Ambient Water Quality Monitoring Survey in the Hamlet of Amenia

Report to the Town of Amenia
Prepared by the Housatonic Valley Association - 2024

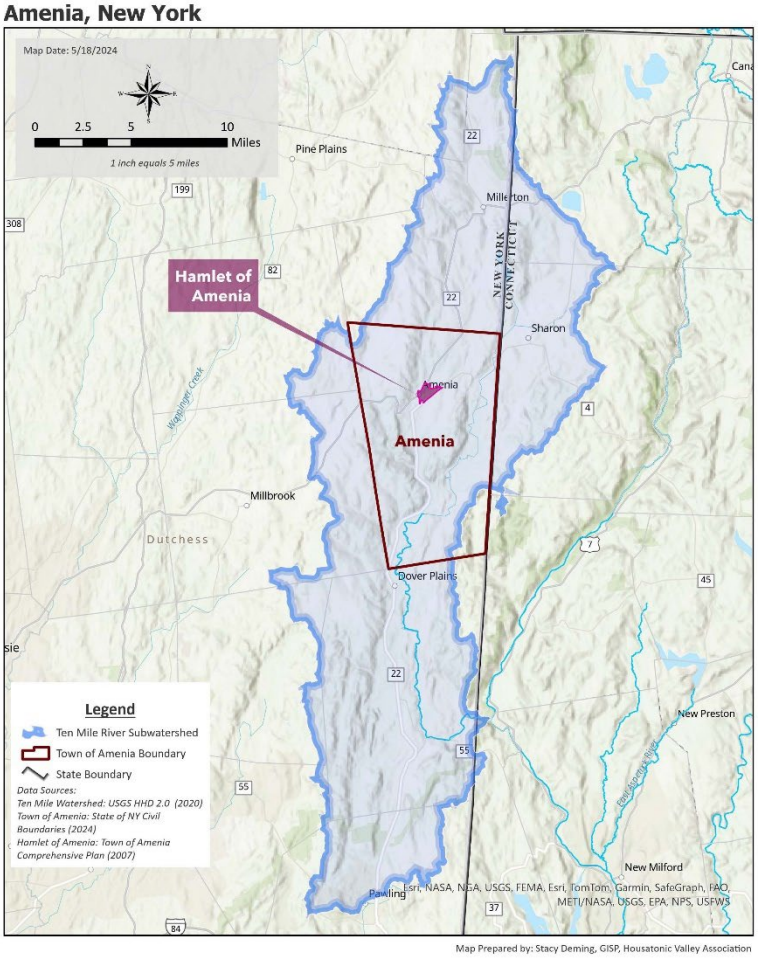
Housatonic Valley Association
5-28-2024

I. Introduction

The Housatonic Valley Association ("HVA") was contracted by the Town of Amenia ("Town") in 2023 to plan and implement an Ambient Water Quality Monitoring Survey ("Ambient Monitoring") in the Hamlet of Amenia ("Hamlet"), in the Town, which lies within the Ten Mile River Watershed (see Map 1).

The Hamlet has a long history of septic system issues and has been attempting to provide municipal sewer service for nearly three decades. The results of a 2022 wastewater survey revealed that common septic system issues include odors, slow draining systems, and sewage backups into basements and yards. The Town suspects that failing septic systems in the Hamlet are impacting surface water quality. In 2023 Tighe &Bond Engineering delivered a Sewer Feasibility Study for the Hamlet; which included creating a new sewer district and siting of a wastewater treatment facility.

Map 1: Ten Mile River Watershed and the Town of Amenia, New York



Map 1: Ten Mile River Watershed and Town of Amenia, NY

The Town is seeking funds to construct a community wastewater treatment facility to service the proposed Hamlet sewer district. Competitive funding opportunities that are required to make a community wastewater facility feasible require documentation of need, including demonstration of impaired water quality which the facility would alleviate.

HVA's Ambient Monitoring work in the Hamlet is designed to characterize water quality impacts arising from within the planned sewer district through assessment of streams and other surface waters upstream, downstream and within the proposed sewer district. This work aligns with the water quality goals of the Ten Mile River Watershed Management Plan, which was completed by the Ten Mile River Watershed Collaborative in July of 2022 and formally adopted by the Town in March 2024. This group, of

which the Town is a key participant, has met regularly since 2014 to discuss watershed management issues and look for opportunities to achieve shared management goals.
HVA worked with New York State Department of Environmental Conservation ("NYSDEC") and Region I of the US Environmental Protection Agency to develop a Quality Assurance Project Plan ("QAPP") for a water quality monitoring program in support of the Ten Mile River Watershed Plan. As part of the development of the QAPP, HVA attained certification through the Professional External Evaluations of Rivers and Streams ("PEERS") program through NYDEC. PEERS outfitted environmental professional organizations such as watershed associations, consulting firms, other government agencies and tribes with equipment, resources, and training to support collection of professional-grade chemical and biological water quality data. To become PEERS certified, partner organizations wrote a QAPP in collaboration with a PEERS coordinator and demonstrated competency in sample collection and data management protocols. The PEERS program's stringent certification and training requirements yielded high-quality data that can be used in state and federal water quality reports.
Although the PEERS program has been discontinued, Standard Operating Procedures ("SOPs") approved through that program were used for this Water Quality Monitoring Project.

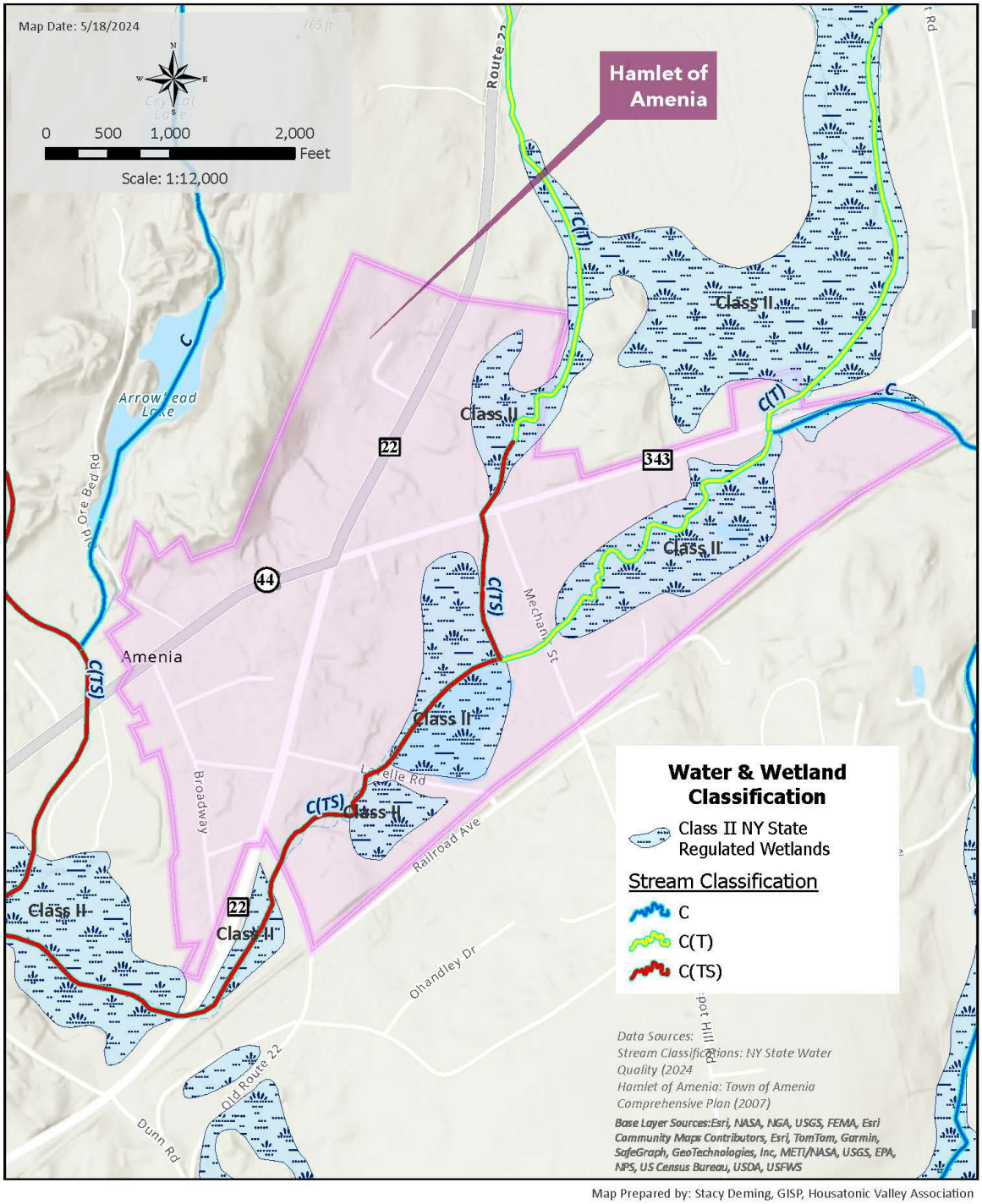
II. Geography

The Town of Amenia is in the East central part of Dutchess County, New York. The Hamlet of Amenia is located within the Town on US Route 44 at the junction of State Routes 22 and 343. The Hamlet is approximately 1.5 square miles (See Map 2: Hamlet of Amenia). As shown in Map 2, there are NYSDEC regulated freshwater wetlands on the eastern and southern side of the hamlet adjacent to the NYSDEC Class C streams that join at Beekman Park and continue south along Route 22 and eventually join Wassaic Creek. Unnamed tributaries generally flow south through the Hamlet, approximately parallel to Route 22 to eventually join Wassaic Creek. These waterbodies are Class C, Class C(T), or Class C(TS) as defined by NYSDEC[1]. Class C waterbodies are suitable for supporting fisheries and non-contact activities. The waterbodies classified as Class C(T) support a trout population and the Class (TS) waterbodies support trout spawning[2]

For the purposes of this project, the unnamed tributary flowing from the North, under US Route 44 is referred to as "West Branch." The unnamed tributary flowing from the East is referred to as "East Branch." East Branch is made up of two unnamed tributaries. The westernmost tributary to East Branch, flowing from the North behind Town Hall and under Route 343 is referred to as "West Tributary (Trib) East Branch." The easternmost tributary to East Branch, flowing southwest and under Mechanic Street is referred to as "East Tributary (Trib) East Branch" (See Map 3: Water Quality Testing Sites).

[1] NY Department of Environmental Conservation. 2021. Available Here: https://extapps.dec.ny.gov/data/WQP/PWL/1601-0024.html
[2] NY Department of Environmental Conservation, Protection of Waters Program; Classification of Waters: https://dec.ny.gov/regulatory/permits-licenses/waterways-coastlines-wetlands/protection-of-waters-program

Map 2: Hamlet of Amenia; Map of the Hamlet of Amenia, New York

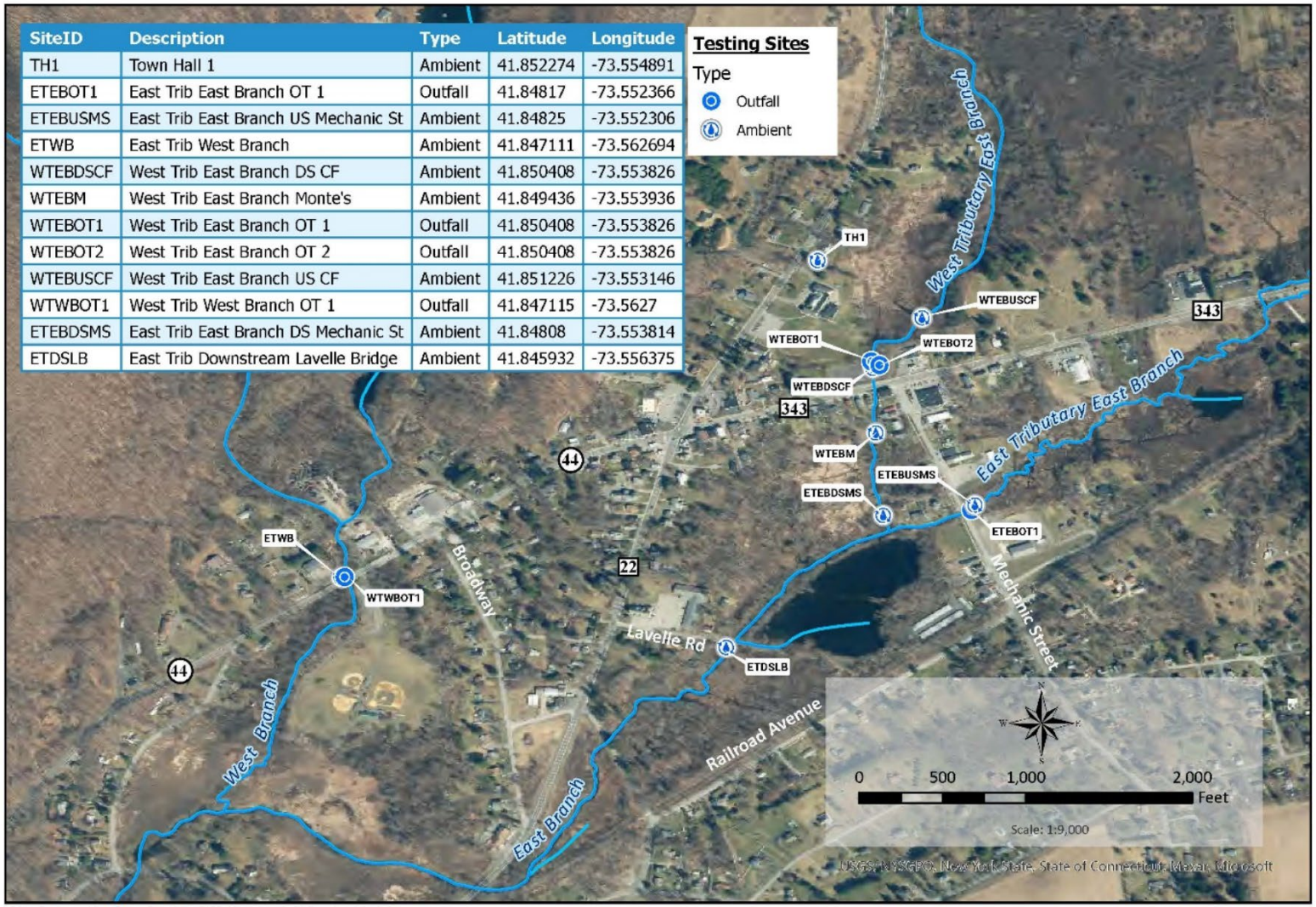


Map Prepared by: Stacy Deming, GISP, Housatonic Valley Association

Map 2: Map of the Hamlet of Amenia, Town of Amenia, NY

Map 3: Water Quality Testing Sites
Amenia, New York

SiteID	Description	Type	Latitude	Longitude
TH1	Town Hall 1	Ambient	41.852274	-73.554891
ETEBOT1	East Trib East Branch OT 1	Outfall	41.84817	-73.552366
ETEBUSMS	East Trib East Branch US Mechanic St	Ambient	41.84825	-73.552306
ETWB	East Trib West Branch	Ambient	41.847111	-73.562694
WTEBDSCF	West Trib East Branch DS CF	Ambient	41.850408	-73.553826
WTEBM	West Trib East Branch Monte's	Ambient	41.849436	-73.553936
WTEBOT1	West Trib East Branch OT 1	Outfall	41.850408	-73.553826
WTEBOT2	West Trib East Branch OT 2	Outfall	41.850408	-73.553826
WTEBUSCF	West Trib East Branch US CF	Ambient	41.851226	-73.553146
WTWBOT1	West Trib West Branch OT 1	Outfall	41.847115	-73.5627
ETEBDSMS	East Trib East Branch DS Mechanic St	Ambient	41.84808	-73.553814
ETDSLB	East Trib Downstream Lavelle Bridge	Ambient	41.845932	-73.556375



Map Prepared by: Stacy Deming, GISP, Housatonic Valley Association

Date: 5/15/2024

Map 3: Water Quality Testing Sites

III. Ambient Monitoring

Ambient water quality monitoring was conducted in 2023 and 2024 at 12 sites within the Hamlet and area of the proposed sewer district. These 12 sites were selected to bracket suspected water quality impacts related to parcels on which the Town suspects have failing or no longer functioning septic systems.

