

**Brookfield**

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June 6, 2023

***VIA E-FILING***

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

**Subject: Rumford Falls Hydroelectric Project (FERC No. 2333-094)  
Trophic Sampling Memorandum**

Dear Secretary Bose:

Rumford Falls Hydro LLC (RFH), a subsidiary of Brookfield Renewable, provided information regarding the 2023 trophic sampling at the Rumford Falls Hydroelectric Project (FERC No. 2333) to the Maine Department of Environmental Protection on May 8, 2023. The document is attached for the Federal Energy Regulatory Commission's records.

Sincerely,

A handwritten signature in black ink, appearing to read 'L. Anderson', with a long horizontal flourish extending to the right.

Luke Anderson  
Manger, Licensing  
Brookfield Renewable

Attachment (1)

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**From:** Anderson, Luke <Luke.Anderson@brookfieldrenewable.com>  
**Sent:** Monday, May 8, 2023 9:42 AM  
**To:** Olcott, Kyle  
**Subject:** Rumford Falls Hydro - FERC Project No. 2333; Follow up Trophic Sampling  
**Attachments:** 20230505\_RFH to MDEP\_Rumford Falls Trophic Sampling Memo (FINAL).pdf

Good Morning Kyle,

Please find attached a memorandum prepared by Normandeau Associates on behalf of Rumford Falls Hydro as it pertains to the results of limited follow up sampling related to laboratory detection limits for three parameters evaluated as part of the trophic state at the Rumford Falls Hydroelectric Project.

(As previously discussed, the MDEP Sampling Protocol for Hydropower Studies (MDEP 2019) provides minimum reporting or laboratory detection limits for the suite of water quality parameters considered as part of the trophic state study. The laboratory did not meet the MDEP laboratory detection or reporting limits during the 2020 study for Total phosphorus, Nitrate and Aluminum. As summarized on the attached, RFH consulted with MDEP and based on that consultation RFH collected these parameters again in 2022. Although Secchi disk transparency and chlorophyll a met the MDEP specified detection limits, sampling for these parameters was also conducted in 2022).

This memorandum is a follow up to the October 29, 2021 memo to the MDEP and MDEPs response November 1, 2021 (included with the attached). The additional sampling and testing to provide the required laboratory reporting limits is also noted in the August 5, 2022 Updated Study Report and the September 29, 2022 Final License Application.

Please let us know if you have any questions or require additional information.

Thank you,

**Luke T. Anderson**  
Manager, Licensing

**Brookfield Renewable**

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# Memo

Date: Friday, May 05, 2023

To: Kyle Olcott (MDEP)

From: Drew Trested (Normandeau Associates)

Cc: Luke Anderson (Rumford Falls Hydro LLC)

Subject: Rumford Falls Rumford Falls Hydroelectric Project (FERC No. 2333);  
Additional Sampling for Trophic Status Determination

As a follow up to the October 29, 2021 memo sent on behalf of Rumford Falls Hydro LLC (RFH) to the Maine Department of Environmental Protection (MDEP) regarding the 2023 trophic sampling at the Rumford Falls Hydroelectric Project (Project) (Attachment 1), RFH is providing the following information.

## Introduction

In 2020, RFH conducted a Water Quality Study at the Project, which consisted of the four following components:

1. An Impoundment Trophic State Study;
2. Continuous water temperature and dissolved oxygen (DO) monitoring;
3. A Benthic Macroinvertebrate Study; and
4. An Outlet Stream Aquatic Habitat Study.

The Water Quality Study Report was provided in the Initial Study Report (ISR), which was filed with the Federal Energy Regulatory Commission (FERC) on August 6, 2021. With regards to the Impoundment Trophic State Study, the ISR identified three variances from the methodology provided in the Revised Study Plan (RSP). The MDEP Sampling Protocol for Hydropower Studies (MDEP 2019) provides minimum reporting or laboratory detection limits for the suite of water quality parameters considered as part of the trophic state study. The following parameters did not meet the MDEP laboratory detection or reporting limits during the 2020 study:

1. Total phosphorus: MDEP detection limit for total phosphorus is 0.001 mg/L. The laboratory used U.S. Environmental Protection Agency (USEPA) method 365.4 with a standard reporting limit of 0.1 mg/L.
2. Nitrate: MDEP detection limit for nitrate is 0.010 mg/L. The laboratory used USEPA method 353.2 with a standard reporting limiting of 0.050 mg/L. Nitrate was analyzed during a single sampling event during this study per MDEP protocol.

3. Aluminum: MDEP detection limit for total and dissolved aluminum is 0.010 mg/L. The laboratory used USEPA method SW-846 with a standard reporting limit of 0.30 mg/L. Total and dissolved aluminum were analyzed during a single sampling event during this study per MDEP protocol.

RFH consulted with MDEP on the three ISR variances related to the Trophic State Study on September 10, 2021 (Attachment 1). Based on that consultation with the MDEP, RFH collected these parameters again in 2022. Although Secchi disk transparency and chlorophyll *a* met the MDEP specified detection limits, sampling for these parameters also occurred again in 2022, which with the 2022 total phosphorus data, were used to determine the trophic status of the Upper Dam and Middle Dam impoundments.

### Methodology

Identical to the 2020 study, trophic sampling in the Upper Dam and Middle Dam impoundments was conducted in accordance with the MDEP Sampling Protocol for Hydropower Studies (MDEP 2019). Sampling personnel who had originally received certification from MDEP on June 4, 2020, to collect water quality data during the 2020 sampling period were reconfirmed for field data collection during the 2022 effort. The 2022 sampling used the same sites within the Upper Dam and Middle Dam impoundments that were used during the 2020 field season (Figure 1).

In 2022, sampling for total phosphorus and chlorophyll *a* occurred twice monthly over five consecutive months (June through October) in the Upper Dam and Middle Dam impoundments. On each field date, samples were collected from both the Upper Dam and Middle Dam impoundments. The only exception was the second sampling event during October. Although a sample was obtained from the Upper Dam impoundment, sample collection could not be conducted within the Middle Dam impoundment on October 25, 2022 due to high flows preventing safe access. After notifying the MDEP, a tenth (and final) trophic sample was collected from the Middle Dam impoundment on November 8, 2022.

The sampling parameters, methods, and detection limits for the 2022 trophic state study are presented in Table 1. Secchi disk transparency was measured using a Secchi disk and viewscope. The Secchi disk was lowered on the shaded side of the boat while looking through the viewscope until the disk disappeared from view. The disk was then slowly raised until the white portion of the disk was just visible, and the depth noted from premeasured markers on the suspending line. A minimum of two readings were obtained and averaged to determine the Secchi disk depth.

Prior to sample collection, a vertical temperature profile was collected by lowering a portable, handheld multiparameter YSI ProDSS meter to the desired depth, allowing the instrument to stabilize, and recording the water quality readings on a field data sheet<sup>1</sup>. Measurements were taken

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<sup>1</sup> YSI ProDSS Handheld Meter Specifications: Range = -5 °C +70 °C, accuracy ± 0.2 °C, resolution 0.1 °C

from just below the water surface (0.1 meter) and then at 1-meter intervals to 0.5 meter from the bottom depth. An integrated core method was used to collect laboratory water samples for analysis of total phosphorus and chlorophyll *a*. A weighted tube was lowered to the desired water depth, the open end of the tube at the water surface was sealed (i.e., crimped), and the water core was extracted and transferred to a sample container. Since thermal stratification did not occur in either impoundment, the integrated core sampler was extended to twice the Secchi disk depth, 1 meter from the bottom or 10 meters, whichever was less.

An additional laboratory sample was collected from each impoundment sample site in late summer on August 26 using this same method and analyzed for nitrate and total and dissolved aluminum.

All samples taken to the laboratory for analysis were collected and preserved in accordance with MDEP and laboratory requirements. The Maine Health and Environmental Testing Laboratory in Augusta, Maine conducted all laboratory analyses.

## Results

### ***Impoundment Water Temperature Profile Data***

The vertical water temperature profile data are presented for the Upper Dam impoundment in Table 2 and Figure 2 and for the Middle Dam impoundment in Table 3 and Figure 3. Water temperatures were comparable between the Upper and Middle Dam impoundments and increased from the beginning of the study in June reaching a peak temperature of 24.9°C at the Upper Dam impoundment and 24.8°C at the Middle Dam impoundment on July 26, then decreased through the end of the study reaching a minimum temperature of 9.9°C on October 25 at the Upper Dam impoundment. Water temperatures were generally uniform throughout the water columns of both impoundments and varied by less than 1°C per 1 meter; therefore, there was no evidence of thermal stratification during this study in either impoundment.

### ***Water Quality Sampling***

Lake trophic state is determined primarily by three indicators: chlorophyll *a*, Secchi disk depth, and total phosphorus which were analyzed in water quality samples. Laboratory results for this sampling effort are presented in Table 4 and Table 5 and the laboratory reports are included as Attachment 2. Minimum, maximum, average (mean), and median values are presented for the laboratory results.

#### ***Chlorophyll *a****

Chlorophyll *a* is a photosynthetic pigment that is analyzed in water quality samples as an indicator of algal biomass and lake trophic state (MDEP 2016). All samples collected during this study were analyzed for chlorophyll *a* and compared to the categories for trophic status as specified by MDEP. Chlorophyll *a* ranged from 0.001 to 0.004 mg/L in the Upper Dam impoundment with an average concentration of 0.002 mg/L. In the Middle Dam impoundment, chlorophyll *a* ranged from 0.002 to 0.003 mg/L, with an average concentration of 0.002 mg/L. MDEP defines oligotrophic waters

as having chlorophyll *a* concentration of less than 0.0015 mg/L and mesotrophic waters as having chlorophyll *a* concentration of 0.0015 to 0.007 mg/L (MDEP 2016). The samples collected during this study were for the most part in the mesotrophic range for chlorophyll *a*.

