	SM4500PE-11	SUB8

Total Suspended Solids

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
TSS	<2.0	2.0	mg/L	04/24/2023 12:00	SM 2540D	SUB8

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Turbidity	<0.5	<0.5	NTU	04/21/2023 12:30	SM 2130B	LS

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http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
<https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml>
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Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 09:04

123042098.02

Tewksbury Long Pond,
 Tewksbury, MA
 Outlet

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.07	0.05	mg/L	04/26/2023 12:00	E350.1	SUB8

Dissolved Oxygen

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Dissolved Oxygen	9.71	1.0	mg/L	04/20/2023 19:00	SM4500OG	AON

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	10	10	mpn/100mL	04/20/2023 17:30	Enterolert	KF

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.09	0.05	mg/L	04/21/2023 23:27	SM 5540C	SUB8

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	04/21/2023 17:09	SM 4500 NO3 D	LS

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	04/21/2023 16:55	SM 4500 NO2B	LS

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Coliform Bacteria	118	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #=Sample(s) received at laboratory do not meet method specified temperature criteria.

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http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
<https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml>
<https://www.mass.gov/certified-laboratories>

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Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 09:04

123042098.02

**Tewksbury Long Pond,
 Tewksbury, MA
 Outlet**

Total Coliform Colilert 18 Quanti-Tray

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
E. coli Bacteria	3	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Phosphorus, as P

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Phosphorus, as P	0.048	0.01	mg/L	04/22/2023 12:00	SM4500PE-11	SUB8

Total Suspended Solids

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
TSS	<2.5	2.5	mg/L	04/24/2023 12:00	SM 2540D	SUB8

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Turbidity	<0.5	<0.5	NTU	04/21/2023 12:30	SM 2130B	LS

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.

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Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 08:40

123042098.03

Tewksbury Long Pond,
 Tewksbury, MA

S1

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	<0.05	0.05	mg/L	04/26/2023 12:00	E350.1	SUB8

Dissolved Oxygen

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Dissolved Oxygen	9.70	1.0	mg/L	04/20/2023 19:00	SM4500OG	AON

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	10	10	mpn/100mL	04/20/2023 17:30	Enterolert	KF

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.08	0.05	mg/L	04/21/2023 23:28	SM 5540C	SUB8

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	04/21/2023 17:09	SM 4500 NO3 D	LS

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	04/21/2023 16:55	SM 4500 NO2B	LS

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Coliform Bacteria	219	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

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REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 08:40

123042098.03

Tewksbury Long Pond,
 Tewksbury, MA

S1

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	2	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Phosphorus, as P

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Phosphorus, as P	0.040	0.01	mg/L	04/22/2023 12:00	SM4500PE-11	SUB8

Total Suspended Solids

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
TSS	<2.0	2.0	mg/L	04/24/2023 12:00	SM 2540D	SUB8

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Turbidity	<0.5	<0.5	NTU	04/21/2023 12:30	SM 2130B	LS

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.

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Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 08:50

123042098.04

**Tewksbury Long Pond,
 Tewksbury, MA
 S2**

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.12	0.05	mg/L	04/26/2023 12:00	E350.1	SUB8

Dissolved Oxygen

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Dissolved Oxygen	9.94	1.0	mg/L	04/20/2023 19:00	SM4500OG	AON

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	84	10	mpn/100mL	04/20/2023 17:30	Enterolert	KF

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.06	0.05	mg/L	04/21/2023 23:28	SM 5540C	SUB8

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	04/21/2023 17:09	SM 4500 NO3 D	LS

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	04/21/2023 16:55	SM 4500 NO2B	LS

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Coliform Bacteria	50	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

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Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 08:50

123042098.04

Tewksbury Long Pond,
 Tewksbury, MA
 S2

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	<1	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Phosphorus, as P

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Phosphorus, as P	0.042	0.01	mg/L	04/22/2023 12:00	SM4500PE-11	SUB8

Total Suspended Solids

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
TSS	<2.5	2.5	mg/L	04/24/2023 12:00	SM 2540D	SUB8

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Turbidity	<0.5	<0.5	NTU	04/21/2023 12:30	SM 2130B	LS

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Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 09:14

123042098.05

Tewksbury Long Pond,
 Tewksbury, MA

S3

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	<0.05	0.05	mg/L	04/26/2023 12:00	E350.1	SUB8

Dissolved Oxygen

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Dissolved Oxygen	9.53	1.0	mg/L	04/20/2023 19:00	SM4500OG	AON

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	<10	10	mpn/100mL	04/20/2023 17:30	Enterolert	KF

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.09	0.05	mg/L	04/21/2023 23:30	SM 5540C	SUB8

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	04/21/2023 17:09	SM 4500 NO3 D	LS

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	04/21/2023 16:55	SM 4500 NO2B	LS

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Coliform Bacteria	155	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

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Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 09:14

123042098.05

Tewksbury Long Pond,
 Tewksbury, MA
 S3

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	14	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Phosphorus, as P