Additional data was collected at each site including site conditions for 1st and 2nd degree contact recreation, weather conditions, water clarity, phytoplankton (suspended algae), periphyton (algae on submerged surfaces), macrophyte (aquatic plants), odor, trash, discharge/pipes, as well as additional observations/Field Notes.

Sampling events occurred August-November 2023, and continued April - May 2024 for a total of five sampling events. Crews sampled in both wet and dry weather, with wet weather being defined as greater than 0.1 inches of rain in a prior 48 hour period, and dry weather being defined as less than 0.1 inches of rain in a prior 48 hour period.

Table 1: Sampling Events Dates and Types

Date of Sampling	Wet or Dry Weather Sample
8/29/2023	Dry
9/11/2023	Wet
11/17/2023	Dry
4/15/2024	Wet
5/8/2024	Wet

HVA tested parameters in the field using a YSI Pro Plus Multiparameter Instrument, which collected Temperature (°C), Conductivity (mS), Salinity (ppt), and pH. Field test kits were used to test Surfactants (CHEMetrics SAM Kit), Chlorine (HACH DR300 Pocket Meter), and Ammonia (HACH Pocket Colorimeter II). A 250 mL water sample was collected at each site and then tested in a certified laboratory for *E. coli*, Nitrate/Nitrite, and Phosphorus (See Appendix C.ii.). Bacteria samples were processed by either Harbor Watch, Inc. (Westport, CT) or Pace Analytical (Newburgh, NY). Pace Analytical Laboratory in Newburgh, NY is accredited by the Environmental Laboratory Approval Program.

IV. Outfall Sampling

In addition to ambient monitoring, priority outfalls ("OT") were selected based on surrounding land use, and other characteristics recorded during assessments. The same parameters collected during ambient monitoring were collected from outfalls.

Additional data was collected at each outfall site including structure material, structure dimensions, surrounding land use, and flow characteristics. Surrounding land uses observed

were commercial (WTEBOT1; WTEBOT2), and industrial (WTWBOT1; ETEBOT1). Flow characteristics include volume, water color, water clarity, floatables, odor, plant growth, and debris. (See Appendix D).

HVA tested parameters in the field using a YSI Pro Plus Multiparameter Instrument, which collected Temperature (°C), Conductivity (mS), Salinity (ppt), and pH. Field test kits were used to test Surfactants (CHEMetrics SAM Kit), Chlorine (HACH DR300 Pocket Meter), and Ammonia (HACH Pocket Colorimeter II). A 250 mL water sample was collected at each site and then tested in a certified laboratory for *E. coli*, Nitrate/Nitrite, and Phosphorus (See Appendix C.ii.). Bacteria samples were processed by either Harbor Watch, Inc. (Westport, CT) or Pace Analytical (Newburgh, NY).

v. Results

SiteID	Waterbody	Type	Latitude	Longitude
TH1	Town Hall 1	Ambient	41.852274	-73.554891
ETEBOT1	East Trib East Branch OT 1	Outfall	41.84817	-73.552366
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ETEBDSMS	East Trib East Branch DS Mechanic St	Ambient	41.84808	-73.553814
ETDSLB	East Trib Downstream Lavelle Bridge	Ambient	41.845932	-73.556375

Table 2: Sample Site Descriptions, Types, and Locations

a. *E. coli* – Ambient Monitoring Results

Table 3 and Map 4 show results for *E. coli*.

E. COLI RESULTS											
Site ID	Waterbody	Min	Mean	Median	Max	Count	8/29/2023	9/11/2023	11/17/2023	4/15/2024	5/8/2024
TH1	Town Hall 1	2	1316	61	4100	5	61	2400	2	15	4100
ETEBOT1	East Trib East Branch OT 1	3	1011	821	2400	4	43	2400		3	1600
ETEBUSMS	East Trib East Branch US Mechanic St	11	596	370	1700	5	687	370	11	210	1700
ETWB	East Trib West Branch	5	47	10	140	5	72	140	5	5	10
WTEBDSCF	West Trib East Branch DS CF	3	1060	180	4900	5	199	180	3	19	4900
WTEBM	West Trib East Branch Monte's	5	249	126	820	5	126	290	5	6	820
WTEBOT1	West Trib East Branch OT 1	0	4496	68	20000	5	68	2400	0	13	20000
WTEBOT2	West Trib East Branch OT 2	1	808	415	2400	4		2400	1	30	800
WTEBUSCF	West Trib East Branch US CF	6	222	190	700	5	193	190	6	18	700
WTWBOT1	West Trib West Branch OT 1	20	129	36	490	5	36	69	490	20	31
ETEBDSMS	East Trib East Branch DS MS	650	650	650	650	1		650			
ETDSLB	East Trib Downstream Lavelle Bridge	120		180	240	2				120	240

Table 3: Results for E. coli *for each sample site and each sampling date. Minimum/Mean/Median/Max summarizes data for all dates. Values shown in red indicate sample sites and dates where* E. coli *values exceeded the 410 cfu/100ml EPA threshold for* E. coli *in freshwater systems*[3]*. Grey cells indicate missing data. Lack of data on 8/29/2023 and 11/17/2023 was due to no water present in dry conditions. Blue cells indicate a wet sample.*

On 9/11/2023, *E. coli* levels at TH1, ETEBOT1, WTEBOT1, and WTEBOT2 were at the maximum reporting limit (2400), as compared to 8/29/2023 when *E. coli* was found to be within normal levels at those sites. Maximum reporting limit for 2023 sampling events was 2400 cfu/100ml. Due to the number of results on 9/11/2023 that met/ exceeded the 2400 reporting limit, later samples were diluted in order to process them at a higher reporting limit.

The averages of the results of five sites (TH1; ETEBOT1; WTEBOT1; WTEBOT2; and ETEBDSMS) were above the 410 cfu/100mL benchmark, with six sites below the threshold (ETEBUSMS; ETWB; WTEBDSCF; WTEBM; WTEBUSCF; and WTWBOT1).

- The only site that did not have any instances of exceedance of the 410 cfu/100mL threshold was East Trib West Branch (ETWB), which appears to drain from the North, below the confluence of East and West Tributaries of West Branch.
- In the East Branch watershed, Town Hall 1 (TH1) was the northernmost sample site. It is located next to Amenia Town Hall, along an unnamed tributary that flows East from underneath Rte. 22, past the north wall of Town Hall and into the Class II wetland upstream of West Trib East Branch Upstream Cumberland Farms (WTEBUSCF). TH1 had consistently elevated *E. coli* levels during wet weather sampling.
- Sample Site WTEBUSCF is in the Class II wetland upstream of Cumberland Farms and was selected as a control site for impacts downstream of the Cumberland Farms, a property known to be experiencing septic system failure. Only on the 5/8/2024 sampling event did *E. coli* levels exceed the threshold at WTEBUSCF. This higher number may be due to naturally occurring *E. coli* in the wetland.

[3] *"Recreational Water Quality Criteria." Environmental Protection Agency; Office of Water. 2012. https://www.epa.gov/sites/default/files/2015-10/documents/rwqc2012.pdf*

- Sample site West Trib East Branch Downstream Cumberland Farms (WTEBDSCF) is downstream of the Cumberland Farms, approximately 50 ft. West of the parking lot, and below Rte. 343 (also known as East Main St.). This in-stream sample site is upstream of two outfalls sampled, West Trib East Branch Outfall 1 (WTEBOT1) and West Trib East Branch Outfall 2 (WTEBOT2). *E. coli* levels exceeded the 410 cfu/100mL threshold, measuring 4900 cfu/100mL, on 5/8/2024.
- West Trib East Branch Monte's (WTEBM) is a sample site further downstream from Cumberland Farms along the West Tributary of East Branch, so named because it is behind the former Monte's Fine Foods storefront. From WTEBDSCF, West Trib East Branch flows South, underneath Rte. 343, and parallel to Mechanic St, behind commercial and residential properties. *E. coli* levels exceed the 410 cfu/100mL threshold on 5/8/2024, measuring 820 cfu/100mL.
- East Trib East Branch Downstream Mechanic Street (ETEBDSMS) was only sampled once, on 9/11/2023. ETEBDSMS is in a marshy area adjacent to the Class II wetland West of Mechanic St, and North of Railroad Ave. ETEBDSMS was not sampled on 8/29/2023 or 11/17/2023 due to dry conditions and did not have flow in subsequent sampling events to warrant continued sampling. *E. coli* results from ETEBDSMS on 9/11/2023 exceeded the normal threshold for *E. coli*, measuring 650 cfu/100mL.
- To the East of ETEBDSMS, East Trib East Branch Upstream Mechanic St. (ETEBUSMS) is the sample site on the East Trib of East Branch, upstream of where the Class C(T) stream flows underneath Mechanic St. and adjacent to the Judge Manning Horse Transportation facility, at the western edge of the Class II wetland East of Mechanic St. Results exceeded the normal threshold for *E. coli* on 8/29/2023 during a dry weather sampling event, measuring 687 cfu/100mL; and again on 5/8/2024 during a wet weather sampling event, measuring 1700 cfu/100mL. This in-stream sample site is upstream of East Trib East Branch Outfall 1 (ETEBOT1).
- Downstream of the confluence of East and West Tributaries of East Branch, and the 6-acre freshwater pond between Lavelle Rd. and Mechanic St. is the East Trib Downstream Lavelle Bridge (ETDSLB) sample site. This sample site was chosen for its proximity to a well that supplies drinking water to the Amenia Water District located at 38 Lavelle Rd. This sample site is located West of the well, and downstream of where Lavelle Rd. crosses East Branch. ETDSLB *E. coli* results were within normal limits on both 2024 sampling events, measuring 120 cfu/100mL on 4/15/2024; and 240 cfu/100mL on 5/8/2024.

High *E. coli* levels, especially during wet weather sampling events, could indicate failing septic systems or other sources of *E. coli* in the system. Higher levels of *E. coli* seem to be present during high flows. More investigation is required to understand the source of *E. coli* throughout this freshwater system.

See Appendix B for photos of all sample sites.

b. *E. coli* – Outfall Sampling Results

- West Trib West Branch Outfall 1 (WTWBOT1) is a 1.5' circular PVC/plastic structure that appears to drain from the Southwest, collecting water immediately upstream from a bioswale between the Torrco Plumbing Supply store and Rte. 44 (also known as West Main Street), which appears to drain the Terrace Rd. residential area. *E. coli* results exceeded the 410 cfu/100mL threshold on 11/17/2024 during a dry sampling event.
- On the West Tributary of East Branch, West Tributary East Branch Outfall 1 (WTEBOT1) is a 5' wide concrete stormwater outfall which appears to drain from underneath the 'downtown' commercial area at the intersection of Rte. 22 and Rte. 44. This stormwater outfall meets West Tributary East Branch just below the WTEBDSCF ambient sample site. The *E. coli* results from this outfall were the highest of all sample sites (both ambient and outfall sites), measuring >2400 cfu/100mL on 9/11/23 (the reporting limit was increased following this sampling event); and 20,000 cfu/100mL on 5/8/24. More investigation is required to understand the source of these elevated *E. coli* levels.
- On the opposite bank of West Trib East Branch to WTEBOT1, which appears to drain from the West, is sample site West Trib East Branch Outfall 2 (WTEBOT2). WTEBOT2 is a 3' wide concrete stormwater outfall that appears to drain from underneath the Cumberland Farms parking lot to the East. No sample was taken on 8/29/23 due to dry conditions in the outfall, which was filled with sediment on that date. Water was present during every following sampling event. *E. coli* results from WTEBOT2 samples exceeded the threshold on both 9/11/23 and 5/8/24, measuring >2400 cfu/100mL on 9/11/23; and 800 cfu/100mL on 5/8/24.
- On the East Tributary of East Branch, sample site East Trib East Branch Outfall 1 (ETEBOT1) is a circular 2' PVC/Plastic structure which appears to drain from the South/Southeast, located between the Judge Manning Horse Transportation facility, and Mechanic St. *E. coli* results exceeded the 410 cfu/100mL threshold on 9/11/23, measuring >2400 cfu/100mL; and 1600 cfu/100mL on 5/8/24. No sample was taken on 11/17/23 due to no flow.

See Appendix B for photos of all outfalls.

c. Surfactants – Ambient Monitoring Results

Surfactant (Surface-Active) Chemicals are defined by the EPA as "a material that can greatly reduce the surface tension of water"; or "a materials that promotes lathering[4]." Surfactants are found in household soaps, including bathing, laundry and dishwashing soaps. They are also

[4] United States Environmental Protection Agency (US EPA). Terms & Acronyms. https://sor.epa.gov/sor_internet/registry/termreg/searchandretrieve/termsandacronyms/search.do?search=&term=surfactant&matchCriteria=Contains&checkedAcronym=true&checkedTerm=true&hasDefinitions=false#:~:text=agent%20that%20cleans.-,Definition%201%3A%20Surface%20active%20agent%20used%20in%20detergents%20to%20cause,Fracturing%20on%20Drinking%20Water%20Resources

present in other products used for cleaning equipment. They can indicate direct connections between residential and/or commercial wastewater and surface water.

Table 4 and Map 5 below show results for Surfactants.

SURFACTANTS 2023-2024

Site ID	Waterbody	Min	Mean	Median	Max	Count	8/29/2023	9/11/2023	11/17/2023	4/15/2024	5/8/2024
TH1	Town Hall 1	0.22	0.69	0.25	2.48	5	2.48	0.22	0.25	0.25	0.25
ETEBOT1	East Trib East Branch OT 1	0.25	1.19	1.00	2.5	4	2.5	0.5		0.25	1.5
ETEBUSMS	East Trib East Branch US Mechanic St	0	0.75	0.25	2.5	4	2.5	0	0.25	0.25	
ETWB	East Trib West Branch	0	0.69	0.13	2.5	4	2.5	0	0	0.25	
WTEBDSCF	West Trib East Branch DS CF	0	0.51	0.25	2.05	5	2.05	0	0	0.25	0.25
WTEBM	West Trib East Branch Monte's	0	0.57	0.25	1.78	4	1.78	0	0.25	0.25	
WTEBOT1	West Trib East Branch OT 1	0.25	0.57	0.50	1.11	5	1.11	0.25	0.5	0.25	0.75
WTEBOT2	West Trib East Branch OT 2	0	0.36	0.34	0.75	4		0	0.42	0.25	0.75
WTEBUSCF	West Trib East Branch US CF	0	0.55	0.00	2.5	5	2.5	0	0	0.25	0
WTWBOT1	West Trib West Branch OT 1	0	0.60	0.25	2.5	5	2.5	0	0.25	0.25	0
ETEBDSMS	East Trib East Branch DS MS	0.25	0.25	0.25	0.25	1		0.25			
ETDSLB	East Trib Downstream Lavelle Bridge	0	0.13	0.13	0.25	2				0.25	0

Table 4: Surfactants results for each sample site, and each sampling date. Minimum/Mean/Median/Max summarizes data for all dates. Values shown in red indicate sample sites and dates where surfactant values exceeded the threshold of 1 part per million (ppm) in freshwater systems[5]. Grey cells indicate missing data. Lack of Outfall data on 8/29/2023 and 11/17/2023 was due to no water present in dry conditions. Blue cells indicate a wet sample.