### ***Total Phosphorus***

Phosphorus is typically the primary limiting nutrient in freshwater systems, and excess amounts of phosphorus can lead to water quality degradation and eutrophication (Carpenter 2005). Total phosphorus concentrations tend to be very low in freshwater lakes in Maine and concentrations greater than 0.020 mg/L are considered to be eutrophic (MDEP 2016). In all cases, phosphorus was detected above the laboratory reporting limit, but remained at or below 0.020 mg/L with a single exception; on August 26, 2022 the phosphorus result in the Middle Dam impoundment was 0.022 mg/L.

### ***Secchi Disk***

Secchi disk transparency (SDT) is a measure of water clarity or opacity that is used as an indicator of algal biomass and trophic state (MDEP 2016). SDT ranged from 2.1 to 4.6 meters in the Upper Dam impoundment, with an average of 3.4 meters. In the Middle Dam impoundment, SDT ranged from 2.3 to 4.1 m, with an average value of 3.2 m. MDEP considers those waters with a SDT of 4 to 8 meters as mesotrophic and a SDT of less than 4 meters as eutrophic. The SDT values obtained in the Upper and Middle Dam impoundments were characteristic of eutrophic and mesotrophic waters.

### ***Trophic State***

Lake trophic status is determined by evaluating a number of indicators, including chlorophyll *a*, SDT, and total phosphorus (MDEP 2016). The Maine Trophic State Indices (TSI) (MDEP 1996) were calculated from the mean chlorophyll *a* data, mean total phosphorus data, and the mean SDT data as:

$$\text{Chlorophyll } a \text{ TSI} = 70 * \log (\text{mean chlorophyll } a + 0.7);$$

$$\text{Phosphorus TSI} = 70 * \log (0.33 \text{ mean total phosphorus} + 0.7); \text{ and}$$

$$\text{SDT TSI} = 70 * \log (105 + 0.7) / \text{mean SDT}$$

At the Upper Dam impoundment, the chlorophyll *a* TSI was 30, the phosphorus TSI was 49 and the SDT TSI was 42. At the Middle Dam impoundment, the chlorophyll *a* TSI was 30, the phosphorus TSI was 49 and the SDT TSI was 44. The TSI values calculated for both dams were in the mesotrophic range of 25 to 60 (MDEP 2016). The chlorophyll *a*, total phosphorus, and SDT data collected during this study generally support a determination of mesotrophic status in both the Upper and Middle Dam impoundments based on the MDEP numerical guidelines.

### ***Late Summer Sampling***

During the sampling event on August 26, 2022, consistent with MDEP protocol, additional samples were collected from the Upper and Middle Dam impoundments and submitted for laboratory analysis of two additional parameters (aluminum and nitrate) as presented in Table 6. Although there is currently a state surface water quality standard for aluminum as a non-priority pollutant (i.e., maximum standard = 0.750 mg/L; continuous standard = 0.087 mg/L), a state surface water quality standard does not exist for nitrate. The reported level for aluminum from the Upper Dam and Middle Dam impoundments was 0.15 mg/L, which exceeded the continuous standard but was well below the maximum standard. As measured during the August 26, 2022 sampling event, the nitrate level for the Upper Dam and Middle Dam impoundments was 0.04 mg/L.

### Summary

Trophic state sampling conducted within the Upper Dam impoundment and Middle Dam impoundment during 2022 completes the Water Quality Study conducted by RFH during 2020. Sampling was conducted following the methodology identified in the RFP and in consultation with the MDEP (see Attachment 1). All water quality tests were conducted by the Maine Health and Environmental Testing Laboratory. Collection of Secchi disk, phosphorus and chlorophyll *a* samples support a determination of mesotrophic status in both the Upper and Middle Dam impoundments based on the MDEP numerical guidelines. Late summer sampling confirmed that readings for aluminum were below the state water quality maximum standard.

### References

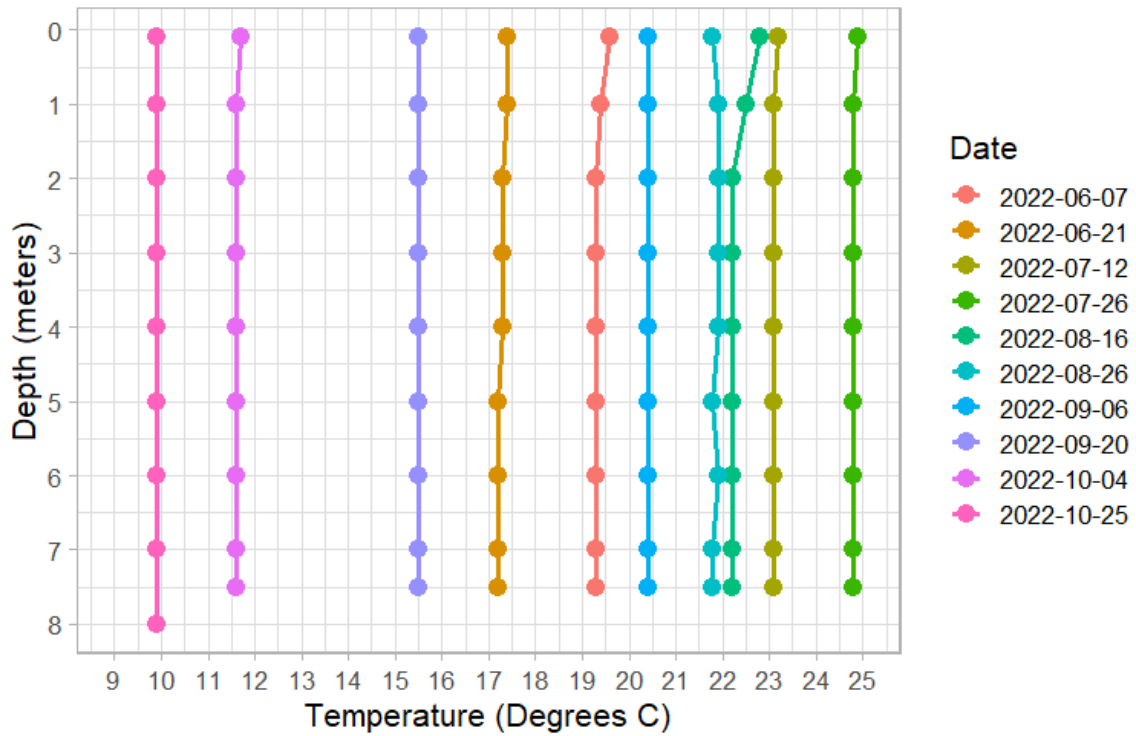
- Carpenter, S.R. 2005. Eutrophication of aquatic ecosystems: Biostability and soil phosphorus. *Proceedings of the National Academy of Sciences of the United States of America*. 102 (29): 1002-5. July 2005.
- Maine Department of Environmental Protection (MDEP). 1996. 06-096 Chapter 581 Regulations Relating to Water Quality Evaluations. May 4, 1996. Accessed Jul 14, 2021 from <http://www.maine.gov/dep/water/wd/general.html>.
- Maine Department of Environmental Protection (MDEP). 2016. 2016 Integrated Water Quality Monitoring and Assessment Report. Final 2/28/2018.
- Maine Department of Environmental Protection (MDEP). 2019. DEP Sampling Protocol for Hydropower Studies. September 2019.



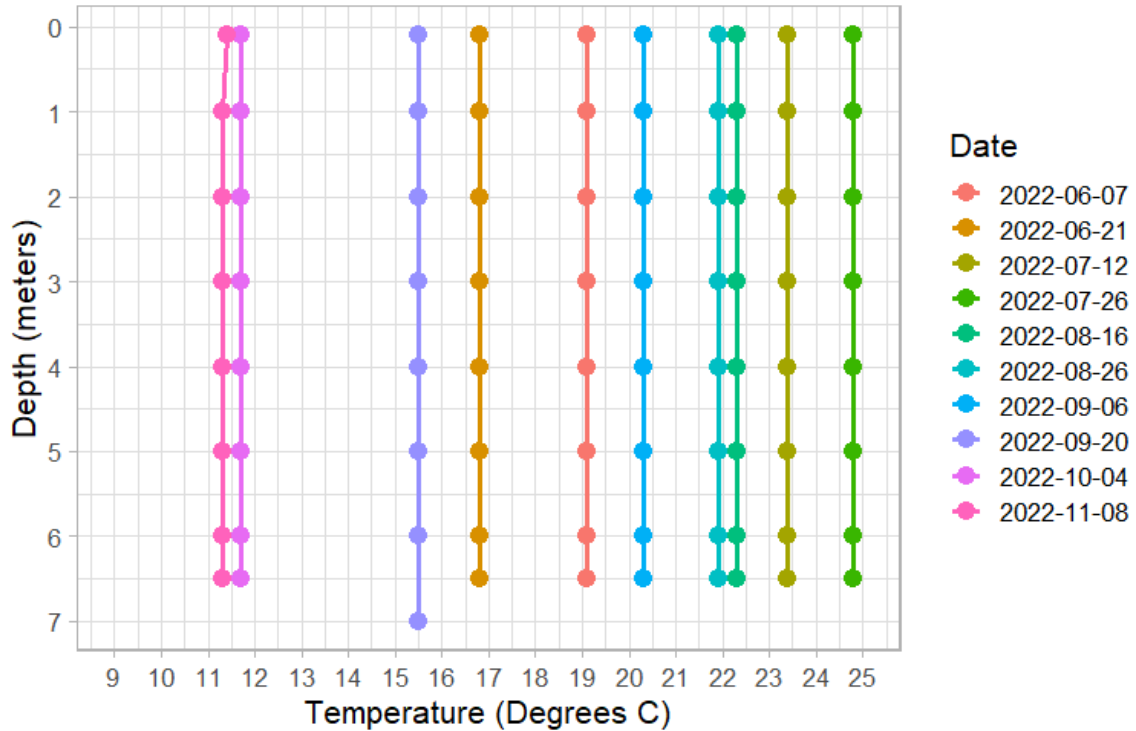
**Figure 1**  
**LOCATION OF UPPER AND MIDDLE DAM IMPOUNDMENT TROPHIC STATE SAMPLING STATIONS**