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Phosphorus, as P	0.031	0.01	mg/L	04/22/2023 12:00	SM4500PE-11	SUB8

Total Suspended Solids

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
TSS	<2.0	2.0	mg/L	04/24/2023 12:00	SM 2540D	SUB8

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Turbidity	<0.5	<0.5	NTU	04/21/2023 12:30	SM 2130B	LS

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Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 10:40

123042098.06

Tewksbury Long Pond,
 Tewksbury, MA

C1

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	<0.05	0.05	mg/L	04/26/2023 12:00	E350.1	SUB8

Dissolved Oxygen

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Dissolved Oxygen	10.48	1.0	mg/L	04/20/2023 19:00	SM4500OG	AON

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	41	10	mpn/100mL	04/20/2023 17:30	Enterolert	KF

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.07	0.05	mg/L	04/21/2023 23:31	SM 5540C	SUB8

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	04/21/2023 17:09	SM 4500 NO3 D	LS

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	04/21/2023 16:55	SM 4500 NO2B	LS

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Coliform Bacteria	58	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

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REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 10:40

123042098.06

Tewksbury Long Pond,
 Tewksbury, MA
 C1

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	<1	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Phosphorus, as P

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Phosphorus, as P	0.036	0.01	mg/L	04/22/2023 12:00	SM4500PE-11	SUB8

Total Suspended Solids

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
TSS	<2.5	2.5	mg/L	04/24/2023 12:00	SM 2540D	SUB8

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Turbidity	1.2	<0.5	NTU	04/21/2023 12:30	SM 2130B	LS

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REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 10:15

123042098.07

Tewksbury Long Pond,
 Tewksbury, MA
 C2

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	<0.10	0.10	mg/L	04/26/2023 12:00	E350.1	SUB8

Dissolved Oxygen

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Dissolved Oxygen	10.25	1.0	mg/L	04/20/2023 19:00	SM4500OG	AON

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	10	10	mpn/100mL	04/20/2023 17:30	Enterolert	KF

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.12	0.05	mg/L	04/21/2023 23:31	SM 5540C	SUB8

Nitrate

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrate-N	<1.0	1	mg/L	04/21/2023 17:09	SM 4500 NO3 D	LS

Nitrite

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Nitrite-N	<0.01	0.01	mg/L	04/21/2023 16:55	SM 4500 NO2B	LS

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Total Coliform Bacteria	75	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #=Sample(s) received at laboratory do not meet method specified temperature criteria.

Solid samples are reported on a dry weight basis unless noted otherwise.
 Subcontract Laboratories: SUB2: Nelson Analytical Maine NH2018 SUB 7; Nelson Analytical EAL Div. NH1007, SUB4:NH2073, SUB5:NH2530, SUB8:NH2136, SUB9:NH2557
<http://des.nh.gov/organization/divisions/water/dwgb/nhslap/>
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
<https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml>
<https://www.mass.gov/certified-laboratories>

490 East Industrial Park Drive
 Manchester, NH 03109
 (603)622-0200

NH ELAP Accreditation #NH1005
 Maine State Certification #NH01005
 Vermont State Certification #VT1005
 www.nelsonanalytical.com

Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 10:15

123042098.07

Tewksbury Long Pond,
 Tewksbury, MA
 C2

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	<1	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Phosphorus, as P

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Phosphorus, as P	0.031	0.01	mg/L	04/22/2023 12:00	SM4500PE-11	SUB8

Total Suspended Solids

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
TSS	<2.0	2.0	mg/L	04/24/2023 12:00	SM 2540D	SUB8

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Turbidity	<0.5	<0.5	NTU	04/21/2023 12:30	SM 2130B	LS

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.

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http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
<https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml>
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Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 09:25

123042098.08

**Tewksbury Long Pond,
 Tewksbury, MA**

C3

Ammonia

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Ammonia as N	<0.10	0.10	mg/L	04/26/2023 12:00	E350.1	SUB8

Dissolved Oxygen

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Dissolved Oxygen	10.51	1.0	mg/L	04/20/2023 19:00	SM4500OG	AON

Enterococcus

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Enterococci	31	10	mpn/100mL	04/20/2023 17:30	Enterolert	KF

MBAS

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Surfactants	0.10	0.05	mg/L	04/21/2023 23:32	SM 5540C	SUB8

Nitrate

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrate-N	<1.0	1	mg/L	04/21/2023 17:09	SM 4500 NO3 D	LS

Nitrite

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Nitrite-N	<0.01	0.01	mg/L	04/21/2023 16:55	SM 4500 NO2B	LS

Total Coliform Colilert 18 Quanti-Tray

<u>Analyte</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Units</u>	<u>Analyzed</u>	<u>Method</u>	<u>Analyst</u>
Total Coliform Bacteria	60	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.