Surfactant levels were consistently above the .1 ppm threshold. On 8/29/23 and 4/14/25 all sites sampled measured above the .1 ppm threshold. The mean (average) results for every site are above the threshold. 8/29/23 sampling had the highest surfactant levels across all sites, ranging from .25 to 2.5 ppm. 8/29/23 dry sampling was conducted after a period of dry weather, potentially indicating a lack of dilution from stormwater outfalls and therefore a concentration of pollutants. Similarly, higher water levels after a period of rain or snow melt could have increased pollutant levels from stormwater or high-level overflow from failing septic systems.

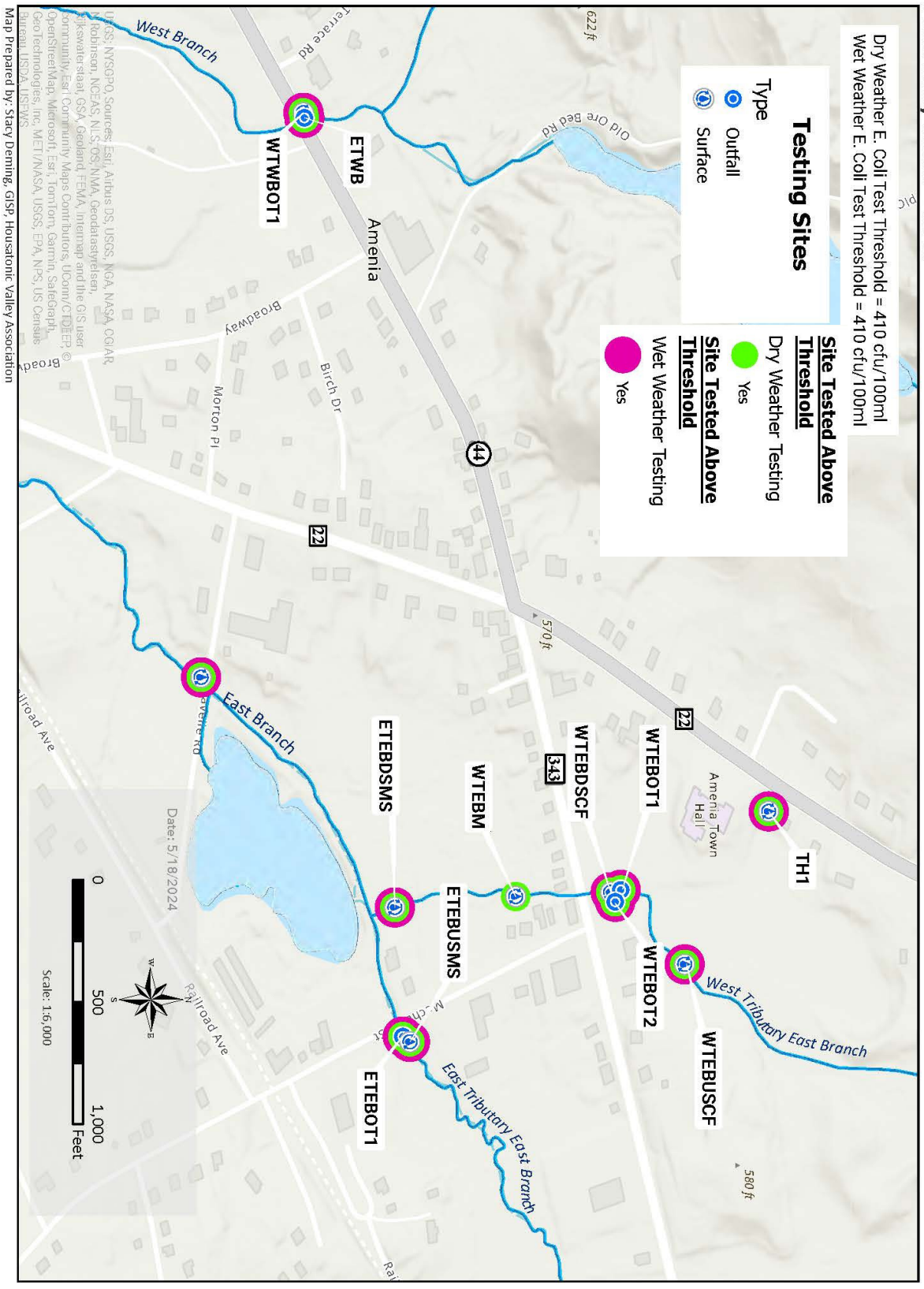
- ETWB tied for the highest surfactant level across all sites and dates on 8/29/23, measuring 2.5 ppm. Surfactants measured .25 ppm on 4/15/23. Surfactants were not measured at ETWB on 5/8/24.
- 2.5 ppm surfactants were also found at WTEBUSCF on 8/29/23. During the 4/15/24 wet sampling event surfactants measured .25 ppm.
- The 8/29/23 sample from ETEBUSMS also found surfactants at 2.5 ppm. Surfactants measured .25 ppm during both the 11/17/23 dry sampling event; and 4/15/24 wet sampling event. Surfactants were not measured at ETEBUSMS on 5/8/24.
- The ambient monitoring site with the next highest surfactant level on 8/29/23 was TH1, measuring 2.48 ppm during the dry sampling event. During the wet sampling on 9/11/23, surfactants measured .22 ppm. Surfactants measured .25 on all following sampling events.

[5] US EPA. "Safer Choice Criteria for Surfactants." 2023. https://www.epa.gov/saferchoice/safer-choice-criteria-surfactants

- On 8/29/23 at WTEBDSCF, surfactants measured 2.05 ppm. During the two wet sampling events in 2024 (4/15/24 and 5/8/24), surfactants measured .25 ppm on both dates.
- At WTEBM, surfactants on 8/29/23 measured 1.78 ppm. On 11/17/23 and 4/15/24, surfactants measured .25 ppm. Surfactants were not measured at WTEBM on 5/8/24.
- ETDSLB was added as a sample site in 2024 for its proximity to a well that supplies drinking water to the Amenia Water District located at 38 Lavelle Rd. This sample site is located West of the well, and downstream of where Lavelle Rd. crosses East Branch. On 4/15/24, .25 ppm surfactants were found at ETDSLB.

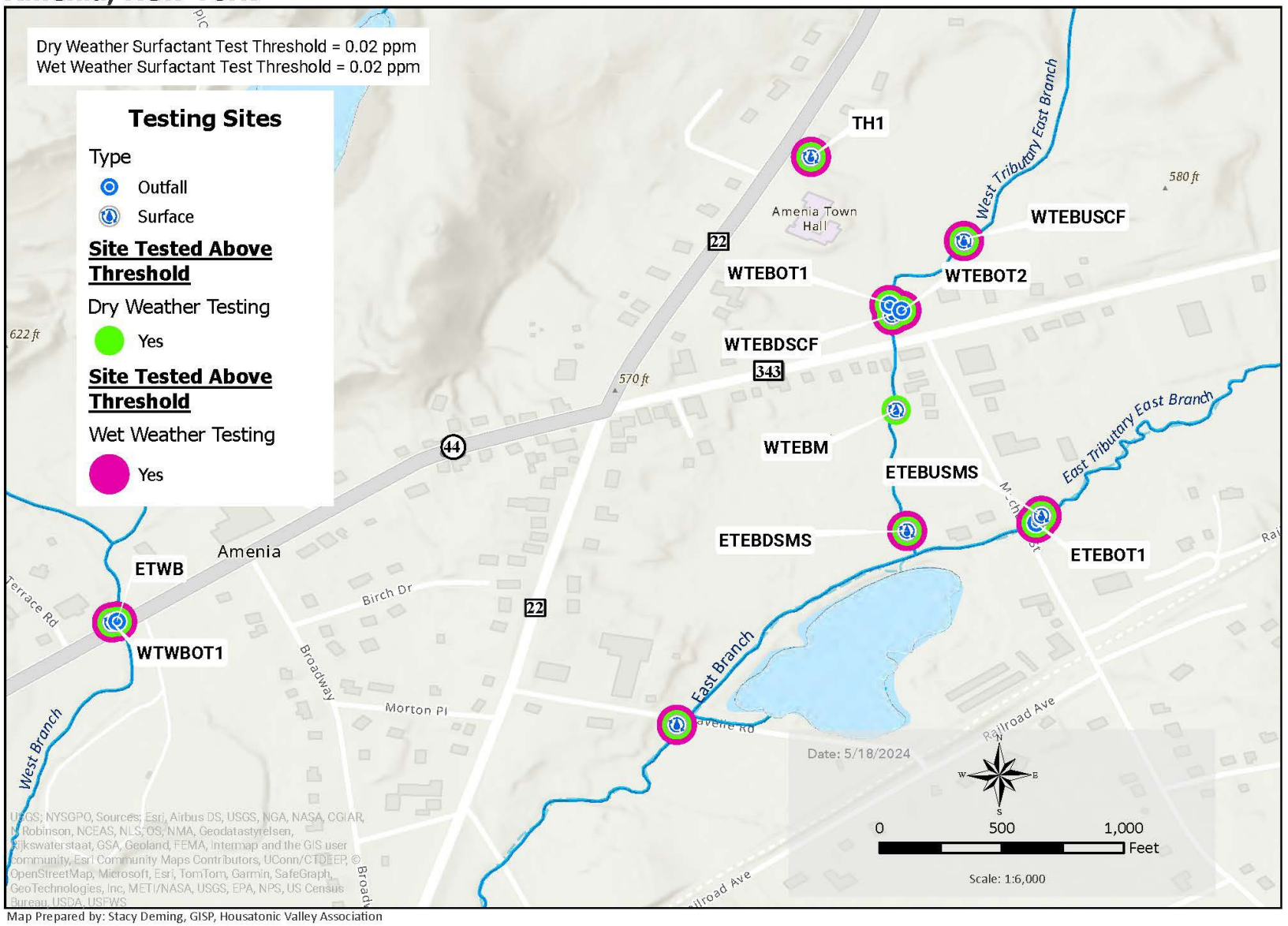
d. Surfactants – Outfall Sampling Results

- On 8/29/23, WTWBOT1 tied for the highest surfactant level across all dates and sample sites, measuring 2.5 ppm. On 11/17/23 and 4/15/24 surfactants measured .25 ppm.
- ETEBOT1 also measured 2.5 ppm surfactants on 8/29/23. 9/11/23 sample measured .5 ppm. No sample was taken at ETEBOT1 on 11/17/23 due to no flow. On 4/15/23, .25 ppm were found. The 5/8/24 sample at ETEBOT1 measured 1.5 ppm, the highest reading since 8/29/23.
- WTEBOT1 measured 1.11 ppm surfactants on 8/29/23; .25 ppm on 9/11/23; .5 ppm on 11/17/23; .25 on 4/15/24; and .75 ppm on 5/8/24.
- WTEBOT2 was dry on 8/29/23 and therefore not sampled. .42ppm surfactants were found on 11/17/23. On 4/15/24, surfactants measured .25 ppm at WTEBOT2. On 5/8/24 surfactants measured .75 ppm.



Map 4: Water Quality Testing Sites - E. coli *Testing Results*

Map 5: Water Quality Testing Sites - Surfactant Testing Results
Amenia, New York



Map Prepared by: Stacy Deming, GISP, Housatonic Valley Association

Map 5: Water Quality Testing Sites - Surfactant Testing Results

VI. Conclusion

Results indicate that septic failures confirmed by the Town of Amenia are contributing to elevated pollutant loads at the sites analyzed through this Study, and that surface water bodies within the Hamlet are impacted. Surfactant and *E. coli* data suggests that sanitary wastewater is entering surface water from adjacent land use, including but not limited to failing septic systems. Surfactants in particular are not present at the amounts detected through this Study in natural systems. Creation of a community wastewater treatment system would reduce pollutant loading.

Recommendations/Next Steps:

- Ambient sites, particularly those downstream of residential and commercial properties had consistently high levels of both *E. coli* and surfactants. A community wastewater treatment system serving these areas would lead to lower pollutant loading in the Hamlet and downstream waters.
- Stormwater outfalls had consistently high levels of both *E. coli* and surfactants. The presence of elevated *E. coli* and surfactant levels in storm sewer effluent can indicate direct connections with household and/or commercial wastewater, and stormwater infrastructure. In addition to the creation of a wastewater district and treatment system, we recommend further investigation of pollutant sources arising in the storm sewer system. Storm sewers are intended to exclusively drain stormwater from impervious surfaces. Outfall sampling results indicate that the storm sewer system may be collecting water from sources other than stormwater. **Note that additional analysis of potential stormwater system failures should not delay progress on a community wastewater treatment system, which will lead to immediate reductions in pollutant loads to waters in the Hamlet and downstream.** HVA is available to assist with future assessment and investigation of the storm sewer system draining to the locations sampled during this Study.
- HVA will upload all data collected to the Water Quality Exchange (WQX) [6]. Submitting data to EPA through WQX makes data readily available to the public and to resource managers including the New York Department of Environmental Conservation (NY DEC). Doing so enables data to inform the NY DEC Assessment and Listing Program as they prioritize water quality monitoring, assessment, and listing efforts throughout New York State.
- HVA will continue to work with the Town, local partners, and state agencies to identify funding opportunities that can support the Town of Amenia's efforts to fund a municipal wastewater district and community wastewater treatment facility.

[6] US EPA. "Water Quality Data." 2023. https://www.epa.gov/waterdata/water-quality-data

Our contact information is included below. Please don't hesitate to contact us if you'd like to discuss the results of this study in more detail.