**Figure 2**  
**WATER TEMPERATURE PROFILES AT THE UPPER DAM IMPOUNDMENT**



**Figure 3**  
**WATER TEMPERATURE PROFILES AT THE MIDDLE DAM IMPOUNDMENT**



**Table 1**  
**TROPHIC STATE STUDY SAMPLING PARAMETERS, METHODS, AND**  
**DETECTION LIMITS**

<b>Parameter</b>	<b>Sampling Method</b>	<b>Detection Limit</b>
Secchi disk transparency	Water Scope	0.1 meter
Temperature	Profile	0.1°C
Total Phosphorus	Integrated Core	0.002 mg/L <sup>1</sup>
Chlorophyll <i>a</i>	Integrated Core	0.001 mg/L
Nitrate	Integrated Core	0.01 mg/L
Aluminum	Integrated Core	0.010 mg/L

<sup>1</sup>The Maine Health and Environmental Testing Laboratory in Augusta, Maine detection limit for total phosphorus was 0.002 mg/L. The laboratory detection limit specified for total phosphorus in the DEP Sampling Protocol for Hydropower Studies (MDEP 2019) is 0.001 mg/L.

**Table 2**  
**WATER QUALITY PROFILES AT THE UPPER DAM IMPOUNDMENT**

Depth (m)	Temp (°C)	Depth (m)	Temp (°C)	Depth (m)	Temp (°C)	Depth (m)	Temp (°C)
<b>6/7/2022</b>		<b>6/21/2022</b>		<b>7/12/2022</b>		<b>7/26/2022</b>	
0.1	19.6	0.1	17.4	0.1	23.2	0.1	24.9
1	19.4	1	17.4	1	23.1	1	24.8
2	19.3	2	17.3	2	23.1	2	24.8
3	19.3	3	17.3	3	23.1	3	24.8
4	19.3	4	17.3	4	23.1	4	24.8
5	19.3	5	17.2	5	23.1	5	24.8
6	19.3	6	17.2	6	23.1	6	24.8
7	19.3	7	17.2	7	23.1	7	24.8
7.5	19.3	7.5	17.2	7.5	23.1	7.5	24.8
Max	19.6	Max	17.4	Max	23.2	Max	24.9
Min	19.3	Min	17.2	Min	23.1	Min	24.8
<b>8/16/2022</b>		<b>8/26/2022</b>		<b>9/6/2022</b>		<b>9/20/2022</b>	
0.1	22.8	0.1	21.8	0.1	20.4	0.1	15.5
1	22.5	1	21.9	1	20.4	1	15.5
2	22.2	2	21.9	2	20.4	2	15.5
3	22.2	3	21.9	3	20.4	3	15.5
4	22.2	4	21.9	4	20.4	4	15.5
5	22.2	5	21.8	5	20.4	5	15.5
6	22.2	6	21.9	6	20.4	6	15.5
7	22.2	7	21.8	7	20.4	7	15.5
7.5	22.2	7.5	21.8	7.5	20.4	7.5	15.5
Max	22.8	Max	21.9	Max	20.4	Max	15.5
Min	22.2	Min	21.8	Min	20.4	Min	15.5
<b>10/4/2022</b>		<b>10/25/2022</b>					
0.1	11.7	0.1	9.9				
1	11.6	1	9.9				
2	11.6	2	9.9				
3	11.6	3	9.9				
4	11.6	4	9.9				
5	11.6	5	9.9				
6	11.6	6	9.9				
7	11.6	7	9.9				
7.5	11.6	8	9.9				
Max	11.7	Max	9.9				
Min	11.6	Min	9.9				

**Table 3**  
**WATER QUALITY PROFILES AT THE MIDDLE DAM IMPOUNDMENT**

Depth (m)	Temp (°C)	Depth (m)	Temp (°C)	Depth (m)	Temp (°C)	Depth (m)	Temp (°C)
<b>6/7/2022</b>		<b>6/21/2022</b>		<b>7/12/2022</b>		<b>7/26/2022</b>	
0.1	19.1	0.1	16.8	0.1	23.4	0.1	24.8
1	19.1	1	16.8	1	23.4	1	24.8
2	19.1	2	16.8	2	23.4	2	24.8
3	19.1	3	16.8	3	23.4	3	24.8
4	19.1	4	16.8	4	23.4	4	24.8
5	19.1	5	16.8	5	23.4	5	24.8
6	19.1	6	16.8	6	23.4	6	24.8
6.5	19.1	6.5	16.8	6.5	23.4	6.5	24.8
Max	19.1	Max	16.8	Max	23.4	Max	24.8
Min	19.1	Min	16.8	Min	23.4	Min	24.8
<b>8/16/2022</b>		<b>8/26/2022</b>		<b>9/6/2022</b>		<b>9/20/2022</b>	
0.1	22.3	0.1	21.9	0.1	20.3	0.1	15.5
1	22.3	1	21.9	1	20.3	1	15.5
2	22.3	2	21.9	2	20.3	2	15.5
3	22.3	3	21.9	3	20.3	3	15.5
4	22.3	4	21.9	4	20.3	4	15.5
5	22.3	5	21.9	5	20.3	5	15.5
6	22.3	6	21.9	6	20.3	6	15.5
6.5	22.3	6.5	21.9	6.5	20.3	7	15.5
Max	22.3	Max	21.9	Max	20.3	Max	15.5
Min	22.3	Min	21.9	Min	20.3	Min	15.5
<b>10/4/2022</b>		<b>11/8/2022</b>					
0.1	11.7	0.1	11.4				
1	11.7	1	11.3				
2	11.7	2	11.3				
3	11.7	3	11.3				
4	11.7	4	11.3				
5	11.7	5	11.3				
6	11.7	6	11.3				
6.5	11.7	6.5	11.3				
Max	11.7	Max	11.4				
Min	11.7	Min	11.3				

**Table 4**  
**EPILIMNETIC CORE SAMPLE RESULTS – UPPER DAM IMPOUNDMENT**

Date	Sample Time	Chlorophyll <i>a</i>	Total Phosphorus	Secchi Disk Depth
		mg/L	mg/L	m
6/7/2022	10:10	0.002	0.013	2.9
6/21/2022	10:55	0.003	0.011	2.9
7/12/2022	10:00	0.004 <sup>1</sup>	0.011	2.7
7/26/2022	9:35	0.003	0.012	4.6
8/16/2022	10:00	0.002	0.020	4.0
8/26/2022	9:40	0.002	0.019	2.1
9/6/2022	10:10	0.002	0.011 <sup>2</sup>	4.6
9/20/2022	10:05	0.002	0.010	4.6
10/4/2022	9:50	0.001	0.010	3.0
10/25/2022	8:40	0.002	0.013	3.0
Average		0.002	0.013	3.4
Median		0.002	0.012	3.0
Minimum		0.001	0.010	2.1
Maximum		0.004	0.020	4.6

<sup>1</sup>Maine Health and Environmental Testing Laboratory did not meet their criteria for acceptance ( $\pm 20\%$  of the true value) during one of the three QC checks associated with sample and did not make that determination until sample was outside of hold time. Sample result qualified as “approximate”.

<sup>2</sup>Maine Health and Environmental Testing Laboratory did not meet hold time criteria for sample analysis due to a limitation of required reagent. Sample was evaluated three hours after expiration of the 28-day hold time.

**Table 5**  
**EPILIMNETIC CORE SAMPLE RESULTS – MIDDLE DAM IMPOUNDMENT**

Date	Sample Time	Chlorophyll <i>a</i>	Total Phosphorus	Secchi Disk Depth
		mg/L	mg/L	m
6/7/2022	8:50	0.002	0.012	2.9
6/21/2022	8:55	0.002	0.013	2.3
7/12/2022	8:45	0.003 <sup>1</sup>	0.011	2.7
7/26/2022	8:30	0.003	0.017	4.0
8/16/2022	8:50	0.002	0.013	3.7
8/26/2022	8:30	0.002	0.022	2.3
9/6/2022	9:00	0.002	0.011 <sup>2</sup>	4.1
9/20/2022	8:45	0.002	0.012	4.0
10/4/2022	8:45	0.002	0.010	2.7
11/8/2022	8:45	0.002	0.012	2.9
Average		0.002	0.013	3.2
Median		0.002	0.012	2.9
Minimum		0.002	0.010	2.3
Maximum		0.003	0.022	4.1

<sup>1</sup>Maine Health and Environmental Testing Laboratory did not meet their criteria for acceptance ( $\pm 20\%$  of the true value) during one of the three QC checks associated with sample and did not make that determination until sample was outside of hold time. Sample result qualified as “approximate”.

