

**EAST LYME WATER AND SEWER COMMISSION
AGENDA
February 22, 2022
7:00 PM**

**Regular Meeting
East Lyme Town Hall
(Upstairs Main Meeting Room)**

- 1. Call to Order / Pledge of Allegiance**
- 2. Approval of Minutes**
 - a. Regular Meeting Minutes – January 25, 2022**
- 3. Delegations**
- 4. Billing Adjustments/Disputes**
- 5. Approval of Bills – Attachment B**
- 6. Finance Director Report**
- 7. Discussion and Possible Action on Setting Appropriate Interest Rate for Meter Deposit Reimbursements**
- 8. Project Updates**
 - a. Meter Replacement Project – Discussion**
 - b. Update on Well 5 Rehabilitation Project**
 - c. American Rescue Plan Discussion on Upcoming Projects**
 - d. Discussion and Possible Action on Vibration Analysis of Pumps at Niantic Pumping Station**
- 9. Correspondence Log**
- 10. Chairman's Report**
- 11. Staff Updates**
 - a. Water Department Monthly Report**
 - b. Sewer Department Monthly Report**
- 12. Future Agenda Items**
- 13. Adjournment**

FILED

Feb 16 20 22 AT 2 30 AM/PM
(Signature)
EAST LYME TOWN CLERK

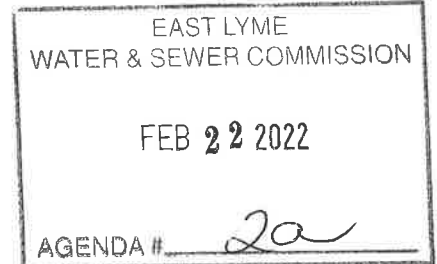
**EAST LYME WATER & SEWER COMMISSION
REGULAR MEETING
TUESDAY, JANUARY 25th, 2022
MINUTES**

The East Lyme Water & Sewer Commission held a Regular Meeting on Tuesday, January 25th, 2022. Chairman Seery called the Regular Meeting to order at 7:00 PM.

PRESENT: Kevin Seery, Chairman, Dave Bond, Steve DiGiovanna, David Jacques, Joe Mingo, Dave Murphy, Carol Russell, Roger Spencer, Dave Zoller

ALSO PRESENT: Joe Bragaw, Public Works Director
Ben North, Municipal Utility Engineer
Anna Johnson, Finance Director
Ann Santoro, Deputy First Selectman

ABSENT: No One



1. Call to Order / Pledge of Allegiance

Chairman Seery called the Regular Meeting of the East Lyme Water & Sewer Commission to order at 7:00 PM and led the assembly in the Pledge of Allegiance.

2. Approval of Minutes

▪ **Regular Meeting Minutes – December 12, 2021**

Mr. Seery called for a motion or any discussion on the Regular Meeting Minutes of December 12, 2021.

Mr. Murphy asked that on Page 1 in the Present listing that Acting be removed after Mr. Seery's name.

****MOTION (1)**

Mr. DiGiovanna moved to approve the Regular Meeting Minutes of December 12, 2021 as amended.

Mr. Spencer seconded the motion.

Vote: 9 – 0 – 0. Motion passed.

FILED

3. Delegations

Mr. Seery called for delegations.

There were none.

Feb 1 2022 AT 10:05 AM/PM
(Ann Santoro)
EAST LYME TOWN CLERK

4. Billing Adjustments/Disputes

There were none.

5. Approval of Bills

Mr. Seery called for a motion on the Well 1A/6 Treatment Project bill.

****MOTION (2)**

Mr. DiGiovanna moved to approve the following Well 1A/6 Treatment Project bill: Tighe & Bond Inv. #012290003 in the amount of \$31,992.80.

Mr. Murphy seconded the motion.

Mr. Murphy asked about retainage.

Mr. North said that we do not hold any, but he would check and let them know.

Vote: 8 – 0 – 1. Motion passed.

Abstained: Mr. Bond

6. Finance Director Report

Ms. Johnson reviewed her report noting that the available cash balances for both water and sewer were a bit higher than in the previous year at this time.

7. Project Updates

▪ Meter Replacement Project

Mr. North reported that 313 more new meters were installed in December bringing the total to 711 or 26% that have been installed. They are looking for another person to help increase meter installs. They were looking to be at the 33% rate and closer to 50% until they ran into seasonal and omicron issues. They are sending out post cards for the next appointment areas and will be more assertive on the next go around.

Mr. Bragaw said that he was putting together a video on what the meter replacement is and the how and why it is being done and how it benefits the homeowners. He noted that he has had a lot of positive feedback and that the program is within budget.

Mr. Bond suggested that they have to make the owners themselves aware of how beneficial it is as if they have a leak it will eliminate a huge water bill by being able to catch it early.

Mr. North noted that with the spring turn-ons that they will have the opportunity to change out meters also.