Respectfully submitted,

Claire Wegh
Ten Mile River Watershed Manager
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Watershed Conservation Director
Office: 860-672-6678 ext. 109
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VII. Appendix

A. Additional Data

i. *Ammonia*

AMMONIA 2023-2024

Site ID	Waterbody	Min	Mean	Median	Max	Count	8/29/2023	9/11/2023	11/17/2023	4/15/2024	5/8/2024
TH1	Town Hall 1	0.25	0.35	0.25	0.5	5	0.25	0.5	0.25	0.5	0.25
ETEBOT1	East Trib East Branch OT 1	0.25	0.25	0.25	0.25	4	0.25	0.25		0.25	0.25
ETEBUSMS	East Trib East Branch US Mechanic St	0.00	0.08	0.00	0.25	5	0	0.25	0.13	0	0
ETWB	East Trib West Branch	0.00	0.11	0.07	0.25	5	0.25	0	0.07	0.25	0
WTEBDSCF	West Trib East Branch DS CF	0.00	0.19	0.25	0.25	4	0	0.25	0.25	0.25	
WTEBM	West Trib East Branch Monte's	0.00	0.17	0.25	0.25	5	0.25	0.25	0.12	0.25	0
WTEBOT1	West Trib East Branch OT 1	0.00	0.10	0.00	0.25	5	0	0	0.25	0	0.25
WTEBOT2	West Trib East Branch OT 2	0.25	0.25	0.25	0.25	4		0.25	0.25	0.25	0.25
WTEBUSCF	West Trib East Branch US CF	0.00	0.17	0.25	0.25	5	0	0.25	0.08	0.25	0.25
WTWBOT1	West Trib West Branch OT 1	0.25	0.30	0.25	0.5	5	0.25	0.25	0.25	0.25	0.5
ETEBDSMS	East Trib East Branch DS MS	0.25	0.25	0.25	0.25	1		0.25			
ETDSLB	East Trib Downstream Lavelle Bridge	0.25	0.25	0.25	0.25	2				0.25	0.25

Units: ppm

Table 5: Ammonia Sampling Results. Red values indicate ammonia readings that exceed a benchmark amount at 0.5 ppm. Grey cells indicate missing data. Blue cells indicate a wet sample.

ii. *Chlorine*

CHLORINE 2023-2024

Site ID	Waterbody	Min	Mean	Median	Max	Count	8/29/2023	9/11/2023	11/17/2023	4/15/2024
TH1	Town Hall 1	0	0.78	0.60	1.9	4	0	0.4	0.8	1.9
ETEBOT1	East Trib East Branch OT 1	0.08	0.36	0.40	0.6	3	0.4	0.6		0.08
ETEBUSMS	East Trib East Branch US Mechanic St	0.05	0.15	0.10	0.3	3	0.1	0.3		0.05
ETWB	East Trib West Branch	0.1	0.91	0.47	2.6	4	0.1	0.2	2.6	0.74
WTEBDSCF	West Trib East Branch DS CF	0	0.45	0.34	1.1	4	0	0.4	1.1	0.28
WTEBM	West Trib East Branch Monte's	0	0.26	0.20	0.62	4	0	0.4	0	0.62
WTEBOT1	West Trib East Branch OT 1	0	0.47	0.25	1.4	4	0	0.4	1.4	0.09
WTEBOT2	West Trib East Branch OT 2	0	0.25	0.30	0.44	3		0.3	0	0.44
WTEBUSCF	West Trib East Branch US CF	0	0.40	0.20	1.2	4	1.2	0.4	0	0
WTWBOT1	West Trib West Branch OT 1	0.1	0.65	0.60	1.3	4	0.1	1.3	0.3	0.89
ETEBDSMS	East Trib East Branch DS MS	0.3	0.30	0.30	0.3	1		0.3		
ETDSLB	East Trib Downstream Lavelle Bridge	0.12	0.12	0.12	0.12	1				0.12

Units: ppt

Table 6: Chlorine Sampling Results. Red values indicate chlorine levels greater than a threshold level of 0.02 mg/L. Grey cells indicate missing data. Blue cells indicate a wet sample. Samples frequently exceeded this threshold level and thus the averages exceeded this value as well. No chlorine measurements were taken 5/8/24.

iii. *Nitrate/Nitrite*

NITRATE/NITRITE 2023

Site ID	Min	Mean	Median	Max	Count	8/29/2023	9/11/2023	11/17/2023	4/15/2024
TH1	0.21	0.21	0.21	0.21	2		0.21		0.21
ETEBOT1	0.41	0.585	0.585	0.76	2		0.41		0.76
ETEBUSMS	0.22	0.335	0.335	0.45	2		0.22		0.45
ETWB	0.074	0.074	0.074	0.074	1		0.074		
WTEBDSCF	0.082	0.321	0.321	0.56	2		0.082		0.56
WTEBM	0.05	0.285	0.285	0.52	2		0.05		0.52
WTEBOT1	0.41	0.51	0.51	0.61	2		0.41		0.61
WTEBOT2	0.06	0.295	0.295	0.53	2		0.06		0.53
WTEBUSCF	0.05	0.315	0.315	0.58	2		0.05		0.58
WTWBOT1	0.34	0.38	0.38	0.42	2		0.42		0.34
ETEBDSMS	0.05	0.05	0.05	0.05	1		0.05		
ETDSLB	0.46	0.46	0.46	0.46	1				0.46

Units: mg/L

Table 7: Nitrate / Nitrite Sampling Results. Samples did not exceed the threshold level of 1 mg/L level and thus the averages did not exceed this value. Gray cells indicate missing data. Blue cells indicate a wet sample. No Nitrate/ Nitrite measurements were taken 5/8/24.

iv. *Phosphorus*

PHOSPHORUS 2023-2024

Site ID	Min	Max	Count	8/29/2023	9/11/2023	11/17/2023	4/15/2024
TH1	0.067	0.31	1		0.31		0.067
ETEBOT1	0.25	0.28	1		0.28		0.25
ETEBUSMS	0.024	0.024	1		0		0.024
ETWB	0	0	1		0		
WTEBDSCF	0.043	0.043	1		0		0.043
WTEBM	0.028	0.2	1		0.2		0.028
WTEBOT1	0.033	0.1	1		0.1		0.033
WTEBOT2	0.028	0.11	1		0.11		0.028
WTEBUSCF	0.024	0.12	1		0.12		0.024
WTWBOT1	0.04	0.11	1		0.11		0.04
ETDSLB	0.026	0.026					0.026
ETEBDSMS	0	0.38	1		0.38		

Units: mg/L

Table 8: Phosphorus Sampling Results. Gray cells indicate missing data. Blue cells indicate a wet sample. No Phosphorus measurements were taken 5/8/24.

v. *Conductivity*

CONDUCTIVITY 2023-2024

Site ID	Waterbody	Min	Mean	Median	Max	Count	8/29/2023	9/11/2023	11/17/2023	4/15/2024	5/8/2024
TH1	Town Hall 1	423.8	732.28	658.20	1269	5	808.0	502.4	658.2	1269.0	423.8
ETEBOT1	East Trib East Branch OT 1	123.5	406.25	432.75	636	4	547.0	123.5		636.0	318.5
ETEBUSMS	East Trib East Branch US Mechanic St	370	427.84	449.00	482.1	5	482.1	449.0	457.9	380.2	370.0
ETWB	East Trib West Branch	86.9	126.36	129.00	161.2	5	158.0	161.2	129.0	86.9	96.7
WTEBDSCF	West Trib East Branch DS CF	179	330.78	350.40	440	5	429.7	440.0	350.4	179.0	254.8
WTEBM	West Trib East Branch Monte's	180.9	396.90	361.30	746.8	5	746.8	449.4	361.3	180.9	246.1
WTEBOT1	West Trib East Branch OT 1	378.9	974.58	1035.00	1297	5	1252.0	910.0	1297.0	1035.0	378.9
WTEBOT2	West Trib East Branch OT 2	375.2	841.38	866.15	1258	4		526.3	1258.0	1206.0	375.2
WTEBUSCF	West Trib East Branch US CF	158.6	306.18	333.20	412.5	5	412.5	406.5	333.2	158.6	220.1
WTWBOT1	West Trib West Branch OT 1	60.5	69.88	68.90	81.2	4	73.2		81.2	60.5	64.6
ETEBDSMS	East Trib East Branch DS MS	670	670.00	670.00	670	1		670.0			
ETDSLB	East Trib Downstream Lavelle Bridge	311.3	350.65	350.65	390	2				311.3	390.0

Units: us/cm

Table 9: Conductivity Sampling Results. The EPA threshold standard for Conductivity in freshwater is 2000 us/cm. Red values indicate conductivity measurements above 1,000 us/cm, the EPA standard for drinking water. Grey cells indicate missing data. Blue cells indicate a wet sample.

vi. *Salinity*

SALINITY 2023-2024

Site ID	Waterbody	Min	Mean	Median	Max	Count	8/29/2023	9/11/2023	11/17/2023	4/15/2024	5/8/2024
TH1	Town Hall 1	0.2	0.36	0.32	0.64	5	0.4	0.24	0.32	0.64	0.2
ETEBOT1	East Trib East Branch OT 1	0.06	0.20	0.205	0.31	4	0.26	0.06		0.31	0.15
ETEBUSMS	East Trib East Branch US Mechanic St	0.18	0.21	0.22	0.23	5	0.23	0.22	0.22	0.18	0.18
ETWB	East Trib West Branch	0.04	0.06	0.06	0.08	5	0.07	0.08	0.06	**0.04**	0.05
WTEBDSCF	West Trib East Branch DS CF	0.08	0.16	0.17	0.21	5	0.21	0.21	0.17	**0.08**	0.12
WTEBM	West Trib East Branch Monte's	0	0.12	0.12	0.22	5	0	0.22	0.17	**0.09**	0.12
WTEBOT1	West Trib East Branch OT 1	0.19	0.48	0.51	0.65	5	0.62	0.45	0.65	0.51	0.19
WTEBOT2	West Trib East Branch OT 2	0.18	0.42	0.425	0.64	4		0.25	0.64	0.6	0.18
WTEBUSCF	West Trib East Branch US CF	0.08	0.15	0.16	0.2	5	0.2	0.2	0.16	**0.08**	0.1
WTWBOT1	West Trib West Branch OT 1	0.03	0.03	0.03	0.04	4	0.03		0.04	**0.03**	**0.03**
ETDSLB	East Trib DS Lavelle Bridge	0.15	0.17	0.17	0.19	2				0.15	0.19
ETEBDSMS	East Trib East Branch DS MS	0.33	0.33	0.33	0.33	1		0.33			

Units: ppt

Table 10: Salinity Sampling Results. A range of 0.10 ppt and 0.40 ppt is normal for freshwater systems. Red values indicate salinity measurements above .40ppt. Bolded measurements indicate values below 0.10ppt. Gray cells indicate missing data.

vii. *Temperature*

TEMPERATURE 2023-2024

Site ID	Waterbody	Min	Mean	Median	Max	Count	8/29/2023	9/11/2023	11/17/2023	4/15/2024	5/8/2024
TH1	Town Hall 1	5.4	12.94	13.4	19.5	5	18.5	19.5	5.4	7.9	13.4
ETEBOT1	East Trib East Branch OT 1	12.2	17.95	18.8	22	4	21.7	22		12.2	15.9
ETEBUSMS	East Trib East Branch US Mechanic St	7.6	14.12	14	19.8	5	19.8	19.5	7.6	9.7	14
ETWB	East Trib West Branch	10.1	13.60	14.8	16.8	5	15.3	16.8	11	10.1	14.8
WTEBDSCF	West Trib East Branch DS CF	6.4	11.62	10.9	17.5	5	16.3	17.5	6.4	7	10.9
WTEBM	West Trib East Branch Monte's	9.3	14.56	13.3	19.8	5	19.8	18	9.3	13.3	12.4
WTEBOT1	West Trib East Branch OT 1	9.4	15.40	13.3	21.9	5	21.9	21.2	11.2	9.4	13.3
WTEBOT2	West Trib East Branch OT 2	8.4	12.90	11.5	20.2	4		20.2	8.4	9.1	13.9
WTEBUSCF	West Trib East Branch US CF	8.1	12.90	11.9	18.4	5	17.3	18.4	8.8	8.1	11.9
WTWBOT1	West Trib West Branch OT 1	8.3	12.00	12.95	13.8	4	13.8		12.2	8.3	13.7
ETDSLB	East Trib DS Lavelle Bridge	9.4	12.30	12.3	15.2	2				9.4	15.2
ETEBDSMS	East Trib East Branch DS MS	21.5	21.50	21.5	21.5	1		21.5			

Units: Degrees Celsius

Table 11: Temperature. Temperatures ranged from 5.4 at Town Hall 1 on 11/17/23; to 21.9 at West Tributary East Branch Outfall 1 on 8/29/23. Variation in temperature was most likely a result of the unique characteristics of the sampling site, as well as ambient temperature changes throughout the day.

viii. *pH*

pH 2023-2024											
Site ID	**Waterbody**	**Min**	**Mean**	**Median**	**Max**	**Count**	**8/29/2023**	**9/11/2023**	**11/17/2023**	**4/15/2024**	**5/8/2024**
TH1	Town Hall 1	7.32	7.39	7.4	7.42	5	7.38	7.32	7.42	7.4	7.42
ETEBOT1	East Trib East Branch OT 1	7.84	8.13	8.06	8.56	4	8.56	8.14		7.84	7.98
ETEBUSMS	East Trib East Branch US Mechanic St	7.85	7.95	7.95	8.06	5	7.89	7.85	7.95	8.06	8
ETWB	East Trib West Branch	6.95	7.31	7.2	7.75	5	6.95	7.08	7.2	7.55	7.75
WTEBDSCF	West Trib East Branch DS CF	7.57	7.75	7.74	7.99	5	7.66	7.57	7.78	7.99	7.74
WTEBM	West Trib East Branch Monte's	7.3	7.70	7.79	8.03	5	7.3	7.57	7.82	8.03	7.79
WTEBOT1	West Trib East Branch OT 1	7.57	7.78	7.69	8.03	5	8.03	7.57	7.98	7.69	7.64
WTEBOT2	West Trib East Branch OT 2	7.23	7.55	7.49	7.97	4		7.23	7.97	7.48	7.5
WTEBUSCF	West Trib East Branch US CF	7.47	7.69	7.6	8.04	5	7.47	7.52	7.6	8.04	7.8
WTWBOT1	West Trib West Branch OT 1	6.78	7.21	7.28	7.48	4	6.78		7.19	7.37	7.48
ETDSLB	East Trib DS Lavelle Bridge	7.83	8.01	8.005	8.18	2				7.83	8.18
ETEBDSMS	East Trib East Branch DS MS	6.93	6.93	6.93	6.93	1		6.93			

Units: pH units

Table 12: pH Results. pH was within the normal range (6.5-9) throughout. Higher pH could be the result of limestone bedrock leaching into groundwater. Lower pH could be the result of acid rain or stormwater runoff. Grey cells indicate missing data.

B. Photos

i. Town Hall 1

Photo 1: Sample Site Town Hall 1 (TH1) on 9/11/23

Photo 2: 9/11/23 Upstream View from TH1.

Photo 3: 9/11/23 Downstream View from TH1.

Photo 4: 11/17/23 TH1

Photo 5: 11/17/23 TH1 Upstream View

Photo 6: 11/17/23 TH1 Downstream View

Photo 7: 4/15/24 TH1

Photo 4: 4/15/24 TH1 Upstream View. Rte. 22 visible.

Photo 5: 4/15/24 TH1 Downstream View. Residential property to the left, Town Hall to the right.

Photo 6: 5/8/24 TH1 Downstream View

Photo 7: 5/8/24 TH1 Upstream View

ii. West Tributary East Branch Upstream Cumberland Farms (WTEBUSCF)

Photo 8: 9/11/23 WTEBUSCF Sample Site

Photo 13: 4/15/24 WTEBUSCF Upstream View

Photo 14: 5/8/24 WTEBUSCF

Photo 15: 4/15/24 WTEBUSCF Downstream View. Cumberland Farms roof visible top left.

iii. West Tributary East Branch Downstream Cumberland Farms, with Outfalls 1 and 2 (WTEBDSCF; WTEBOT1; WTEBOT2)

Photo 16: WTEBDSCF on 4/15/24, facing upstream. WTEBOT1 visible on the left.

Photo 17: ETWBOT1 on 9/11/23

Photo 18: 4/15/24 WTEB Downstream View, flowing South underneath Rte. 343 downstream of Cumberland Farms.

Photo 19: 4/15 ETWBOT1. Rte. 343 on the left. Stream flows right to left.

Photo 20: ETWBOT1 on 11/17/23

Photo 21: ETWBOT2 on 11/17/23. ETWBOT2 appears to drain from underneath Cumberland Farms.