<sup>2</sup>Maine Health and Environmental Testing Laboratory did not meet hold time criteria for sample analysis due to a limitation of required reagent. Sample was evaluated three hours after expiration of the 28-day hold time.

**Table 6**  
**LATE SUMMER (AUGUST 26, 2022) ADDITIONAL SAMPLING RESULTS**

Parameter	Units	Middle Dam Impoundment	Upper Dam Impoundment
Aluminum	mg/L	0.15	0.15
Nitrate	mg/L	0.04	0.04

**Attachment 1**

**SUMMARY OF TROPHIC STATE STUDY CONSULATION WITH THE MDEP**



**From:** Drew Trested <dtrested@normandeau.com>  
**Sent:** Friday, October 29, 2021 3:49 PM  
**To:** Kathy Howatt (Kathy.howatt@maine.gov) (Kathy.howatt@maine.gov) <Kathy.howatt@maine.gov>  
**Cc:** Anderson, Luke <luke.anderson@brookfieldrenewable.com>; Cousens, Dawn <Dawn.Cousens@hdrinc.com>; Browne, Peter <Peter.Browne@hdrinc.com>  
**Subject:** Rumford Falls - Trophic resampling memo

**CAUTION: [EXTERNAL]** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Kathy –

As a follow up to our September 10<sup>th</sup> call related to resampling for trophic status at the Rumford Upper and Middle Dam Impoundments please see the attached memo. We have identified the parameters in need of additional sampling and will follow field methodology detailed in the approved Revised Study Plan. Please let me know if you have any questions.

Have a great weekend,  
Drew

Drew Trested, PhD  
*Senior Principal Scientist, Fisheries Biologist*  
**Normandeau Associates, Inc.**  
30 International Drive, Portsmouth, NH 03801  
603-319-5310 (direct) 603-973-3179 (cell)



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# Memo

Date: Friday, October 29, 2021

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To: Kathy Howatt (MDEP)

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From: Peter Browne (HDR) & Drew Trested (Normandeau Associates)

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Cc: Luke Anderson (Rumford Falls Hydro LLC)

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Subject: Rumford Falls Hydroelectric Project (FERC No. 2333); Additional Sampling for Trophic Status Determination

On August 6, 2021, Rumford Falls Hydro LLC (RFH) submitted their Initial Study Report (ISR) for the Rumford Falls Hydroelectric Project (FERC No. 2333) (Project). The results of the Water Quality Study, which was conducted from June through October 2020 were summarized in the ISR. In addition, a limited variance from the FERC-approved Water Quality Study Plan was identified during the review of the laboratory results and was summarized in the ISR as follows:

*“MDEP’s DEP Sampling Protocol for Hydropower Studies (MDEP 2019) provides minimum reporting or laboratory detection limits for the suite of water quality parameters considered as part of the trophic state study. The following parameters did not meet the desired MDEP laboratory detection or reporting limit:*

- *Total phosphorus: MDEP detection limit for total phosphorus is 0.001 mg/L. The laboratory used USEPA method 365.4 with a standard reporting limit of 0.1 mg/L. RFH has discussed this with MDEP and will continue to consult with the Department on this matter.*
- *Nitrate: MDEP detection limit for nitrate is 0.010 mg/L. The laboratory used EPA method 353.2 with a standard reporting limit of 0.050 mg/L. Nitrate was only analyzed during a single sampling event during this study per MDEP protocol. However, RFH will consult with MDEP on this matter.*
- *Aluminum: MDEP detection limit for total and dissolved aluminum is 0.010 mg/L. The laboratory used EPA method SW-846 with a standard reporting limit of 0.30 mg/L. Total and dissolved aluminum were only analyzed during a single sampling event during this study per MDEP protocol. However, RFH will consult with MDEP on this matter.”*

On September 10, 2021 Mr. Luke Anderson (RFH) and Mr. Drew Trested (Normandeau Associates) held a conference call with Ms. Kathy Howatt (Maine Department of Environmental Protection [MDEP or Department]) to discuss the reporting limits of the 2020 total phosphorus, nitrate, and aluminum data. During the discussion, Ms. Howatt indicated that RFH should repeat

sampling within the Upper and Middle Dam impoundments at the Project for the following parameters:

- Total phosphorus, chlorophyll a, and Secchi disk transparency – collect twice monthly from June through October, and
- Nitrate and aluminum – collect once in August.

RFH will implement the additional sampling in 2022 for these specific water quality parameters at the same sites within the Upper and Middle Dam impoundments<sup>1</sup> sampled during the 2020 Water Quality Study. No additional laboratory samples will be collected.

The field collection methodologies for each parameter will be consistent with those identified in the FERC-approved Revised Study Plan<sup>2</sup>. Samples will be analyzed by the Maine State Health and Environmental Testing Laboratory in Augusta, Maine. Prior to submittal of any samples, Normandeau will confirm the laboratory test methods and reporting levels will meet MDEP requirements for each parameter:

- Total Phosphorus – 0.001 mg/L
- Chlorophyll-a – 0.001 mg/L
- Aluminum – 0.010 mg/L
- Nitrate – 0.01 mg/L

Total phosphorus, chlorophyll a, and Secchi disk transparency data will be used to determine the trophic state of the Upper and Middle Dam impoundments. Aluminum data will be compared to state numeric criterion.

Ms. Howatt indicated that the proposed resampling and adherence to MDEP required reporting limits for the four identified water quality parameters would provide the water quality information needed by the Department. Ms. Howatt confirmed via September 13, 2021 email that field staff trained by the Department for the additional sampling for the trophic status determination prior to the 2020 sample collections would not be required to retrain prior to sample collection in 2022.

---

<sup>1</sup> Upper Dam Impoundment location: Latitude: 44°32'2.40"N Longitude: 70°32'33.48"W; Middle Dam Impoundment location: Latitude: 44°32'30.60"N Longitude: 70°32'47.18"W

<sup>2</sup> Filed with FERC on July 7, 2020.

**From:** Howatt, Kathy [<mailto:Kathy.Howatt@maine.gov>]  
**Sent:** Monday, November 1, 2021 7:46 AM  
**To:** Drew Trested <[dtrested@normandeau.com](mailto:dtrested@normandeau.com)>  
**Cc:** Anderson, Luke ([Luke.Anderson@brookfieldrenewable.com](mailto:Luke.Anderson@brookfieldrenewable.com))  
<[Luke.Anderson@brookfieldrenewable.com](mailto:Luke.Anderson@brookfieldrenewable.com)>  
**Subject:** External: RE: Rumford Falls - Trophic resampling memo

Thank you Drew, the plan sounds good for collecting the necessary data to demonstrate any impact from project operations on the resource. Appreciate the extra effort you all have made on this project.

Kathy

Kathy Davis Howatt  
Hydropower Coordinator, Bureau of Land Resources  
Maine Department of Environmental Protection  
Phone: 207-446-2642  
[www.maine.gov/dep](http://www.maine.gov/dep)

*Correspondence to and from this office is considered a public record and may be subject to a request under the Maine Freedom of Access Act. Information that you wish to keep confidential should not be included in email correspondence.*

**Attachment 2**

**LABORATORY ANALYTICAL REPORTS**



Department of Health and Human Services  
Health and Environmental Testing Laboratory

221 State Street  
#12 State House Station  
Augusta, ME 04333-0012  
Phone: (207)287-2727 Fax: (207)287-6832  
TTY: 1-800-606-0215  
EPA ID: ME00002

TYLER PARENT  
NORMANDEAU ASSOCIATES, INC.  
25 NASHUA RD  
BEDFORD NH 03110

Logged: 6/7/2022 12:43:03PM

Folder #: 2209244

Office Use Only: Line Item MNA1 Private
--

Project Name: RUMFORD WQ  
No. of Samples in Folder:(2)

Released: 7/18/2022

2209244-01  
2209244-02

## CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Edward J. Adams  
Chemist III

Continued from Previous Page

<b>Lab Sample#:</b> 2209244-01	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>					<b>Surface:</b>			
<b>Description:</b> UPPER-IMPOUNDMENT-6-7-22	<b>Sample Date:</b> 06/07/2022			<b>Sample Time:</b> 10:10:00					
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			06/27/2022 15:31:00	A.B.
Phosphorus, Total (L-10-115-01-1-F)	13	ug/L			2			06/16/2022 10:31:28	M.C.

<b>Lab Sample#:</b> 2209244-02	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>					<b>Surface:</b>			
<b>Description:</b> MIDDLE-IMPOUNDMENT-6-7-22	<b>Sample Date:</b> 06/07/2022			<b>Sample Time:</b> 08:50:00					
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			06/27/2022 15:31:00	A.B.
Phosphorus, Total (L-10-115-01-1-F)	12	ug/L			2			06/16/2022 10:32:36	M.C.

## Units & Measurement

"mg/L" = Milligrams per liter;

"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

"ug/Kg" = Micrograms per Kilogram;

"NTU" = Nephelometric Turbidity Units;

"pCi/L" = Picocuries per Liter;

The MCL, Maximum Contaminant Level is listed for comparing your results with recommended levels.