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<https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml>
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Date Reported : 01-May-23 17:44

REPORT OF ANALYSIS

sampled Date: 20-Apr-2023 09:25

123042098.08

Tewksbury Long Pond,
 Tewksbury, MA

C3

Total Coliform Colilert 18 Quanti-Tray

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	2	1	mpn/100mL	04/20/2023 17:45	SM 9223B	KF

Phosphorus, as P

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Phosphorus, as P	0.045	0.01	mg/L	04/22/2023 12:00	SM4500PE-11	SUB8

Total Suspended Solids

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
TSS	2.4	2.0	mg/L	04/24/2023 12:00	SM 2540D	SUB8

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Turbidity	<0.5	<0.5	NTU	04/21/2023 12:30	SM 2130B	LS

Notes: mg/L=ppm; ug/L=ppb; ng/L=ppt, "<" denotes "less than". This report of analysis may not be modified in any way, or reproduced except in full, without written approval from Nelson Analytical, LLC. Results reported above relate only to samples as submitted, unless specifically noted otherwise. Nelson Analytical, LLC is currently accredited by the New Hampshire Environmental Lab Accreditation Program, the Vermont Laboratory Accreditation Program, the Massachusetts Laboratory Certification Program and the Maine Laboratory Accreditation Program. For a list of current accredited tests, please visit the websites listed below. Sampling performed by the lab is according to the lab document "Water Sampling Instructions". EPA standards list pH & Chlorine as field parameters which should be tested immediately upon sample collection. Samples tested for pH after submission are beyond the hold time. Samples will be analyzed as quickly as laboratory operations allow. Metals samples may be analyzed the same day they are received. #-Sample(s) received at laboratory do not meet method specified temperature criteria.

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<http://des.nh.gov/organization/divisions/water/dwgb/nhlap/>
http://healthvermont.gov/enviro/ph_lab/PublicHealthLaboratory.aspx
<https://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml>
<https://www.mass.gov/certified-laboratories>

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NELSON ANALYTICAL LAB

12364-2098
 4/20/23 1015 4.0
 1-8
 RP230501109

Date Rec'd: _____ Time Rec'd: _____ Temp Rec'd: _____
 Rec'd by: mas Location: _____
 Cooler: Y Ice: N
 Chlorine Pos Neg MA
 Bottles: 40ml HCL 40ml MeOH 4oz. Glass
 1L Amber HCL MIN 250ml LC
 Other: _____

Turnaround Requirements		Project Information	
Please inquire about rush service. If we are able to meet your needs, we will not charge a rush fee. Please call for prior approval. Same day [] One Day [] Two Day [] Three Day [] Normal <input checked="" type="checkbox"/>		Project # <u>Tewksbury Long Pond</u> Project Name: _____ Town/Site: <u>Tewksbury MA</u> Sampler: <u>Andy Gaughan</u> Company: <u>Wester & Sampson</u> Project Manager: _____ Report to: <u>Andy Gaughan</u> Invoice to: " " Phone: <u>978-516-8169</u> E-Mail: <u>gaughan.andrew@wester.com</u>	
Detection Requirements Please specify any detection requirements: _____		Sample Matrix Key Please indicate the sample matrix in the sample matrix column by using the respective codes below: S Soil DW Drinking Water GW Groundwater WW Wastewater SW Surface Water O Oil X Other (specify): _____	
Receipt Conditions (Lab Use Only): Laboratory Supplied Containers? Yes No Containers Intact/Properly Labeled? Yes No Were samples delivered on ice? Yes No Brought directly from field? Yes No Sample storage requirements: ROOM TEMP / FREEZER / REFRIGERATOR		Project Requirements: Quote #: NH Odd Fund: Y / N MCP: Y / N Notes: _____	

Sample Information														
Sample ID	Collection Date/Time	Sample Matrix (see key)	# of Containers	E. coli	Coliform	Enterococcus	Ammonia	Total Phos	Surfactants	TSS	Nitrate/Nitrite	Turbidity	Dissolved O ₂	Laboratory ID
Inlet	4/20 4:30	SW	7	X	X	X	X	X	X	X	X	X	X	1-230501109
Outlet	4/20 9:04		7											
S1	4/20 4:40		7											
S2	4/20 8:50		7											
S3	4/20 9:14		7											
C1	4/20 10:40		7											
C2	4/20 10:15		7											
C3	4/20 11:25		7											

Relinquished by: <u>Andy Bern</u>	Date: <u>4/20</u>	Received by: <u>[Signature]</u>	Date: <u>4/20/23</u>	NOTES: E. coli / fecal are same bottle -NO ₂ , NO ₃ , TOB - same bottle -Total Phos / Ammonia same bottle FRM-NH-Environmental Sample Submission-01 09.05.2019
Relinquished by:	Date:	Received by:	Date: <u>1015</u>	
Relinquished by:	Date:	Received by:	Date:	

* Sample C3 preserved after receiving at lab for T-Phos + Ammonia. Air space in C1, C2, C3 bottles for D.O. MAR 4/20/23

Attachment C