Photo 22: ETWBOT1 on 5/8/24

Photo 23: ETWBDSCF on 5/8/24, facing upstream

Photo 24: ETWBOT2 on 5/8/24. Cumberland Farms visible in background. Water from ETWBOT2 was cloudy.

Photo 25: ETWBOT2 on 5/8/24.

Photo 26: 11/17/23 Growth on rocks around WTEBDSCF

Photo 27: ETWBDSCF on 4/15/24. Downstream View. ETWBOT1 visible. Stadia rod for scale. Rte. 343 above downstream crossing structure.

Photo 28: ETWBOT2 on 4/15/24. Stadia rod for scale.

Photo 29: ETWBOT2 on 4/15/24

iv. West Trib East Branch Monte's (WTEBM)

Photo 30: WTEBM on 8/29/23

Photo 31: WTEBM on 9/11/23, facing upstream

Photo 32: WTEBM on 4/15/24

Photo 33: WTEBM on 4/15/24, facing downstream

Photo 34: WTEBM on 4/15/24, facing upstream

Photo 35: WTEBM on 5/8/24, facing upstream

Photo 36: WTEBM on 5/8/24

v. East Trib East Branch Upstream Mechanic Street, with Outfall (ETEBUSMS and ETEBOT1)

Photo 37: ETEBUSMS on 9/11/23, facing upstream

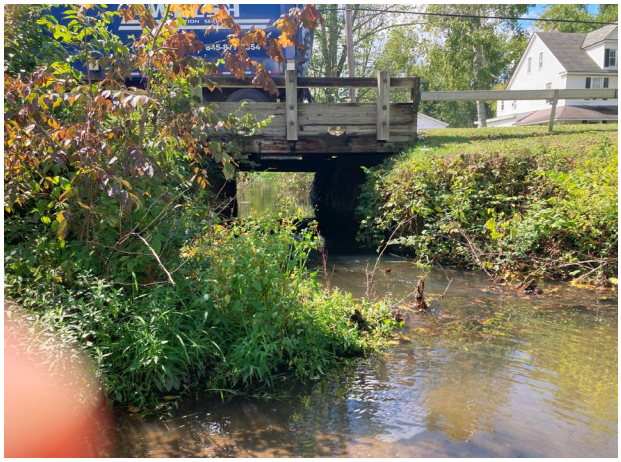


Photo 38: Downstream of ETEBUSMS on 9/11/23, view of Mechanic Street bridge

Photo 9: ETEBUSMS and downstream on 4/15/24, view of Mechanic Street bridae

Photo 10: ETEBUSMS on 4/15/24, ETEBOT1 visible on the left

Photo 41: ETEBUSMS on 4/15/24 facing upstream

Photo 42: ETEBOT1 on 4/15/24

Photo 43: ETEBUSMS on 5/8/24 facing upstream

Photo 44: ETEBUSMS on 5/8/24

v. East Trib Downstream Lavelle Bridge (ETDSLB)

Photo 45: East Trib Downstream Lavelle Bridge, facing downstream, on 4/15/24. Bridge guardrail in foreground.

Photo 46: ETDSLB on 4/15/24. Upstream of Lavelle St. Bridge

Photo 47: ETDSLB on 4/15/24, facing East

Photo 48: ETDSLB on 5/8/24, facing West.

Photo 49: ETDSLB on 5/8/24. Upstream view from under Lavelle Street.

Photo 50: ETDSLB on 5/8/24, facing downstream.

vi. East Trib West Branch and Outfall (ETWB and WTWBOT1)

Photo 51: ETWB on 4/15/24. View from Rte. 44 facing East.

Photo 52: ETWB on 4/15/24. Downstream view. Outfall visible bottom right.

Photo 53: WTWBOT1 on 4/15/24. Stadia rod for scale. Torrco Plumbing Supply visible in background.

C. Laboratory Reports

i. Harbor Watch Report: 8/29/23

Technical Report

prepared for:

Housatonic Valley Association Inc

150 Kent Rd S

Cornwall Bridge, CT 06754

Attention: Claire Wegh

Report Date: 08/31/2023

Project Name: Amenia Water Quality

CT Cert. No. PH-0262 10 Woodside Ln (203) 557-4400

Westport, CT 06880

Results:

Table 1. Results of indicator bacteria *E. coli*.

Site Name	Date	*E. coli* (MPN/100 mL)	QC done	Pass QC Test?
West Trib_East Branch	8/29/2023	72.27		
West Trib_West Branch	8/29/2023	35.92		
West Trib_East Branch_Montes	8/29/2023	125.91		
East Trib_East Branch_OT1	8/29/2023	42.84		
West Branch_East Trib_OT1	8/29/2023	68.28		
East Trib_WB_DS_Cumb Farms	8/29/2023	198.9		
East Trib_East Branch_US_Mechanics Street	8/29/2023	686.67		
East Trib_West Branch_US_Cumb Farms	8/29/2023	193.49		
West Trib_East Branch_Montes (Duplicate)	8/29/2023	90.86		
East Trib_West Branch_DS (Blank)	8/29/2023	<1		
Townhall 1	8/29/2023	61.27	Replicate	Pass

Chain of Custody:

Chain of Custody for Bacteria Sampling
Harbor Watch
10 Woodside Lane, Westport, CT 06880

HARBOR WATCH

Turnaround Time (circle): 7 days (standard fee) [circled] | 2 day (25% surcharge)

Company	HVA	Data contact	Claire Welsh	Billing contact
Project name	America Water Quality	Phone	646 5966471	Phone
Address	150 Kent Road S. Cornwall Brooks, CT	Email	cwelsh@hvatoday.org	Email

Sample Transfer (sign below) — temp Blank @ 5°C

Relinquished by: (print/sign) Noah Aikert	Date: 8/29/23 Time: [illegible]	Relinquished by: (print/sign)	Date: Time:
Received by: (print/sign) Kasey Burns	Date: 8/29/23 Time: 1402	Received by: (print/sign)	Date: Time:

Sample ID	Collection Date	Collection Time	Water Matrix (key below)	Dilution suggestion[2]	Total coliform	Fecal coliform	*Escherichia coli*	Enterococci
1. WestTrib_EastBranch	8/29	12:10	FW	100mL	✓		✓	
2. WestTrib – WestBranch		12:10	FW	100mL	✓		✓	
3. WestTrib – EastBranch – Montes		11:44	FW	100mL	✓		✓	
4. EastTrib_EastBranch – OT1		11:57	FW	100mL	✓		✓	
5. WestBranch_EastTrib_OT1		10:30	FW	100mL	✓		✓	
6. EastTrib_WB_DS_CumbFarms		11:29	FW	100mL	✓		✓	
7. EastTrib – EastBranch US_Mechanics Street		12:00	FW	100mL	✓		✓	
8. EastTrib_WestBranch_US_CumbFarms		11:06	FW	100mL	✓		✓	
9. WestTrib – EastBranch – Montes (Duplicate)		11:44	FW	100mL	✓		✓	
10. EastTrib_WestBranch_DS (Blank)		11:30	FW	100mL	✓		✓	
11. Townhall 1 (Temp Blank)		9:45	FW	100mL	✓		✓	
12. Townhall 1	↓	9:45	FW	100mL	✓		✓	
13.								
14.								
15.								

Water matrix: FW = Freshwater; SW = Saltwater; BW = Brackish water

[1] Check each parameter you would like results reported. Fecal coliform requires prior notice to acquire supplies and may include an increase in cost per sample.

[2] Samples will be processed for *E. coli* at 100 mL (reporting limit 2,419.6/100 mL) unless further dilution is specified. Brackish/saltwater Enterococci samples *must* be processed at 10 mL (reporting limit 24,196/100 mL). Multiple dilutions for each sample are allowed, but each dilution will be charged as individual samples.

General Notes

- This report contains the data for the samples collected by Harbor Watch.
- All analyses were conducted and met standard operating procedure (SOP) requirements and were conducted utilizing appropriate Standard Methods.
- Freshwater is processed for *E. coli* and brackish/saltwater is processed for Enterococci.
- Results reported are adjusted for any dilution.
- Any unused sample is disposed of immediately after use.
- Laboratory analyses were conducted at Earthplace Laboratory, 10 Woodside Ln. Westport, CT 06880.

Acronym/Terms

- SW - saltwater
- QC - quality control
- Dupe - field duplicate
- FTB - field trip blank
- ppm - parts per million
- FW - freshwater
- DI - deionized water
- Rep - laboratory replicate
- mg/L - milligrams per liter
- uS/cm - microsiemens per centimeter
- MPN/100 mL - most probable number per 100 mL (this is a unit of measurement for bacteria concentrations based on statistics rather than direct counts of specific colonies)
- n/a - indicates that results for a sample were unable to quantified due to field or lab impediments
- > - indicates that the results exceeded the maximum reporting limit
- < - indicated that the results were less than the minimum reporting limit

Approved By:

Kasey Burns

Laboratory Manager

Please contact Harbor Watch at 203.557.8464 with any questions regarding this report.

CT Cert. No. PH-0262 10 Woodside Ln (203) 557-4400
Westport, CT 06880

ii. Pace Analytical Services Reports: 9/11/23-5/8/24

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

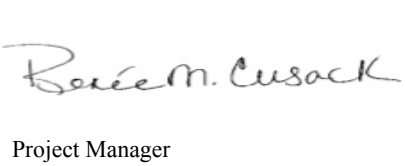
September 25, 2023

Claire Wegh
nb-Housatonic Valley Association
150 Kent Rd. South
Cornwall Bridge, CT 06754

Project Location:
Project Number: HVA_Amenia, NY
Laboratory Work Order Number: 23I1146

Enclosed are results of analyses for samples received by the laboratory on September 11, 2023. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Project Manager

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

nb-Housatonic Valley Association
150 Kent Rd. South
Cornwall Bridge, CT 06754
ATTN: Claire Wegh

REPORT DATE: 9/25/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: HVA_Amenia, NY

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 23I1146

The results of analyses performed on the following samples submitted to Pace Analytical Services, LLC - Newburgh are found in this report.

PROJECT LOCATION:

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
TH1	23I1146-01	Water		353.2 Rev 2.0 EPA 351.2 Rev.2 EPA 365.3 1978 SM21-23 9223B varies	
ETWBOT2	23I1146-02	Water		353.2 Rev 2.0 EPA 351.2 Rev.2 EPA 365.3 1978 SM21-23 9223B varies	
ETWBDSCF	23I1146-03	Water		353.2 Rev 2.0 EPA 351.2 Rev.2 EPA 365.3 1978 SM21-23 9223B varies	
ETWBOT1	23I1146-04	Water		353.2 Rev 2.0 EPA 351.2 Rev.2 EPA 365.3 1978 SM21-23 9223B varies	
ETWBUSCF	23I1146-05	Water		353.2 Rev 2.0 EPA 351.2 Rev.2 EPA 365.3 1978 SM21-23 9223B varies	
ETWB	23I1146-06	Water		353.2 Rev 2.0 EPA 351.2 Rev.2 EPA 365.3 1978 SM21-23 9223B varies	
ETWBM	23I1146-07	Water		353.2 Rev 2.0 EPA 351.2 Rev.2 EPA 365.3 1978 SM21-23 9223B varies	
WTWBUSMS	23I1146-08	Water		353.2 Rev 2.0 EPA 351.2 Rev.2 EPA 365.3 1978 SM21-23 9223B varies	

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

nb-Housatonic Valley Association
150 Kent Rd. South
Cornwall Bridge, CT 06754
ATTN: Claire Wegh

REPORT DATE: 9/25/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: HVA_Amenia, NY

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 23I1146

The results of analyses performed on the following samples submitted to Pace Analytical Services, LLC - Newburgh are found in this report.

PROJECT LOCATION:

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
WTWBOT1	23I1146-09	Water		353.2 Rev 2.0	
				EPA 351.2 Rev.2	
				EPA 365.3 1978	
				SM21-23 9223B	
				varies	
WTEB	23I1146-10	Water		353.2 Rev 2.0	
				EPA 351.2 Rev.2	
				EPA 365.3 1978	
				SM21-23 9223B	
				varies	
WTEBOT1	23I1146-11	Water		353.2 Rev 2.0	
				EPA 351.2 Rev.2	
				EPA 365.3 1978	
				SM21-23 9223B	
				varies	

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SM21-23 9223B

Qualifications:

Z-01

Greater than >

Analyte & Samples(s) Qualified:

Escherichia Coli
23I1146-02[ETWBOT2], 23I1146-09[WTWBOT1]

The results of analyses reported only relate to samples submitted to the Pace Analytical Services, LLC - Newburgh for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Renee M. Cusack

Renee Cusack
PM

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: TH1 | Sampled: 9/11/2023 10:00

Sample ID: 23I1146-01

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:39	RL
Nitrate/Nitrite as N	0.21	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:06	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:39	RL
Phosphorus, Total	0.31	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	2400	1.0	CFU/100 mL	1		SM21-23 9223B	9/11/23	9/11/23 16:45	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: ETWBOT2 | Sampled: 9/11/2023 10:45

Sample ID: 23I1146-02

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:41	RL
Nitrate/Nitrite as N	0.060	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:08	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:41	RL
Phosphorus, Total	0.11	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	2400	1.0	CFU/100 mL	1	Z-01	SM21-23 9223B	9/11/23	9/11/23 16:45	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: ETWBDSCF | Sampled: 9/11/2023 11:09

Sample ID: 23I1146-03

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:42	RL
Nitrate/Nitrite as N	0.082	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:10	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:42	RL
Phosphorus, Total	ND	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	180	1.0	CFU/100 mL	1		SM21-23 9223B	9/11/23	9/11/23 16:45	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: ETWBOT1 | Sampled: 9/11/2023 11:30

Sample ID: 23I1146-04

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:46	RL
Nitrate/Nitrite as N	0.41	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:16	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:46	RL
Phosphorus, Total	0.10	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	2400	1.0	CFU/100 mL	1		SM21-23 9223B	9/11/23	9/11/23 16:45	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: ETWBUSCF | Sampled: 9/11/2023 12:10

Sample ID: 23I1146-05

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:47	RL
Nitrate/Nitrite as N	ND	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:17	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:47	RL
Phosphorus, Total	0.12	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	190	1.0	CFU/100 mL	1		SM21-23 9223B	9/11/23	9/11/23 16:45	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: ETWB | Sampled: 9/11/2023 13:20

Sample ID: 23I1146-06

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:48	RL
Nitrate/Nitrite as N	ND	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:19	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:48	RL
Phosphorus, Total	0.38	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	650	1.0	CFU/100 mL	1		SM21-23 9223B	9/11/23	9/11/23 16:45	JC

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Project Location: | Sample Description: | Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: ETWBM | Sampled: 9/11/2023 12:50

Sample ID: 23I1146-07

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:49	RL
Nitrate/Nitrite as N	0.12	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:21	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:49	RL
Phosphorus, Total	0.20	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	290	1.0	CFU/100 mL	1		SM21-23 9223B	9/11/23	9/11/23 16:45	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: WTWBUSMS | Sampled: 9/11/2023 13:46

Sample ID: 23I1146-08

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:51	RL
Nitrate/Nitrite as N	0.22	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:23	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:51	RL
Phosphorus, Total	ND	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	370	1.0	CFU/100 mL	1		SM21-23 9223B	9/11/23	9/11/23 16:45	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location:

Sample Description:

Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: WTWBOT1

Sampled: 9/11/2023 14:05

Sample ID: 23I1146-09

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:52	RL
Nitrate/Nitrite as N	0.41	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:25	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:52	RL
Phosphorus, Total	0.28	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	2400	1.0	CFU/100 mL	1	Z-01	SM21-23 9223B	9/11/23	9/11/23 16:45	JC

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Project Location: | Sample Description: | Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: WTEB | Sampled: 9/11/2023 14:20

Sample ID: 23I1146-10

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:53	RL
Nitrate/Nitrite as N	0.074	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:26	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:53	RL
Phosphorus, Total	ND	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	140	1.0	CFU/100 mL	1		SM21-23 9223B	9/11/23	9/11/23 16:45	JC

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Project Location: | Sample Description: | Work Order: 23I1146

Date Received: 9/11/2023

Field Sample #: WTEBOT1 | Sampled: 9/11/2023 14:30

Sample ID: 23I1146-11

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	9/20/23	9/22/23 13:54	RL
Nitrate/Nitrite as N	0.42	0.050	mg/L	1		353.2 Rev 2.0	9/18/23	9/18/23 17:27	KAT
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	9/20/23	9/22/23 13:54	RL
Phosphorus, Total	0.11	0.10	mg/L	1		EPA 365.3 1978	9/12/23	9/12/23 14:00	RL
Escherichia Coli	69	1.0	CFU/100 mL	1		SM21-23 9223B	9/11/23	9/11/23 16:45	JC

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
Z-01	Greater than >

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
353.2 Rev 2.0 in Water	
Nitrate/Nitrite as N	NB-CT,NB-NJ,NB-NY
EPA 351.2 Rev.2 in Water	
Nitrogen, Kjeldahl	NB-CT,NB-NJ,NB-NY
EPA 365.3 1978 in Water	
Phosphorus, Total	NB-CT,NB-NJ,NB-NY
SM21-23 9223B in Water	
Escherichia Coli	NB-CT,NB-NJ,NB-NY

Pace Analytical Services, LCC operates under the following certifications and accreditations:

Code	Description	Number	Expires
NB-CT	Connecticut Department of Public Health	PH-0823	09/30/2024
NB-NJ	New Jersey DEP	NY015 NELAP	06/30/2023
NB-NY	New York State Department of Health	10142 NELAP	04/1/2024

CHAIN OF CUSTODY

Pace® ANALYTICAL SERVICES

Lab Name **PAS - Newburgh** NYS DOH LAB # **10142** NJDEP LAB # **NY105** CT DOPH# **PH-0555**
Lab Address **315 Fullerton Avenue, Newburgh, NY 12550** Phone **(845) 562-0890**
Field Office Address **312 Titusville Rd, Poughkeepsie, NY 12603** Field Office Phone **(845) 229-6536**
Field Office Address **35 Goshen Turnpike, Bloomingburg, NY 12721** Field Office Phone **(845)733-1557**

REPORT# (Lab Use Only): 23I 1146

CLIENT NAME: Housatonic Valley Association
PWS NUMBER:
CLIENT ADDRESS: 150 South Kent Rd., South Cornwall Bridge, CT
CLIENT PHONE1: 845-897-2375 646 5966471
CLIENT (SITE) CONTACT: Claire Wegh
EMAIL(TO SEND REPORT): cwegh@hvatoday.org
P.O. NUMBER/ PROJECT NUMBER:
PROJECT LOCATION: Amenia, NY

PAGE ____ of ____

TURNAROUND TIME (Biz Days) **NON-TESTING CHARGES**
NORMAL _____ P/U ____ SAMP ____
RUSH (Y/N) _____ GRAB ____ COMP ____
RUSH (# Biz Days) _____ REPORTING ____
#OF COOLERS _____ OTHER ____

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	D (Drinking Water) or W (Waste Water) Indicate	SOLID OR SEMISOLID	Chlorine Residual	NUMBER OF CONTAINERS SUBMITTED: Total # of Containers	40mL Vials HCl	Liter Amber HCl	250 Amber Sulfuric	Liter Amber Glass	250 mL Plastic Nitric Acid	250mL Plastic Sulfuric Acid	Liter Plastic	250mL Plastic	250mL Plastic NaOH	40mL Vials Sulfuric	40 mL Glass Plain	125 mL Sterile Na2S2O3	125mL Sterile	Other	Analysis Requested
9/11/23	10:00	TH1						1						1							1		SM9223QT, TKN, N/N, TPO4, TN
9/11/23	10:45	ETWBOT2																					
9/11/23	11:09	ETWBDSCF																					
9/11/23	11:30	ETWBOT1																					
9/11/23	12:10	ETWBVSCF																					
9/11/23	1:20	ETWB																					
9/11/23	12:50	ETWBM						2						2							2		
9/11/23	1:46	WTWBVSMS																					
9/11/23	2:05	WTWBOT1																					
9/11/23	2:20	WTEB																					
9/11/23	2:30	WTEBOT1																					

23I1146

NOTES:

SAMPLED BY: (SIGNATURE)	COMPANY	DATE	TIME	RECEIVED BY: (SIGNATURE)	COMPANY	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	COMPANY HVA	DATE 9/11/23	TIME 3:30	RECEIVED BY: (SIGNATURE)	COMPANY	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	COMPANY	DATE	TIME	RECEIVED BY: (SIGNATURE)	COMPANY	DATE	TIME

RECEIVED FOR PAS-NEWBURGH BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT? YES / NO	COOLER TEMP	PAS NEWBURGH REMARKS: ICE (Y/N) pH/Preservation Check
	9/14/23	1530		6.0-1	

Sample Condition Upon Receipt Form (SCUR)

Project # 23I 1146

Client: Housatonic Valley Association

Date and Initials of person:
Examining contents: EC
Label: EC
Deliver to location: EC
pH: EC

Thermometer Used: IRG4 Date: 9/11 Time: 1530 Initials: EC

State of Origin: NY

Cooler #1 Temp.°C 10.1 **(Visual)** .2 **(Correction Factor)** 10.3 **(Actual)** ☑ Samples on ice, cooling process has begun

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace ☐ Other

Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ Other

Tracking #

Custody Seal on Cooler/Box Present: ☐ Yes ☐ No **Seals intact:** ☐ Yes ☐ No **Ice:** (Wet) Blue Melted None

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Samples were collected by Pace employee ☐ Yes ☐ No ☐ N/A

		Comments:
Chain of Custody Present	☑Yes ☐ No ☐ N/A	
Chain of Custody Filled Out	☑Yes ☐ No ☐ N/A	
Relinquished Signature on COC	☑Yes ☐ No ☐ N/A	
Sampler Name and Signature on COC	☑Yes ☐ No ☐ N/A	
Samples Arrived within Hold Time	☑Yes ☐ No ☐ N/A	
Rush TAT requested on COC	☐Yes ☐ No ☐ N/A	
Sufficient Volume	☐Yes ☐ No ☐ N/A	
Correct Containers Used	☑Yes ☐ No ☐ N/A	
Containers Intact	☑Yes ☐ No ☐ N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☑Yes ☐ No ☐ N/A	
All containers needing acid/base preservation have been checked.	☐Yes ☐ No ☐ N/A	Preservation Information: Preservative:
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: Vials, Microbiology, O&G, Metals	☐Yes ☐ No ☐ N/A	Lot #/Trace #: Date: Time: Initials:
Headspace in VOA Vials? (>6mm):	☐Yes ☐ No ☐N/A	
Trip Blank Present:	☐Yes ☐ No ☐N/A	

Additional Login Comments:

Client notification/ Resolution

Person Contacted: Date/Time:

Comments/Resolution:

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

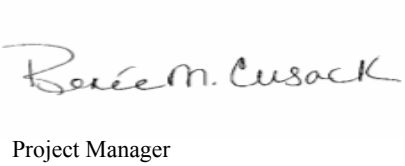
November 20, 2023

Claire Wegh
nb-Housatonic Valley Association
150 Kent Rd. South
Cornwall Bridge, CT 06754

Project Location:
Project Number: HVA_Amenia, NY
Laboratory Work Order Number: 23K2496

Enclosed are results of analyses for samples received by the laboratory on November 17, 2023. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Project Manager

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

nb-Housatonic Valley Association
150 Kent Rd. South
Cornwall Bridge, CT 06754
ATTN: Claire Wegh

REPORT DATE: 11/20/2023

PURCHASE ORDER NUMBER:

PROJECT NUMBER: HVA_Amenia, NY

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 23K2496

The results of analyses performed on the following samples submitted to Pace Analytical Services, LLC - Newburgh are found in this report.

PROJECT LOCATION:

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
ETWB	23K2496-01	Water		SM 9223B-2016	
ETERUSMS	23K2496-02	Water		SM 9223B-2016	
TH1	23K2496-03	Water		SM 9223B-2016	
WTEBOT1	23K2496-04	Water		SM 9223B-2016	
WTWBOT1	23K2496-05	Water		SM 9223B-2016	
WTEROT2	23K2496-06	Water		SM 9223B-2016	
WTERDSCF	23K2496-07	Water		SM 9223B-2016	
ETWBUSCF	23K2496-08	Water		SM 9223B-2016	
WTEBM	23K2496-09	Water		SM 9223B-2016	

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Pace Analytical Services, LLC - Newburgh for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Renee M. Cusack

Renee Cusack
PM

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23K2496

Date Received: 11/17/2023

Field Sample #: ETWB | Sampled: 11/17/2023 11:30

Sample ID: 23K2496-01

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	5.2	1.0	CFU/100 mL	1		SM 9223B-2016	11/17/23	11/17/23 16:41	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23K2496

Date Received: 11/17/2023

Field Sample #: ETERUSMS | Sampled: 11/17/2023 13:40

Sample ID: 23K2496-02

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	11	1.0	CFU/100 mL	1		SM 9223B-2016	11/17/23	11/17/23 16:41	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23K2496

Date Received: 11/17/2023

Field Sample #: TH1 | Sampled: 11/17/2023 11:00

Sample ID: 23K2496-03

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	2.0	1.0	CFU/100 mL	1		SM 9223B-2016	11/17/23	11/17/23 16:41	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23K2496

Date Received: 11/17/2023

Field Sample #: WTEBOT1 | Sampled: 11/17/2023 10:20

Sample ID: 23K2496-04

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	ND	1.0	CFU/100 mL	1		SM 9223B-2016	11/17/23	11/17/23 16:41	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23K2496

Date Received: 11/17/2023

Field Sample #: WTWBOT1 | Sampled: 11/17/2023 10:20

Sample ID: 23K2496-05

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	490	1.0	CFU/100 mL	1		SM 9223B-2016	11/17/23	11/17/23 16:41	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23K2496

Date Received: 11/17/2023

Field Sample #: WTEROT2 | Sampled: 11/17/2023 09:20

Sample ID: 23K2496-06

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	1.0	1.0	CFU/100 mL	1		SM 9223B-2016	11/17/23	11/17/23 16:41	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23K2496

Date Received: 11/17/2023

Field Sample #: WTERDSCF | Sampled: 11/17/2023 09:55

Sample ID: 23K2496-07

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	3.1	1.0	CFU/100 mL	1		SM 9223B-2016	11/17/23	11/17/23 16:41	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23K2496

Date Received: 11/17/2023

Field Sample #: ETWBUSCF | Sampled: 11/17/2023 12:30

Sample ID: 23K2496-08

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	6.3	1.0	CFU/100 mL	1		SM 9223B-2016	11/17/23	11/17/23 16:41	JC

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 23K2496

Date Received: 11/17/2023

Field Sample #: WTEBM | Sampled: 11/17/2023 13:10

Sample ID: 23K2496-09

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	5.2	1.0	CFU/100 mL	1		SM 9223B-2016	11/17/23	11/17/23 16:41	JC

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SM 9223B-2016 in Water	
Escherichia Coli	NB-CT,NB-NJ,NB-NY

Pace Analytical Services, LCC operates under the following certifications and accreditations:

Code	Description	Number	Expires
NB-CT	Connecticut Department of Public Health	PH-0823	09/30/2024
NB-NJ	New Jersey DEP	NY015 NELAP	06/30/2023
NB-NY	New York State Department of Health	10142 NELAP	04/1/2024

CHAIN OF CUSTODY

Pace® ANALYTICAL SERVICES

Lab Name	PAS - Newburgh	NYS DOH LAB # 10142 NJDEP LAB # NY105 CT DOPH# PH-0554	
Lab Address	315 Fullerton Avenue, Newburgh, NY 12550	Phone (845) 562-0890	
Field Office Address	312 Titusville Rd, Poughkeepsie, NY 12603	Field Office Phone (845) 229-6536	
Field Office Address	35 Goshen Turnpike, Bloomingburg, NY 12721	Field Office Phone (845)733-1557	

REPORT# (Lab Use Only): 23K2496

CLIENT NAME	PWS NUMBER
Housatonic Valley Association	

CLIENT ADDRESS

CLIENT PHONE1	CLIENT (SITE) CONTACT

EMAIL (TO SEND REPORT)	P.O. NUMBER/ PROJECT NUMBER

PROJECT LOCATION

PAGE ___ of ___

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	D (Drinking Water) or W (Waste Water) Indicate	SOLID OR SEMISOLID	Chlorine Residual	Total # of Containers	40mL Vials HCl	Liter Amber HCl	250 Amber Sulfuric	Liter Amber Glass	250 mL Plastic Nitric Acid	250mL Plastic Sulfuric Acid	Liter Plastic	250mL Plastic	250mL Plastic NaOH	40mL Vials Sulfuric	40 mL Glass Plain	125 mL Sterile Na2S2O3	125mL Sterile	Other	Analysis Requested
11/17	11:30	ETWB																					E. Coli Cunt
11/17	1:40	ETEBUSMS																					" "
11/17	11:00	TH1																					" "
11/17	10:20	WTEBOT1																					" "
11/17	11:25	WTWBOT1																					" "
11/17	9:20	WTEBOT2																					" "
11/17	9:55	WTEBDSCF																					" "
11/17	12:30	ETWBUSCF																					" "
11/17	13:10	WTEBM																					" "
																							" "

NUMBER OF CONTAINERS SUBMITTED

TURNAROUND TIME (Biz Days)	NON-TESTING CHARGES
NORMAL ____	P/U ____ SAMP ____
RUSH (Y/N) ____	GRAB ____ COMP ____
RUSH (# Biz Days) ____	REPORTING ____
#OF COOLERS ____	OTHER ____

SAMPLED BY: (SIGNATURE)	COMPANY	DATE	TIME	COMMENTS
Mari Wyh	HVA	11/17	~~2:55pm~~ 2:55pm	

RELINQUISHED BY: (SIGNATURE)	COMPANY	DATE	TIME	RECEIVED BY: (SIGNATURE)	COMPANY	DATE	TIME
Mari Wyh	HVA	11/17	2.55pm				
RELINQUISHED BY: (SIGNATURE)	COMPANY	DATE	TIME	RECEIVED BY: (SIGNATURE)	COMPANY		
RELINQUISHED BY: (SIGNATURE)	COMPANY	DATE	TIME	RECEIVED BY: (SIGNATURE)	COMPANY		

23K2496

RECEIVED FOR PAS NEWBURGH BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT? YES / NO	COOLER TEMP
Tammy Casey	11/17	1455		6.1

PAS NEWBURGH REMARKS: ICE (Y ✓ N) pH/Preservation Check ____ PAID (Y ___ N ___) Payment Method ____

Sample Condition Upon Receipt Form (SCUR)

Project # 23k2496

Client: Housatonic Valley Assoc.