In the "Qualifier" column, an " \*\* " is placed to indicate any results that exceed this MCL.

**If there are no " \* " in the "Qualifier" column, your result is considered satisfactory for those tests.**

All solid results are reported on a "Dry Weight" basis.

Blanks are analyzed, but sample results are not blank corrected.

RL-Reporting Limit is the lowest concentration which can be reliably reported on a routine basis.

"<" = Less than      ">" = Greater than

MCL - Maximum Contaminant Level is the highest level allowed by EPA for public water supplies. Also used here as the maximum advisory limit set by the Maine Centers for Disease Control and Prevention.

**Note: Results below the advisory limit, including < and J are considered satisfactory for that parameter.**

Results are from the samples as received.

## Disclaimer

**Your report consists of the number of pages listed on the cover page. Any attachments after the last numbered page are for informational purposes only and are not part of the formal report.**

**The results in this report are for the submitted sample(s) only.**

**This report shall not be reproduced, except in full, without written permission from the Maine Health and Environmental Testing Laboratory.**

### Qualifiers Legend:

#### User selectable

Code	Description
*	> Secondary Limit
**	> MCL
~	Approximately
Ach	Above Calibration Curve
B	Blank Contamination
Fl	Fluoride result is between 2 and 4 ppm
Hi	
J	<RL>MDL
Lo	
Nan	Not Analyzed
Nc	Not Confirmed
Nt	NonTarget Compound
R	Rejected
Rec	Recovery
T	Temperature does not meet criteria
U	Undetected





Department of Health and Human Services  
Health and Environmental Testing Laboratory

221 State Street  
#12 State House Station  
Augusta, ME 04333-0012  
Phone: (207)287-2727 Fax: (207)287-6832  
TTY: 1-800-606-0215  
EPA ID: ME00002

TYLER PARENT  
NORMANDEAU ASSOCIATES, INC.  
25 NASHUA RD  
BEDFORD NH 03110

Logged: 6/21/2022 1:29:04PM

Folder #: 2209792

Office Use Only: Line Item MNA1 Private
--

Released: 9/27/2022

No. of Samples in Folder:(4)

2209792-01  
2209792-02  
2209792-03  
2209792-04

### CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Edward J. Adams  
Chemist III

Continued from Previous Page

<b>Lab Sample#:</b> 2209792-01	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H20	<b>Sample Point:</b>				<b>Surface:</b>				
<b>Description:</b> MIDDLE-IMPOUNDMENT-6-21-22	<b>Sample Date:</b> 06/21/2022		<b>Sample Time:</b> 08:55:00						
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			07/18/2022 14:22:00	K.M.

<b>Lab Sample#:</b> 2209792-02	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H20	<b>Sample Point:</b>				<b>Surface:</b>				
<b>Description:</b> MIDDLE-IMPOUNDMENT-6-21-22	<b>Sample Date:</b> 06/21/2022		<b>Sample Time:</b> 08:55:00						
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Phosphorus, Total (L-10-115-01-1-F)	13	ug/L			2			06/29/2022 11:21:20	M.C.

<b>Lab Sample#:</b> 2209792-03	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H20	<b>Sample Point:</b>				<b>Surface:</b>				
<b>Description:</b> UPPER-IMPOUNDMENT-6-21-22	<b>Sample Date:</b> 06/21/2022		<b>Sample Time:</b> 10:55:00						
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Chlorophyll A (10200 H)	0.003	mg/L			0.001			07/18/2022 14:22:00	K.M.

<b>Lab Sample#:</b> 2209792-04	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H20	<b>Sample Point:</b>				<b>Surface:</b>				
<b>Description:</b> UPPER-IMPOUNDMENT-6-21-22	<b>Sample Date:</b> 06/21/2022		<b>Sample Time:</b> 10:55:00						
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Phosphorus, Total (L-10-115-01-1-F)	11	ug/L			2			06/29/2022 11:22:28	M.C.

## Units & Measurement

"mg/L" = Milligrams per liter;

"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

"ug/Kg" = Micrograms per Kilogram;

"NTU" = Nephelometric Turbidity Units;

"pCi/L" = Picocuries per Liter;

The MCL, Maximum Contaminant Level is listed for comparing your results with recommended levels.

In the "Qualifier" column, an " \*\* " is placed to indicate any results that exceed this MCL.

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Blanks are analyzed, but sample results are not blank corrected.

RL-Reporting Limit is the lowest concentration which can be reliably reported on a routine basis.

"<" = Less than      ">" = Greater than

MCL - Maximum Contaminant Level is the highest level allowed by EPA for public water supplies. Also used here as the maximum advisory limit set by the Maine Centers for Disease Control and Prevention.

**Note: Results below the advisory limit, including < and J are considered satisfactory for that parameter.**

Results are from the samples as received.

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### Qualifiers Legend:

#### User selectable

Code	Description
*	> Secondary Limit
**	> MCL
~	Approximately
Ach	Above Calibration Curve
B	Blank Contamination
Fl	Fluoride result is between 2 and 4 ppm
Hi	
J	<RL>MDL
Lo	
Nan	Not Analyzed
Nc	Not Confirmed
Nt	NonTarget Compound
R	Rejected
Rec	Recovery
T	Temperature does not meet criteria
U	Undetected



Department of Health and Human Services  
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#12 State House Station  
Augusta, ME 04333-0012  
Phone: (207)287-2727 Fax: (207)287-6832  
TTY: 1-800-606-0215  
EPA ID: ME00002

TYLER PARENT  
NORMANDEAU ASSOCIATES, INC.  
25 NASHUA RD  
BEDFORD NH 03110

Logged: 7/12/2022 12:08:50PM

Folder #: 2211872

Office Use Only: Line Item MNA1 Private
--

Project Name: RUMFORD WQ  
No. of Samples in Folder:(2)

Released: 9/27/2022

2211872-01  
2211872-02

## CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Edward J. Adams  
Chemist III

Continued from Previous Page

<b>Lab Sample#:</b> 2211872-01	<b>Sample Address:</b>		
<b>Sample Matrix:</b> NP-H20	<b>Sample Point:</b>		<b>Surface:</b>
<b>Description:</b> MIDDLE-IMPONDMENT-7-12-22	<b>Sample Date:</b> 07/12/2022	<b>Sample Time:</b> 08:45:00	

Test (Method)/Analyte	Result	Unit	Qualifiers	MCL	RL	High Limit	Low Limit	Analysis Date	Analyst
Chlorophyll A (10200 H)	0.003	mg/L	J		0.001			07/18/2022 14:22:00	K.M.
Phosphorus, Total (L-10-115-01-1-F)	11	ug/L			2			07/20/2022 12:15:58	M.C.

Chlorophyll A result is approximate due to not having associated passing quality control samples.

Attached By A.B. Date 09/27/2022 Time 12:15:37

<b>Lab Sample#:</b> 2211872-02	<b>Sample Address:</b>		
<b>Sample Matrix:</b> NP-H20	<b>Sample Point:</b>		<b>Surface:</b>
<b>Description:</b> UPPER-IMPONDMENT-7-12-22	<b>Sample Date:</b> 07/12/2022	<b>Sample Time:</b> 10:00:00	

Test (Method)/Analyte	Result	Unit	Qualifiers	MCL	RL	High Limit	Low Limit	Analysis Date	Analyst
Chlorophyll A (10200 H)	0.004	mg/L	J		0.001			07/18/2022 14:22:00	K.M.
Phosphorus, Total (L-10-115-01-1-F)	11	ug/L			2			07/20/2022 12:17:07	M.C.

Chlorophyll A result is approximate due to not having associated passing quality control samples.

Attached By A.B. Date 09/27/2022 Time 12:15:37

## Units & Measurement

"mg/L" = Milligrams per liter;

"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

"ug/Kg" = Micrograms per Kilogram;

"NTU" = Nephelometric Turbidity Units;

"pCi/L" = Picocuries per Liter;

The MCL, Maximum Contaminant Level is listed for comparing your results with recommended levels.

In the "Qualifier" column, an " \*\* " is placed to indicate any results that exceed this MCL.

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Blanks are analyzed, but sample results are not blank corrected.

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MCL - Maximum Contaminant Level is the highest level allowed by EPA for public water supplies. Also used here as the maximum advisory limit set by the Maine Centers for Disease Control and Prevention.

**Note: Results below the advisory limit, including < and J are considered satisfactory for that parameter.**

Results are from the samples as received.

## Disclaimer

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### Qualifiers Legend:

#### User selectable

Code	Description
*	> Secondary Limit
**	> MCL
~	Approximately
Ach	Above Calibration Curve
B	Blank Contamination
Fl	Fluoride result is between 2 and 4 ppm
Hi	
J	<RL>MDL
Lo	
Nan	Not Analyzed
Nc	Not Confirmed
Nt	NonTarget Compound
R	Rejected
Rec	Recovery
T	Temperature does not meet criteria
U	Undetected

**From:** [Frizzell, Asenath J](#)  
**To:** [Tyler Parent](#)  
**Cc:** [Mathias, Stephanie R](#)  
**Subject:** RE: Question regarding quality control process for Chlorophyll a  
**Date:** Thursday, October 6, 2022 11:13:28 AM  
**Attachments:** [image008.png](#)  
[image009.png](#)  
[image010.png](#)  
[image011.png](#)  
[image012.png](#)  
[image013.png](#)

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CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Tyler,

I am doing well. Thank you for asking and I hope you are well too. For Chlorophyll A, I analyze an ordered QC standard prepared with acetone called an IPC. This IPC is analyzed at the beginning, end, and after every ten samples analyzed in a run to validate results. The sample run from 7/12 contained three IPC but one of these three IPC's (middle IPC analyzed) did not meet our acceptance criteria of +/- 20% of the true value and was not recognized until the run was completed and samples were outside of hold time.

Due to the lab QC failing to meet necessary QC acceptance criteria, the laboratory needs customer approval to report results. The sample results will be qualified with a statement that states "values are approximate". Would you approve HETL to report your results as stated above with qualified comments.

Thank you,

**Asenath Frizzell**

Chemist II

Health and Environmental Testing Laboratory

(207) 287-1092

***Maine Center for Disease Control and Prevention - Preserve ~Promote ~ Protect***



---

**From:** Tyler Parent <tparent@normandeu.com>  
**Sent:** Thursday, October 6, 2022 9:16 AM  
**To:** Frizzell, Asenath J <Asenath.J.Frizzell@maine.gov>  
**Subject:** Question regarding quality control process for Chlorophyll a

**EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click**

**links or open attachments unless you recognize the sender and know the content is safe.**

Hi Asenath,

I hope you are doing well. I was excited to receive three lab reports last week from our sampling in Rumford, ME this summer. As you had warned me, the 7/12/22 chlorophyll sample results were listed as “approximate” due to an issue with the quality control samples.

Would it be possible for you to send me a short narrative blurb about your typical quality control process for chlorophyll-a samples and what exactly occurred during this analysis that caused the issue?

Thanks in advance!

Tyler Parent  
*Fisheries Scientist*

**Normandeau Associates, Inc.**  
30 International Drive, Suite 6  
Portsmouth, NH 03801  
603-319-5308 (direct) 805-708-6472 (cell)  
[tparent@normandeau.com](mailto:tparent@normandeau.com)



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Department of Health and Human Services  
Health and Environmental Testing Laboratory

221 State Street  
#12 State House Station  
Augusta, ME 04333-0012  
Phone: (207)287-2727 Fax: (207)287-6832  
TTY: 1-800-606-0215  
EPA ID: ME00002

TYLER PARENT  
NORMANDEAU ASSOCIATES, INC.  
25 NASHUA RD  
BEDFORD NH 03110

Logged: 7/26/2022 12:19:31PM

Folder #: 2212497

Office Use Only: Line Item MNA1 Private
--

Project Name: RUMFORD WQ  
No. of Samples in Folder:(4)

Released: 9/27/2022

2212497-01  
2212497-02  
2212497-03  
2212497-04

## CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Edward J. Adams  
Chemist III

Continued from Previous Page

<b>Lab Sample#:</b> 2212497-01	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H20	<b>Sample Point:</b>				<b>Surface:</b>				
<b>Description:</b> MIDDLE-IMPONDMENT-7-26-22	<b>Sample Date:</b> 07/26/2022		<b>Sample Time:</b> 08:30:00						
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Chlorophyll A (10200 H)	0.003	mg/L			0.001			08/18/2022 15:18:00	A.B.

<b>Lab Sample#:</b> 2212497-02	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H20	<b>Sample Point:</b>				<b>Surface:</b>				
<b>Description:</b> MIDDLE-IMPONDMENT-7-26-22	<b>Sample Date:</b> 07/26/2022		<b>Sample Time:</b> 09:35:00						
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Phosphorus, Total (L-10-115-01-1-F)	17	ug/L			2			08/10/2022 13:07:37	M.C.

<b>Lab Sample#:</b> 2212497-03	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H20	<b>Sample Point:</b>				<b>Surface:</b>				
<b>Description:</b> UPPER-IMPONDMENT-7-26-22	<b>Sample Date:</b> 07/26/2022		<b>Sample Time:</b> 09:35:00						
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Chlorophyll A (10200 H)	0.003	mg/L			0.001			08/18/2022 15:18:00	A.B.

<b>Lab Sample#:</b> 2212497-04	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H20	<b>Sample Point:</b>				<b>Surface:</b>				
<b>Description:</b> UPPER-IMPONDMENT-7-26-22	<b>Sample Date:</b> 07/26/2022		<b>Sample Time:</b> 08:30:00						
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Phosphorus, Total (L-10-115-01-1-F)	12	ug/L			2			08/10/2022 13:08:47	M.C.

## Units & Measurement

"mg/L" = Milligrams per liter;

"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

"ug/Kg" = Micrograms per Kilogram;

"NTU" = Nephelometric Turbidity Units;

"pCi/L" = Picocuries per Liter;

The MCL, Maximum Contaminant Level is listed for comparing your results with recommended levels.

In the "Qualifier" column, an " \*\* " is placed to indicate any results that exceed this MCL.

**If there are no " \* " in the "Qualifier" column, your result is considered satisfactory for those tests.**

All solid results are reported on a "Dry Weight" basis.

Blanks are analyzed, but sample results are not blank corrected.

RL-Reporting Limit is the lowest concentration which can be reliably reported on a routine basis.

"<" = Less than      ">" = Greater than

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**Note: Results below the advisory limit, including < and J are considered satisfactory for that parameter.**

Results are from the samples as received.

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### Qualifiers Legend:

#### User selectable

Code	Description
*	> Secondary Limit
**	> MCL
~	Approximately
Ach	Above Calibration Curve
B	Blank Contamination
Fl	Fluoride result is between 2 and 4 ppm
Hi	
J	<RL>MDL
Lo	
Nan	Not Analyzed
Nc	Not Confirmed
Nt	NonTarget Compound
R	Rejected
Rec	Recovery
T	Temperature does not meet criteria
U	Undetected



Department of Health and Human Services  
Health and Environmental Testing Laboratory

221 State Street

#12 State House Station

Augusta, ME 04333-0012

Phone: (207)287-2727 Fax: (207)287-6832

TTY: 1-800-606-0215

EPA ID: ME00002

TYLER PARENT  
NORMANDEAU ASSOCIATES, INC.  
25 NASHUA RD  
BEDFORD NH 03110

Logged: 8/16/2022 12:19:55PM

Folder #: 2213916

Office Use Only: Line Item MNA1 Private
--

Project Name: RUMFORD WQ

No. of Samples in Folder:(2)

Released: 10/19/2022

2213916-01

2213916-02

## CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Mackenzie C. Lee, M.S.  
Inorganic and Microbiology Supervisor

Edward J. Adams, Ph.D.  
Organic and Environmental Metals Supervisor

Continued from Previous Page

<b>Lab Sample#:</b> 2213916-01	<b>Sample Address:</b>		
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>		<b>Surface:</b>
<b>Description:</b> MIDDLE-IMPOUNDMENT-8-16-22	<b>Sample Date:</b> 08/16/2022	<b>Sample Time:</b> 08:50:00	

<u>Test (Method)/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>Qualifiers</u>	<u>MCL</u>	<u>RL</u>	<u>High Limit</u>	<u>Low Limit</u>	<u>Analysis Date</u>	<u>Analyst</u>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			09/13/2022 14:10:00	K.M.
Phosphorus, Total (L-10-115-01-1-F)	13	ug/L			2			09/07/2022 10:55:14	M.C.

<b>Lab Sample#:</b> 2213916-02	<b>Sample Address:</b>		
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>		<b>Surface:</b>
<b>Description:</b> UPPER-IMPOUNDMENT-8-16-22	<b>Sample Date:</b> 08/16/2022	<b>Sample Time:</b> 10:00:00	

<u>Test (Method)/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>Qualifiers</u>	<u>MCL</u>	<u>RL</u>	<u>High Limit</u>	<u>Low Limit</u>	<u>Analysis Date</u>	<u>Analyst</u>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			09/13/2022 14:10:00	K.M.
Phosphorus, Total (L-10-115-01-1-F)	20	ug/L			2			09/07/2022 10:56:21	M.C.

## Units & Measurement

"mg/L" = Milligrams per liter;

"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

"ug/Kg" = Micrograms per Kilogram;

"NTU" = Nephelometric Turbidity Units;

"pCi/L" = Picocuries per Liter;

The MCL, Maximum Contaminant Level is listed for comparing your results with recommended levels.

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#### User selectable

Code	Description
*	> Secondary Limit
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Ach	Above Calibration Curve
B	Blank Contamination
Fl	Fluoride result is between 2 and 4 ppm
Hi	
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Lo	
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Nc	Not Confirmed
Nt	NonTarget Compound
R	Rejected
Rec	Recovery
T	Temperature does not meet criteria
U	Undetected



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TTY: 1-800-606-0215

EPA ID: ME00002

TYLER PARENT  
NORMANDEAU ASSOCIATES, INC.  
25 NASHUA RD  
BEDFORD NH 03110

Logged: 8/26/2022 12:00:57PM

Folder #: 2214457

Office Use Only: Line Item MNA1 Private
--

Project Name: RUMFORD WQ

Released: 10/25/2022

No. of Samples in Folder:(2)

2214457-01

2214457-02

## CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Mackenzie C. Lee, M.S.  
Inorganic and Microbiology Supervisor

Edward J. Adams, Ph.D.  
Organic and Environmental Metals Supervisor

Continued from Previous Page

<b>Lab Sample#:</b> 2214457-01	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>					<b>Surface:</b>			
<b>Description:</b> RUMFORD-MIDDLE-IMP	<b>Sample Date:</b> 08/26/2022			<b>Sample Time:</b> 08:30:00					
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
6020A Prep (3010A)	Done							08/31/2022 09:00:00	I.M.
Chlorophyll A (10200 H)	0.002	mg/L			0.001			09/21/2022 14:42:00	K.M.
<b>METALS_6020A (6020A)</b>									
Aluminum	0.15	mg/L			0.002			08/31/2022 21:22:36	I.M.
<b>NP_Anions_IC (300.0)</b>									
Nitrate Nitrogen	0.04	mg/L			0.01			08/27/2022 03:00:00	M.E.
Phosphorus, Total (L-10-115-01-1-F)	22	ug/L			2			09/20/2022 11:00:06	M.C.