Date and Initials of person:
Examining contents:
Label:
Deliver to location:
pH:

Thermometer Used: IRG4 Date: 11/17 Time: 1455 Initials:

State of Origin: NY

Cooler #1 Temp.°C 0.1 **(Visual)** 0.2 @ 0.0°C, -0.5 @20.0°C **(Correction Factor)** 0.3 **(Actual)** ☒ Samples on ice, cooling process has begun

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ Other

Tracking #

Custody Seal on Cooler/Box Present: ☐ Yes ☐ No **Seals intact:** ☐ Yes ☐ No **Ice:** (Wet) Blue Melted None

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Samples were collected by Pace employee ☐ Yes ☐ No ☐ N/A

		Comments:
Chain of Custody Present	☒ Yes ☐ No ☐ N/A	
Chain of Custody Filled Out	☒ Yes ☐ No ☐ N/A	
Relinquished Signature on COC	☒ Yes ☐ No ☐ N/A	
Sampler Name and Signature on COC	☒ Yes ☐ No ☐ N/A	
Samples Arrived within Hold Time	☒ Yes ☐ No ☐ N/A	
Rush TAT requested on COC	☐ Yes ☐ No ☐ N/A	
Sufficient Volume	☒ Yes ☐ No ☐ N/A	
Correct Containers Used	☒ Yes ☐ No ☐ N/A	
Containers Intact	☒ Yes ☐ No ☐ N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☒ Yes ☐ No ☐ N/A	
All containers needing acid/base preservation have been checked.	☐ Yes ☐ No ☐ N/A	Preservation Information: Preservative:
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: Vials, Microbiology, O&G, Metals	☐ Yes ☐ No ☐ N/A	Lot #/Trace #: Date: Time: Initials:
Headspace in VOA Vials? (>6mm):	☐ Yes ☐ No ☐ N/A	
Trip Blank Present:	☐ Yes ☐ No ☐ N/A	

Additional Login Comments:

Client notification/ Resolution

Person Contacted: Date/Time:

Comments/Resolution:

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

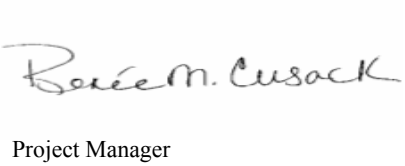
April 30, 2024

Claire Wegh
nb-Housatonic Valley Association
150 Kent Rd. South
Cornwall Bridge, CT 06754

Project Location:
Project Number: HVA_Amenia, NY
Laboratory Work Order Number: 24D1778

Enclosed are results of analyses for samples received by the laboratory on April 15, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Project Manager

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

nb-Housatonic Valley Association
150 Kent Rd. South
Cornwall Bridge, CT 06754
ATTN: Claire Wegh

REPORT DATE: 4/30/2024

PURCHASE ORDER NUMBER:

PROJECT NUMBER: HVA_Amenia, NY

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24D1778

The results of analyses performed on the following samples submitted to Pace Analytical Services, LLC - Newburgh are found in this report.

PROJECT LOCATION:

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
WTEBM	24D1778-01	Water		EPA 351.2 Rev.2 EPA 353.2 Rev.2.0 (1993) EPA 365.3 1978 SM 20,21-23 9223B (-04) (Colilert) varies	
ETDSLB	24D1778-02	Water		EPA 351.2 Rev.2 EPA 353.2 Rev.2.0 (1993) EPA 365.3 1978 SM 20,21-23 9223B (-04) (Colilert) varies	
ETWB	24D1778-03	Water		SM 20,21-23 9223B (-04) (Colilert)	
ETEBUSMS	24D1778-04	Water		EPA 351.2 Rev.2 EPA 353.2 Rev.2.0 (1993) EPA 365.3 1978 SM 20,21-23 9223B (-04) (Colilert) varies	
ETEBOT 1	24D1778-05	Water		EPA 351.2 Rev.2 EPA 353.2 Rev.2.0 (1993) EPA 365.3 1978 SM 20,21-23 9223B (-04) (Colilert) varies	
ETWBOT 1	24D1778-06	Water		EPA 351.2 Rev.2 EPA 353.2 Rev.2.0 (1993) EPA 365.3 1978 SM 20,21-23 9223B (-04) (Colilert) varies	
WTEBUSCF	24D1778-07	Water		EPA 351.2 Rev.2 EPA 353.2 Rev.2.0 (1993) EPA 365.3 1978 SM 20,21-23 9223B (-04) (Colilert) varies	

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

nb-Housatonic Valley Association
150 Kent Rd. South
Cornwall Bridge, CT 06754
ATTN: Claire Wegh

REPORT DATE: 4/30/2024

PURCHASE ORDER NUMBER:

PROJECT NUMBER: HVA_Amenia, NY

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24D1778

The results of analyses performed on the following samples submitted to Pace Analytical Services, LLC - Newburgh are found in this report.

PROJECT LOCATION:

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
WTEBDSCF	24D1778-08	Water		EPA 351.2 Rev.2 EPA 353.2 Rev.2.0 (1993) EPA 365.3 1978 SM 20,21-23 9223B (-04) (Colilert) varies	
WTEB0T2	24D1778-09	Water		EPA 351.2 Rev.2 EPA 353.2 Rev.2.0 (1993) EPA 365.3 1978 SM 20,21-23 9223B (-04) (Colilert) varies	
TH1	24D1778-10	Water		EPA 351.2 Rev.2 EPA 353.2 Rev.2.0 (1993) EPA 365.3 1978 SM 20,21-23 9223B (-04) (Colilert) varies	
WTEBOT 1	24D1778-11	Water		EPA 351.2 Rev.2 EPA 353.2 Rev.2.0 (1993) EPA 365.3 1978 SM 20,21-23 9223B (-04) (Colilert) varies	

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Pace Analytical Services, LLC - Newburgh for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Renee M. Cusack

Renee Cusack
PM

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: WTEBM | Sampled: 4/15/2024 13:15

Sample ID: 24D1778-01

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	4/26/24	4/26/24 15:20	RL
Nitrate/Nitrite as N	0.52	0.050	mg/L	1		EPA 353.2 Rev.2.0 (1993)	4/26/24	4/26/24 15:20	RL
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	4/22/24	4/23/24 16:42	RL
Phosphorus, Total	0.028	0.010	mg/L	1		EPA 365.3 1978	4/23/24	4/23/24 15:25	EM
Escherichia Coli	6.3	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: ETDSLB | Sampled: 4/15/2024 12:05

Sample ID: 24D1778-02

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	4/26/24	4/26/24 15:21	RL
Nitrate/Nitrite as N	0.46	0.050	mg/L	1		EPA 353.2 Rev.2.0 (1993)	4/26/24	4/26/24 15:21	RL
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	4/22/24	4/23/24 16:43	RL
Phosphorus, Total	0.026	0.010	mg/L	1		EPA 365.3 1978	4/23/24	4/23/24 15:25	EM
Escherichia Coli	120	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: ETWB | Sampled: 4/15/2024 12:50

Sample ID: 24D1778-03

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	5.2	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: ETEBUSMS | Sampled: 4/15/2024 10:50

Sample ID: 24D1778-04

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	4/26/24	4/26/24 15:24	RL
Nitrate/Nitrite as N	0.45	0.050	mg/L	1		EPA 353.2 Rev.2.0 (1993)	4/26/24	4/26/24 15:24	RL
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	4/22/24	4/23/24 16:45	RL
Phosphorus, Total	0.024	0.010	mg/L	1		EPA 365.3 1978	4/23/24	4/23/24 15:25	EM
Escherichia Coli	210	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: ETEBOT 1 | Sampled: 4/15/2024 11:20

Sample ID: 24D1778-05

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	4/26/24	4/26/24 15:25	RL
Nitrate/Nitrite as N	0.76	0.050	mg/L	1		EPA 353.2 Rev.2.0 (1993)	4/26/24	4/26/24 15:25	RL
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	4/22/24	4/23/24 16:46	RL
Phosphorus, Total (as P)	0.25	0.10	mg/L	1		EPA 365.3 1978	4/30/24	4/30/24 16:36	EM
Escherichia Coli	3.1	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: ETWBOT 1 | Sampled: 4/15/2024 12:50

Sample ID: 24D1778-06

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	4/26/24	4/26/24 15:26	RL
Nitrate/Nitrite as N	0.34	0.050	mg/L	1		EPA 353.2 Rev.2.0 (1993)	4/26/24	4/26/24 15:26	RL
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	4/22/24	4/23/24 16:47	RL
Phosphorus, Total	0.040	0.010	mg/L	1		EPA 365.3 1978	4/23/24	4/23/24 15:25	EM
Escherichia Coli	20	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: WTEBUSCF | Sampled: 4/15/2024 10:20

Sample ID: 24D1778-07

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	4/26/24	4/26/24 15:27	RL
Nitrate/Nitrite as N	0.58	0.050	mg/L	1		EPA 353.2 Rev.2.0 (1993)	4/26/24	4/26/24 15:27	RL
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	4/22/24	4/23/24 16:48	RL
Phosphorus, Total	0.024	0.010	mg/L	1		EPA 365.3 1978	4/23/24	4/23/24 15:25	EM
Escherichia Coli	18	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: WTEBDSCF | Sampled: 4/15/2024 08:55

Sample ID: 24D1778-08

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	3.1	1.0	mg/L	1		varies	4/26/24	4/26/24 15:28	RL
Nitrate/Nitrite as N	0.56	0.050	mg/L	1		EPA 353.2 Rev.2.0 (1993)	4/26/24	4/26/24 15:28	RL
Nitrogen, Kjeldahl	2.5	1.0	mg/L	1		EPA 351.2 Rev.2	4/22/24	4/23/24 16:50	RL
Phosphorus, Total	0.043	0.010	mg/L	1		EPA 365.3 1978	4/23/24	4/23/24 15:25	EM
Escherichia Coli	19	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: WTEB0T2 | Sampled: 4/15/2024 09:10

Sample ID: 24D1778-09

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	4/26/24	4/29/24 12:23	RL
Nitrate/Nitrite as N	0.53	0.050	mg/L	1		EPA 353.2 Rev.2.0 (1993)	4/26/24	4/26/24 15:29	RL
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	4/25/24	4/29/24 12:23	RL
Phosphorus, Total	0.028	0.010	mg/L	1		EPA 365.3 1978	4/23/24	4/23/24 15:25	EM
Escherichia Coli	30	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

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Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: TH1 | Sampled: 4/15/2024 08:25

Sample ID: 24D1778-10

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	4/26/24	4/29/24 12:24	RL
Nitrate/Nitrite as N	0.21	0.050	mg/L	1		EPA 353.2 Rev.2.0 (1993)	4/26/24	4/26/24 15:29	RL
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	4/25/24	4/29/24 12:24	RL
Phosphorus, Total	0.067	0.010	mg/L	1		EPA 365.3 1978	4/23/24	4/23/24 15:25	EM
Escherichia Coli	15	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24D1778

Date Received: 4/15/2024

Field Sample #: WTEBOT 1 | Sampled: 4/15/2024 09:40

Sample ID: 24D1778-11

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Nitrogen (preserved)	ND	1.0	mg/L	1		varies	4/26/24	4/29/24 12:25	RL
Nitrate/Nitrite as N	0.61	0.050	mg/L	1		EPA 353.2 Rev.2.0 (1993)	4/26/24	4/26/24 15:30	RL
Nitrogen, Kjeldahl	ND	1.0	mg/L	1		EPA 351.2 Rev.2	4/25/24	4/29/24 12:25	RL
Phosphorus, Total	0.033	0.010	mg/L	1		EPA 365.3 1978	4/23/24	4/23/24 15:25	EM
Escherichia Coli	13	1.0	CFU/100 mL	1		SM 20,21-23 9223B (-04) (Colilert)	4/15/24	4/15/24 16:19	VMA

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 351.2 Rev.2 in Water	
Nitrogen, Kjeldahl	NB-CT,NB-NJ,NB-NY
EPA 353.2 Rev.2.0 (1993) in Water	
Nitrate/Nitrite as N	NB-CT,NB-NJ,NB-NY
EPA 365.3 1978 in Water	
Phosphorus, Total	NB-CT,NB-NJ,NB-NY
Phosphorus, Total	NB-CT,NB-NJ,NB-NY
SM 20,21-23 9223B (-04) (Colilert) in Drinking Water	
Escherichia Coli	NB-CT,NB-NJ,NB-NY

Pace Analytical Services, LCC operates under the following certifications and accreditations:

Code	Description	Number	Expires
NB-CT	Connecticut Department of Public Health	PH-0823	09/30/2024
NB-NJ	New Jersey DEP	NY015 NELAP	06/30/2024
NB-NY	New York State Department of Health	10142 NELAP	03/31/2025

CHAIN OF CUSTODY

Pace® ANALYTICAL SERVICES

Lab Name **PAS - Newburgh** NYS DOH LAB # **10142** NJDEP LAB # **NY105** CT DOPH# **PH-0555**
Lab Address **315 Fullerton Avenue, Newburgh, NY 12550** Phone **(845) 562-0890**
Field Office Address **312 Titusville Rd, Poughkeepsie, NY 12603** Field Office Phone **(845) 229-6536**
Field Office Address **35 Goshen Turnpike, Bloomingburg, NY 12721** Field Office Phone **(845)733-1557**

REPORT# (Lab Use Only): 24D1778

CLIENT NAME	PWS NUMBER
Housatonic Valley Association	

CLIENT ADDRESS: 150 South Kent Rd., South Cornwall Bridge, CT

CLIENT PHONE1	CLIENT (SITE) CONTACT
845-897-2375	Claire Wegh
EMAIL(TO SEND REPORT) cwegh@hvatoday.org	P.O. NUMBER/ PROJECT NUMBER

PROJECT LOCATION

PAGE ____ of ____

TURNAROUND TIME (Biz Days) NON-TESTING CHARGES
NORMAL _____ P/U ____ SAMP _____
RUSH (Y/N) _____ GRAB _____ COMP _____
RUSH (# Biz Days) _____ REPORTING _____
#OF COOLERS _____ OTHER _____

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: D (Drinking Water) or W (Waste Water) Indicate	MATRIX: SOLID OR SEMISOLID	MATRIX: Chlorine Residual	REQUIRED Containers: Total # of Containers	40mL Vials HCl	Liter Amber HCl	250 Amber Sulfuric	Liter Amber Glass	250 mL Plastic Nitric Acid	250mL Plastic Sulfuric Acid	Liter Plastic	250mL Plastic	250mL Plastic NaOH	40mL Vials Sulfuric	40 mL Glass Plain	125 mL Sterile Na2S2O3	125mL Sterile	Other	Analysis Requested
			NUMBER OF CONTAINERS SUBMITTED																				
4/15/24	1:15	WTEBM						1						1							1		SM9223QT, TKN, N/N, TPO4, TN
"	12:05	ETDSLB																					
"	12:50	ETWB																					
	10:50	ETEBUSMS																					
	11:20	ETEB OT1 (ETEBUSMSOT1)																					
	12:50	ETWBOT1																					
	10:20	WTEBUSCF																					
	8:55	WTEBDSCF																					
	9:10	WTEBOT2																					
	8:25	TH1																					
	9:40	WTEBOT1																					

24D1778

NOTES:

SAMPLED BY: (SIGNATURE)	COMPANY	DATE	TIME	RECEIVED BY: (SIGNATURE)	COMPANY	DATE	TIME
RELINQUISHED BY: (SIGNATURE) Claire Wegh	COMPANY	DATE 4/15/24	TIME 2:54	RECEIVED BY: (SIGNATURE)	COMPANY	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	COMPANY	DATE	TIME	RECEIVED BY: (SIGNATURE)	COMPANY	DATE	TIME

RECEIVED FOR PAS-NEWBURGH BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT? YES / NO	COOLER TEMP	PAS-NEWBURGH REMARKS: ICE (Y/N) pH/Preservation Check
Emma Casey	4/15	1454		0.3	

* ETWB only has bottles for bacteria confirmed w/ client to run only for QT *

Sample Condition Upon Receipt Form (SCUR)

Project # 24D1778

Client: Housatonic Valley Assoc.