<b>Lab Sample#:</b> 2214457-02	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>					<b>Surface:</b>			
<b>Description:</b> RUMFORD-UPPER-IMP	<b>Sample Date:</b> 08/26/2022			<b>Sample Time:</b> 09:40:00					
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
6020A Prep (3010A)	Done							08/31/2022 09:00:00	I.M.
Chlorophyll A (10200 H)	0.002	mg/L			0.001			09/21/2022 14:42:00	K.M.
<b>METALS_6020A (6020A)</b>									
Aluminum	0.15	mg/L			0.002			08/31/2022 21:47:35	I.M.
<b>NP_Anions_IC (300.0)</b>									
Nitrate Nitrogen	0.04	mg/L			0.01			08/27/2022 03:20:00	C.B.
Phosphorus, Total (L-10-115-01-1-F)	19	ug/L			2			09/20/2022 11:01:15	M.C.



## Units & Measurement

"mg/L" = Milligrams per liter;

"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

"ug/Kg" = Micrograms per Kilogram;

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"pCi/L" = Picocuries per Liter;

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Ach	Above Calibration Curve
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Fl	Fluoride result is between 2 and 4 ppm
Hi	
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Lo	
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R	Rejected
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T	Temperature does not meet criteria
U	Undetected



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EPA ID: ME00002

TYLER PARENT  
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25 NASHUA RD  
BEDFORD NH 03110

Logged: 9/6/2022 1:23:35PM

Folder #: 2215341

Office Use Only: Line Item MNA1 Private
--

Project Name: RUMFORD WQ

Released: 11/10/2022

No. of Samples in Folder:(2)

2215341-01

2215341-02

## CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Mackenzie C. Lee, M.S.  
Inorganic and Microbiology Supervisor

Edward J. Adams, Ph.D.  
Organic and Environmental Metals Supervisor

Continued from Previous Page

<b>Lab Sample#:</b> 2215341-01	<b>Sample Address:</b>		
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>		<b>Surface:</b>
<b>Description:</b> MIDDLE-IMPOUNDMENT-9-6-22	<b>Sample Date:</b> 09/06/2022	<b>Sample Time:</b> 09:00:00	

<u>Test (Method)/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>Qualifiers</u>	<u>MCL</u>	<u>RL</u>	<u>High Limit</u>	<u>Low Limit</u>	<u>Analysis Date</u>	<u>Analyst</u>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			10/04/2022 14:08:00	A.B.
Phosphorus, Total (L-10-115-01-1-F)	11	ug/L	J		2			10/04/2022 12:14:06	M.C.

Total phosphorus result is approximate due to sample analysis occurring outside the 28 day method hold time.

**Attached By** M.C. **Date** 10/04/2022 **Time** 14:56:19

<b>Lab Sample#:</b> 2215341-02	<b>Sample Address:</b>		
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>		<b>Surface:</b>
<b>Description:</b> UPPER-IMPOUNDMENT-9-6-22	<b>Sample Date:</b> 09/06/2022	<b>Sample Time:</b> 10:10:00	

<u>Test (Method)/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>Qualifiers</u>	<u>MCL</u>	<u>RL</u>	<u>High Limit</u>	<u>Low Limit</u>	<u>Analysis Date</u>	<u>Analyst</u>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			10/04/2022 14:08:00	A.B.
Phosphorus, Total (L-10-115-01-1-F)	11	ug/L	J		2			10/04/2022 12:15:15	M.C.

Total phosphorus result is approximate due to sample analysis occurring outside the 28 day method hold time.

**Attached By** M.C. **Date** 10/04/2022 **Time** 14:56:19

## Units & Measurement

"mg/L" = Milligrams per liter;

"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

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#### User selectable

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**	> MCL
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Ach	Above Calibration Curve
B	Blank Contamination
Fl	Fluoride result is between 2 and 4 ppm
Hi	
J	<RL>MDL
Lo	
Nan	Not Analyzed
Nc	Not Confirmed
Nt	NonTarget Compound
R	Rejected
Rec	Recovery
T	Temperature does not meet criteria
U	Undetected

**From:** [Cameron, MacKenzie C](#)  
**To:** [Tyler Parent](#)  
**Cc:** [Frizzell, Asenath J](#); [Lee, Mackenzie](#)  
**Subject:** RE: Request regarding approximate Phosphorus results  
**Date:** Monday, November 14, 2022 9:36:27 AM  
**Attachments:** [image010.png](#)  
[image011.png](#)  
[image012.png](#)  
[image013.png](#)  
[image014.png](#)  
[image015.png](#)

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**CAUTION:** This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hello, this is MacKenzie Cameron, the primary Total Phosphorus analyst. The reasons for the delay of analysis was reagent shortages, a necessary chemical reagent was not available and the order that was placed was placed in a que without the lab being informed of the delay. As far as what being outside the method hold time means for the results we have performed studies that show some minor loss (~10%) from 2 to 3 months after sampling your sample was analyzed specifically at 28 days and 3 hours so while it is outside the 28 day hold time and must be qualified due to not meeting the method requirements there would be next to no affect on the actual result. I apologize for this delay as your drop off time was impeccable from when sampling occurred.

**Mackenzie Cameron**

Chemist I

**Department of Health and Human Services**

***Maine Center for Disease Control and Prevention – Preserve ~ Promote ~ Protect***

**Office of Disease Control and Prevention**

**Division of Disease Surveillance**

**Health and Environmental Testing Lab - Inorganics**

221 State St  
12 State House Station  
Augusta, ME 04333

Fax: (207) 287-8925



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---

**From:** Frizzell, Asenath J <Asenath.J.Frizzell@maine.gov>  
**Sent:** Monday, November 14, 2022 8:38 AM  
**To:** Cameron, MacKenzie C <MacKenzie.C.Cameron@maine.gov>  
**Cc:** Lee, Mackenzie <Mackenzie.Lee@maine.gov>  
**Subject:** FW: Request regarding approximate Phosphorus results

Hi Mackenzie,

Could you answer Tyler's questions below.

Thank you,

**Asenath Frizzell**

Chemist II

Health and Environmental Testing Laboratory

(207) 287-1092

**Maine Center for Disease Control and Prevention - Preserve ~Promote ~ Protect**



---

**From:** Tyler Parent <[tparent@normandeau.com](mailto:tparent@normandeau.com)>  
**Sent:** Monday, November 14, 2022 7:08 AM  
**To:** Frizzell, Asenath J <[Asenath.J.Frizzell@maine.gov](mailto:Asenath.J.Frizzell@maine.gov)>  
**Subject:** Request regarding approximate Phosphorus results

**EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.**

Good morning,

Last week I received analysis results (attached) for some chlorophyll and phosphorus samples I dropped off on September 6<sup>th</sup>. I was disappointed to see that that the phosphorus results included the comment: **“Total phosphorus result is approximate due to sample analysis occurring outside the 28 day method hold time.”** I don't think you were the analyst for these particular samples, but I am hoping that you might be able to help me get a more detailed explanation of what occurred with these samples.

Specifically, I am hoping that you can explain:

1. That we (Normandeau) dropped off the samples properly and well within the allowable hold time
2. Reason for the lab's delay in analysis that caused the samples to be held too long
3. What it means for the results.
  - a. Do phosphorus samples held for too long tend to have values that increase? Decrease?

Stay the same?

Thank you very much and I hope you have a good week!

Tyler Parent  
*Fisheries Scientist*  
**Normandeau Associates, Inc.**  
30 International Drive, Suite 6  
Portsmouth, NH 03801  
603-319-5308 (direct) 805-708-6472 (cell)  
[tparent@normandeau.com](mailto:tparent@normandeau.com)



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Health and Environmental Testing Laboratory

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Augusta, ME 04333-0012

Phone: (207)287-2727 Fax: (207)287-6832

TTY: 1-800-606-0215

EPA ID: ME00002

TYLER PARENT  
NORMANDEAU ASSOCIATES, INC.  
25 NASHUA RD  
BEDFORD NH 03110

Logged: 9/20/2022 12:26:00PM

Folder #: 2215966

Office Use Only: Line Item MNA1 Private
--

Project Name: RUMFORD WQ

No. of Samples in Folder:(2)

Released: 11/21/2022

2215966-01

2215966-02

## CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Mackenzie C. Lee, M.S.  
Inorganic and Microbiology Supervisor

Edward J. Adams, Ph.D.  
Organic and Environmental Metals Supervisor



Continued from Previous Page

<b>Lab Sample#:</b> 2215966-01	<b>Sample Address:</b>		
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>		<b>Surface:</b>
<b>Description:</b> MIDDLE-IMPOUNDMENT-9-20-22	<b>Sample Date:</b> 09/20/2022	<b>Sample Time:</b> 08:45:00	

<u>Test (Method)/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>Qualifiers</u>	<u>MCL</u>	<u>RL</u>	<u>High Limit</u>	<u>Low Limit</u>	<u>Analysis Date</u>	<u>Analyst</u>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			10/14/2022 11:25:00	A.B.
Phosphorus, Total (L-10-115-01-1-F)	12	ug/L			2			10/06/2022 09:34:58	M.C.

<b>Lab Sample#:</b> 2215966-02	<b>Sample Address:</b>		
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>		<b>Surface:</b>
<b>Description:</b> UPPER-IMPOUNDMENT-9-20-22	<b>Sample Date:</b> 09/20/2022	<b>Sample Time:</b> 10:05:00	

<u>Test (Method)/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>Qualifiers</u>	<u>MCL</u>	<u>RL</u>	<u>High Limit</u>	<u>Low Limit</u>	<u>Analysis Date</u>	<u>Analyst</u>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			10/14/2022 11:25:00	A.B.
Phosphorus, Total (L-10-115-01-1-F)	10	ug/L			2			10/06/2022 09:36:04	M.C.

## Units & Measurement

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"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

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Nt	NonTarget Compound
R	Rejected
Rec	Recovery
T	Temperature does not meet criteria
U	Undetected



Department of Health and Human Services  
Health and Environmental Testing Laboratory

221 State Street

#12 State House Station

Augusta, ME 04333-0012

Phone: (207)287-2727 Fax: (207)287-6832

TTY: 1-800-606-0215

EPA ID: ME00002

TYLER PARENT  
NORMANDEAU ASSOCIATES, INC.  
25 NASHUA RD  
BEDFORD NH 03110

Logged: 10/4/2022 11:56:40AM

Folder #: 2217405

Office Use Only: Line Item MNA1 Private
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Project Name: RUMFORD WQ

Released: 11/21/2022

No. of Samples in Folder:(2)

2217405-01

2217405-02

### CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Mackenzie C. Lee, M.S.  
Inorganic and Microbiology Supervisor

Edward J. Adams, Ph.D.  
Organic and Environmental Metals Supervisor

Continued from Previous Page

<b>Lab Sample#:</b> 2217405-01	<b>Sample Address:</b>
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b> <b>Surface:</b>
<b>Description:</b> MIDDLE IMPONDMENT	<b>Sample Date:</b> 10/04/2022 <b>Sample Time:</b> 08:45:00

<u>Test (Method)/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>Qualifiers</u>	<u>MCL</u>	<u>RL</u>	<u>High Limit</u>	<u>Low Limit</u>	<u>Analysis Date</u>	<u>Analyst</u>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			10/20/2022 09:56:00	A.B.
Phosphorus, Total (L-10-115-01-1-F)	10	ug/L			2			10/25/2022 08:56:45	M.C.

<b>Lab Sample#:</b> 2217405-02	<b>Sample Address:</b>
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b> <b>Surface:</b>
<b>Description:</b> UPPER IMPONDMENT	<b>Sample Date:</b> 10/04/2022 <b>Sample Time:</b> 09:50:00

<u>Test (Method)/Analyte</u>	<u>Result</u>	<u>Unit</u>	<u>Qualifiers</u>	<u>MCL</u>	<u>RL</u>	<u>High Limit</u>	<u>Low Limit</u>	<u>Analysis Date</u>	<u>Analyst</u>
Chlorophyll A (10200 H)	0.001	mg/L			0.001			10/20/2022 09:56:00	A.B.
Phosphorus, Total (L-10-115-01-1-F)	10	ug/L			2			10/25/2022 08:57:51	M.C.

## Units & Measurement

"mg/L" = Milligrams per liter;

"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

"ug/Kg" = Micrograms per Kilogram;

"NTU" = Nephelometric Turbidity Units;

"pCi/L" = Picocuries per Liter;

The MCL, Maximum Contaminant Level is listed for comparing your results with recommended levels.

In the "Qualifier" column, an " \*\* " is placed to indicate any results that exceed this MCL.

**If there are no " \* " in the "Qualifier" column, your result is considered satisfactory for those tests.**

All solid results are reported on a "Dry Weight" basis.

Blanks are analyzed, but sample results are not blank corrected.

RL-Reporting Limit is the lowest concentration which can be reliably reported on a routine basis.

"<" = Less than      ">" = Greater than

MCL - Maximum Contaminant Level is the highest level allowed by EPA for public water supplies. Also used here as the maximum advisory limit set by the Maine Centers for Disease Control and Prevention.

**Note: Results below the advisory limit, including < and J are considered satisfactory for that parameter.**

Results are from the samples as received.

## Disclaimer

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The results in this report are for the submitted sample(s) only.

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### Qualifiers Legend:

#### User selectable

Code	Description
*	> Secondary Limit
**	> MCL
~	Approximately
Ach	Above Calibration Curve
B	Blank Contamination
Fl	Fluoride result is between 2 and 4 ppm
Hi	
J	<RL>MDL
Lo	
Nan	Not Analyzed
Nc	Not Confirmed
Nt	NonTarget Compound
R	Rejected
Rec	Recovery
T	Temperature does not meet criteria
U	Undetected



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EPA ID: ME00002

TYLER PARENT  
NORMANDEAU ASSOCIATES, INC.  
25 NASHUA RD  
BEDFORD NH 03110

Logged: 10/25/2022 10:32:10AM

Folder #: 2218070

Office Use Only: Line Item MNA1 Private
--

Project Name: RUMFORD WQ

No. of Samples in Folder:(1)

Released: 12/1/2022

2218070-01

## CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Mackenzie C. Lee, M.S.  
Inorganic and Microbiology Supervisor

Edward J. Adams, Ph.D.  
Organic and Environmental Metals Supervisor

Continued from Previous Page

<b>Lab Sample#:</b> 2218070-01	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>					<b>Surface:</b>			
<b>Description:</b> UPPER IMPONDMENT 8/25/22	<b>Sample Date:</b> 10/25/2022					<b>Sample Time:</b> 08:40:00			
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			11/22/2022 09:18:00	A.B.
Phosphorus, Total (L-10-115-01-1-F)	13	ug/L			2			11/03/2022 11:57:18	M.C.

## Units & Measurement

"mg/L" = Milligrams per liter;

"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

"ug/Kg" = Micrograms per Kilogram;

"NTU" = Nephelometric Turbidity Units;

"pCi/L" = Picocuries per Liter;

The MCL, Maximum Contaminant Level is listed for comparing your results with recommended levels.

In the "Qualifier" column, an " \*\* " is placed to indicate any results that exceed this MCL.

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All solid results are reported on a "Dry Weight" basis.

Blanks are analyzed, but sample results are not blank corrected.

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### Qualifiers Legend:

#### User selectable

Code	Description
*	> Secondary Limit
**	> MCL
~	Approximately
Ach	Above Calibration Curve
B	Blank Contamination
Fl	Fluoride result is between 2 and 4 ppm
Hi	
J	<RL>MDL
Lo	
Nan	Not Analyzed
Nc	Not Confirmed
Nt	NonTarget Compound
R	Rejected
Rec	Recovery
T	Temperature does not meet criteria
U	Undetected





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TYLER PARENT  
NORMANDEAU ASSOCIATES, INC.  
25 NASHUA RD  
BEDFORD NH 03110

Logged: 11/8/2022 10:17:55AM

Folder #: 2218788

Office Use Only: Line Item MNA1 Private
--

Project Name: RUMFORD WQ

No. of Samples in Folder:(1)

Released: 12/1/2022

2218788-01

## CERTIFICATION

The HETL hereby certifies that all test results for this sample were analyzed by the method listed, including preservation, preparation, and holding times, unless otherwise indicated.

Jennifer L. Jamison, Operations Manager

Stephanie Mathias, Quality Assurance Officer

If we can be of further assistance to you, please call us at 287-1716.

Approved by:

Mackenzie C. Lee, M.S.  
Inorganic and Microbiology Supervisor

Edward J. Adams, Ph.D.  
Organic and Environmental Metals Supervisor

Continued from Previous Page

<b>Lab Sample#:</b> 2218788-01	<b>Sample Address:</b>								
<b>Sample Matrix:</b> NP-H2O	<b>Sample Point:</b>					<b>Surface:</b>			
<b>Description:</b> RUMFORD MIDDLE INPARDMENT	<b>Sample Date:</b> 11/08/2022					<b>Sample Time:</b> 08:45:00			
<b>Test (Method)/Analyte</b>	<b>Result</b>	<b>Unit</b>	<b>Qualifiers</b>	<b>MCL</b>	<b>RL</b>	<b>High Limit</b>	<b>Low Limit</b>	<b>Analysis Date</b>	<b>Analyst</b>
Chlorophyll A (10200 H)	0.002	mg/L			0.001			11/22/2022 09:18:00	A.B.
Phosphorus, Total (L-10-115-01-1-F)	12	ug/L			2			11/10/2022 09:10:44	M.C.

## Units & Measurement

"mg/L" = Milligrams per liter;

"ug/L" = Micrograms per Liter;

"mg/Kg" = Milligrams per Kilogram;

"ug/Kg" = Micrograms per Kilogram;

"NTU" = Nephelometric Turbidity Units;

"pCi/L" = Picocuries per Liter;

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**	> MCL
~	Approximately
Ach	Above Calibration Curve
B	Blank Contamination
Fl	Fluoride result is between 2 and 4 ppm
Hi	
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Nc	Not Confirmed
Nt	NonTarget Compound
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Rec	Recovery
T	Temperature does not meet criteria
U	Undetected