Date and Initials of person:
Examining contents:
Label:
Deliver to location:
pH:

Thermometer Used: IRG4 Date: 4/15 Time: 1454 Initials:

State of Origin: NY

Cooler #1 Temp.°C 0.3 **(Visual)** 0.2 @ 0.0°C, -0.5 @20.0°C **(Correction Factor)** 0.4 **(Actual)** ☒ Samples on ice, cooling process has begun

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace ☐ Other

Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ Other

Tracking #

Custody Seal on Cooler/Box Present: ☐ Yes ☐ No **Seals intact:** ☐ Yes ☐ No **Ice:** (Wet) Blue Melted None

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Samples were collected by Pace employee ☐ Yes ☐ No ☐ N/A

		Comments:
Chain of Custody Present	☑ Yes ☐ No ☐ N/A	
Chain of Custody Filled Out	☑ Yes ☐ No ☐ N/A	
Relinquished Signature on COC	☑ Yes ☐ No ☐ N/A	
Sampler Name and Signature on COC	☑ Yes ☐ No ☐ N/A	
Samples Arrived within Hold Time	☑ Yes ☐ No ☐ N/A	
Rush TAT requested on COC	☐ Yes ☐ No ☐ N/A	
Sufficient Volume	☑ Yes ☐ No ☐ N/A	
Correct Containers Used	☑ Yes ☐ No ☐ N/A	
Containers Intact	☑ Yes ☐ No ☐ N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☑ Yes ☐ No ☐ N/A	
All containers needing acid/base preservation have been checked.	☐ Yes ☐ No ☐ N/A	Preservation Information: Preservative: Lot #/Trace #: Date: Time: Initials:
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: Vials, Microbiology, O&G, Metals	☐ Yes ☐ No ☐ N/A	
Headspace in VOA Vials? (>6mm):	☐ Yes ☐ No ☐ N/A	
Trip Blank Present:	☐ Yes ☐ No ☐ N/A	

Additional Login Comments: A ETWB sample 3 only has bacteria bottle cleared w/ client sample 3 requires 24 test run

Client notification/ Resolution

Person Contacted: Date/Time:

Comments/Resolution:

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

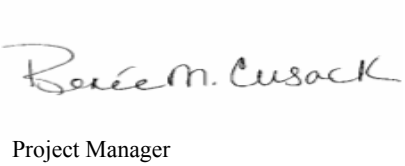
May 9, 2024

Claire Wegh
nb-Housatonic Valley Association
150 Kent Rd. South
Cornwall Bridge, CT 06754

Project Location:
Project Number: HVA_Amenia, NY
Laboratory Work Order Number: 24E1184

Enclosed are results of analyses for samples received by the laboratory on May 8, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Project Manager

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

nb-Housatonic Valley Association
150 Kent Rd. South
Cornwall Bridge, CT 06754
ATTN: Claire Wegh

REPORT DATE: 5/9/2024

PURCHASE ORDER NUMBER:

PROJECT NUMBER: HVA_Amenia, NY

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24E1184

The results of analyses performed on the following samples submitted to Pace Analytical Services, LLC - Newburgh are found in this report.

PROJECT LOCATION:

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
WTEBDSCF	24E1184-01	Water		SM 20,21-23 9223B (-04) (Colilert)	
WTEBOTI	24E1184-02	Water		SM 20,21-23 9223B (-04) (Colilert)	
ETEBOTI	24E1184-03	Water		SM 20,21-23 9223B (-04) (Colilert)	
ETEBUSMS	24E1184-04	Water		SM 20,21-23 9223B (-04) (Colilert)	
ETDSLB	24E1184-05	Water		SM 20,21-23 9223B (-04) (Colilert)	
WTEBM	24E1184-06	Water		SM 20,21-23 9223B (-04) (Colilert)	
WTEBUSCF	24E1184-07	Water		SM 20,21-23 9223B (-04) (Colilert)	
WTEB OT2	24E1184-08	Water		SM 20,21-23 9223B (-04) (Colilert)	
ETWBOTI	24E1184-09	Water		SM 20,21-23 9223B (-04) (Colilert)	
THI	24E1184-10	Water		SM 20,21-23 9223B (-04) (Colilert)	
ETWB	24E1184-11	Water		SM 20,21-23 9223B (-04) (Colilert)	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Pace Analytical Services, LLC - Newburgh for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Renee M. Cusack

Renee Cusack
PM

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location:

Sample Description:

Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: WTEBDSCF

Sampled: 5/8/2024 09:45

Sample ID: 24E1184-01

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	4900	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location:

Sample Description:

Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: WTEBOTI

Sampled: 5/8/2024 09:45

Sample ID: 24E1184-02

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	20000	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location:

Sample Description:

Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: ETEBOTI

Sampled: 5/8/2024 12:30

Sample ID: 24E1184-03

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	1600	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location:

Sample Description:

Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: ETEBUSMS

Sampled: 5/8/2024 12:15

Sample ID: 24E1184-04

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	1700	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: ETDSLB | Sampled: 5/8/2024 13:00

Sample ID: 24E1184-05

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	240	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location:

Sample Description:

Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: WTEBM

Sampled: 5/8/2024 11:45

Sample ID: 24E1184-06

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	820	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location:

Sample Description:

Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: WTEBUSCF

Sampled: 5/8/2024 11:30

Sample ID: 24E1184-07

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	700	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: WTEB OT2 | Sampled: 5/8/2024 09:45

Sample ID: 24E1184-08

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	800	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location:

Sample Description:

Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: ETWBOTI

Sampled: 5/8/2024 13:30

Sample ID: 24E1184-09

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	31	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: THI | Sampled: 5/8/2024 10:40

Sample ID: 24E1184-10

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	4100	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

Project Location: | Sample Description: | Work Order: 24E1184

Date Received: 5/8/2024

Field Sample #: ETWB | Sampled: 5/8/2024 13:30

Sample ID: 24E1184-11

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Escherichia Coli	10	10	CFU/100 mL	10		SM 20,21-23 9223B (-04) (Colilert)	5/8/24	5/8/24 16:03	VMA

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

315 Fullerton Avenue * Newburgh, NY 12550 * TEL. (845) 562-0890

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SM 20,21-23 9223B (-04) (Colilert) in Drinking Water	
Escherichia Coli	NB-CT,NB-NJ,NB-NY

Pace Analytical Services, LCC operates under the following certifications and accreditations:

Code	Description	Number	Expires
NB-CT	Connecticut Department of Public Health	PH-0823	09/30/2024
NB-NJ	New Jersey DEP	NY015 NELAP	06/30/2024
NB-NY	New York State Department of Health	10142 NELAP	03/31/2025

Housatonic Valley Association: 150 Kent Rd South Cornwall Bridge, CT

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB US

24E1184

Company Name: Housatonic Valley Assoc.

Street Address: 150 Kent Rd South Cornwall Bridge, CT

Customer Project #:

Project Name: Arnold Mill

Site Collection Info/Facility ID (as applicable):

Contact/Report To: Claire Wegh

Phone #: 860 596 6471

E-Mail: cwegh@hvatoday.org

Cc E-Mail:

Invoice To: Steven Wolf

Invoice E-Mail: swolf@hvatoday.org

Purchase Order # (if applicable):

Quote #:

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [x] ET

County / State origin of sample(s):

Data Deliverables:

[ ] Level II [ ] Level III [ ] Level IV

[ ] EQUIS

[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):

[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested: 5/10/24

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

Li Coli: Fecal

Q+ - PR

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr:

AcctNum / Client ID:

Table #:

Profile / Template:

Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Sample Comment
WTEBDSCF			5/8/24	[illegible]	9:45					
WTEBOT1			"	9:45						
ETEBOT1				12:30						
ETEBUSMS				12:15						
ETDSLB				1:00						
WTEBM				11:45						
WTEBUSCF				11:30						
WTEB OT2				9:45						
ETWBOT1				1:30						
TH1				10:40						

Additional Instructions from Pace®:

ETWB - - - - - - - - - - 1:30

Collected By: (Printed Name) Claire Wegh

Signature: Claire Wegh

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
				10.1	45

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Claire Wegh	5/8/24 3:00	[signature]	5/8/24 1500	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: of

Sample Condition Upon Receipt Form (SCUR)

Project # 24E1184

Client: Housatonic Valley Association

Date and Initials of person:
Examining contents:
Label:
Deliver to location:
pH:

Thermometer Used: IRG4 Date: 5/8 Time: 1500 Initials:

State of Origin: NY

Cooler #1 Temp.°C 10.1 **(Visual)** 0.2 @ 0.0°C, -0.5 @20.0°C **(Correction Factor)** 10.3 **(Actual)** ☒ Samples on ice, cooling process has begun

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace ☐ Other

Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ Other

Tracking #

Custody Seal on Cooler/Box Present: ☐ Yes ☐ No **Seals intact:** ☐ Yes ☐ No **Ice:** (Wet) Blue Melted None

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Samples were collected by Pace employee ☐ Yes ☐ No ☐ N/A

		Comments:
Chain of Custody Present	☒Yes ☐ No ☐ N/A	
Chain of Custody Filled Out	☒Yes ☐ No ☐ N/A	
Relinquished Signature on COC	☒Yes ☐ No ☐ N/A	
Sampler Name and Signature on COC	☒Yes ☐ No ☐ N/A	
Samples Arrived within Hold Time	☒Yes ☐ No ☐ N/A	
Rush TAT requested on COC	☐Yes ☐ No ☐ N/A	
Sufficient Volume	☒Yes ☐ No ☐ N/A	
Correct Containers Used	☒Yes ☐ No ☐ N/A	
Containers Intact	☒Yes ☐ No ☐ N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☒Yes ☐ No ☐ N/A	
All containers needing acid/base preservation have been checked.	☐Yes ☐ No ☐ N/A	Preservation Information: Preservative: Lot #/Trace #: Date: Time: Initials:
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: Vials, Microbiology, O&G, Metals	☐Yes ☐ No ☐ N/A	
Headspace in VOA Vials? (>6mm):	☐Yes ☐ No ☐N/A	
Trip Blank Present:	☐Yes ☐ No ☐N/A	

Additional Login Comments:

Client notification/ Resolution

Person Contacted: Date/Time:

Comments/Resolution:

D. Sample Field Data Sheets

HVA Ambient Water Quality Sampling Field Data Sheet

General Information and Chemistry

Site ID:	Sampling Date:
Location:	Sampling Time:
Sampled from: ◯ Bridge ◯ Waded	Collected by:
Water Temperature (°C):	Ammonia (ppm): pH:
Specific Conductivity (µm):	Chlorine (ppt): DO (%):
Salinity (ppt):	Surfactants (ppm): N/A ☐
QAQC: ☐ Duplicate ☐ Field trip blank	Flow characterization: ◯ Low ◯ Normal ◯ High

Site Conditions

Circle the one answer which best describes your ability to participate in 1st degree contact recreation: ◯ 1. Beautiful. Could not be nicer. Ability to swim, wade, etc. fully attained. ◯ 2. Minor aesthetic problems, but still excellent for 1° contact recreation. ◯ 3. 1st degree contact recreation slightly impacted ◯ 4. Desire to participate in 1° contact recreation substantially reduced. ◯ 5. Awful! 1° contact recreation impossible ◯ N/A (headwater/high flows/dry, etc.)	Circle the one answer which best describes your ability to participate in 2nd degree contact recreation: ◯ 1. Beautiful. Could not be nicer. Ability to fish and boat fully attained. ◯ 2. Minor aesthetic problems, but still excellent for 2° contact recreation ◯ 3. 2nd degree contact recreation slightly impacted ◯ 4. Desire to participate in 2° contact recreation substantially reduced. ◯ 5. Awful! 2° contact recreation impossible. ◯ N/A (headwater/high flows/dry, etc.)
Weather Conditions (Current): ◯ Sun ◯ Rain ◯ Clouds	Weather Conditions (Past 24 hours): ◯ Sun ◯ Rain ◯ Clouds

Water Clarity: 10	0 Clear	1	2	3	4	5 Intermediate	6	7	8	9	10 Turbid
Phytoplankton: (suspended algae) 10	0 Natural	1	2	3	4	5 Intermediate	6	7	8	9	10 Severe
Periphyton: 10 (algae on submerged surfaces)	0 Natural	1	2	3	4	5 Intermediate	6	7	8	9	10 Severe
Macrophyte: (aquatic plants) 10	0 Natural	1	2	3	4	5 Intermediate	6	7	8	9	10 Severe
Odor: 10	0 Natural	1	2	3	4	5 Intermediate	6	7	8	9	10 Noxious
Trash: 10	0 None	1	2	3	4	5 Intermediate	6	7	8	9	10 Landfill
Discharge/Pipes: 10	0 None	1	2	3	4	5 Intermediate	6	7	8	9	10 Dominant

Other observations/Field Notes:

☐ Additional photos taken of areas of concern

HVA Pollution Trackdown Sampling Field Data Sheet

General Information and Chemistry

Site ID:		**Sampling Date:**	
Lat. **Long.**		**Sampling Time:**	
Sampled from: ○ Outfall ○ Catch-basin ○ Manhole		**Collected by:**	
Water Temperature (°C):		**Ammonia (ppm):**	**pH:**
Specific Conductivity (µm):		**Chlorine (ppt):**	**DO (%):**
Salinity (ppt):		**Surfactants (ppm):**	**Chloride (ppm):**

QAQC:
☐ Duplicate
☐ Full trip blank

Structure Material:
○ Concrete ○ Metal ○ Other:
○ Brick/Clay ○ PVC/Plastic

Dimensions:
Width: (ft)
Height: (ft)

Curbing:
○ Curbed
○ Curbless

Rain in last 24 hours: ○ None ○ Heavy rain ○ Steady rain ○ Intermittent ○ Trace

Present Conditions: ○ Clear ○ Partly cloudy ○ Overcast ○ Heavy rain ○ Steady rain ○ Intermittent ○ Trace

Flow Characteristics

Volume:	○ None ○ Stagnant ○ Trickle ○ Moderate ○ Heavy
Water Color:	☐ Clear ☐ Brown ☐ Grey ☐ Yellow ☐ Green ☐ Orange/Red Other:
Water Clarity:	☐ Clear ☐ Slight Cloudiness ☐ Cloudy ☐ Opaque ☐ Stained
Floatables:	☐ None ☐ Sewage ☐ Oil ☐ Suds ☐ Algae Other:
Odor:	☐ None ☐ Sewage ☐ Sour/Rancid ☐ Sulfide ☐ Manure Other:
Plant Growth:	☐ Normal ☐ Inhibited ☐ Excessive Other:
Debris:	☐ Trash ☐ Yard Waste ☐ Excessive Sedimentation ☐ Animal Waste Other:

Surrounding Land Use: ○ Industrial ○ Commercial ○ Urban/Residential ○ Suburban/Residential ○ Institutional ○ Forested ○ Golf course ○ Park ○ Agricultural ○ Other:

Other Observations/Site Notes:

*Remember to take picture(s)