▪ Update on Well 5 Rehabilitation Project

Mr. North reported that today they received the contract for the scaffolding set-up and all of the work will begin – the well driller will come in. They have ordered items that will require long lead times.

Mr. Jacques asked if they are still looking good on the budget.
Mr. North said yes.

▪ American Rescue Plan Discussion on Upcoming Projects

Mr. Seery noted that he had asked all of his Department Managers to have any recommendations to him by February 2, 2022 for the ARP committee to go over.

Mr. North reported that the list has the same items on it but with the amounts updated to reflect prevailing wage. He thinks that the scope is better defined.

Mr. Bragaw noted that they are well aware that there are many other items and they will follow up with others and any potential federal dollars that may be available.

Mr. DiGiovanna asked if they were giving all three items as listed.

Mr. Bragaw said yes – they are giving all three of the items however they are listed in the order of priority.

Mr. DiGiovanna noted that these are items that they are going to have to be doing.

Ms. Russell asked if in not doing the \$550,000 interior work on the Boston Post Road water tank – how long a time they will have until it needs to be done.

Mr. North said that once they go in there that they would know better as they would do an interior inspection.

Ms. Russell asked if after it is inspected, they find that it needs to be done – what would they do.

Mr. Seery and Mr. Bragaw said that the ARP dollars do free up other dollars that they would have had to use for those projects. He called for a motion -

****MOTION (3)**

Mr. Mingo moved to forward the recommended Water & Sewer projects for consideration to the ARP committee for consideration. (Copy of List attached)

Vote: 9 – 0 – 0. Motion passed.

▪ **Discussion and Possible Action on Project to replace Valves at Sewer Pump Stations**

Mr. North presented the list and quote for the DeZurik 4" 3-way Valve Replacements. He asked that they take the dollars from sewer assessment.

****MOTION (4)**

Mr. Murphy moved to appropriate and transfer \$28,024.00 in the sewer assessment fund from resources available to an account to be established titles, "3-Way Valve Replacement Project" for the purchase of main isolation valves for eight (8) sewer pump stations.

Mr. DiGiovanna seconded the motion.

Mr. Spencer asked if the cost was \$28,000 or \$25,000

Mr. North said that he had added \$3,000 for shipping.

Mr. Bond asked if our staff was going to install them.

Mr. North said yes, adding that we have been doing them.

Vote: 9 – 0 – 0. Motion passed.

▪ **Discussion on Residential Grinder Pump Ownership**

Mr. North said that this could be very cumbersome for the water & sewer people. He noted that when the homes changed from one owner to another that other Towns have turned the ownership over to the new owner.

Mr. Bragaw said that he will check with Town Counsel on the legality of it and get back to them.

Mr. DiGiovanna asked if they are located inside of the home.

Mr. Bragaw said yes, adding that they are easily accessible.

Mr. Bond said that Waterford did this but suggested that they would need a plumber on retained in the event that they have issues.

Mr. Mingo noted that there was a necessity to them due to elevation.

Mr. North said that they do have 28 of them and that they are usually reliable but can get clogged from people putting the wrong items down them which cause the issues.

Mr. Mingo suggested that if people put wrong items down them and miss-use them then the people should pay for the full repair.

Mr. North said that he would work it out and bring back more information for them to discuss.

8. Correspondence Log

There were no comments.

Mr. North asked that they see him if they want the full copies.

9. Chairman's Report

Mr. Seery reported that they had received 1300 test kits and have handed them out. The Governor's Office stated how they have to be allocated – senior centers, AHEPA, Twin Haven, etc, so they have a limited supply.

He noted that on a good note that they numbers are trending downward so they are heading in the right direction.

Also, the rain storm event flooded some of the beach areas; he gave kudos to everyone involved in the extensive clean-up. The ARP committee will be meeting soon and budget meetings will begin the first week in February.

With regard to the hybrid meetings; they will hopefully be projected to the side wall as they want to try to make it work for everyone. Mr. Bragaw will be looking for 75" flat screens.

10. Staff Updates

a. Water Department Monthly Report

Mr. Russell asked about the flooding that just happened and if it brought up any concerns with our infrastructure.

Mr. Bragaw said that there was 3 feet of water on Atlantic Street and that some of the manholes need to be tightened up. All of Cini Park was also flooded.

Ms. Russell said that resilience thinks that we will have to be planning for 500 year storms.

b. Sewer Department Monthly Report

Mr. Spencer asked about any increase in capacity in New London.

Mr. Bragaw said that they have not done anything about it yet.

11. Future Agenda Items

No discussion.

12. ADJOURNMENT

Mr. Seery called for a motion to adjourn.

****MOTION (5)**

Mr. DiGiovanna moved to adjourn this Regular Meeting of the East Lyme Water & Sewer Commission at 8:00 PM.

Mr. Murphy seconded the motion.

Vote: 9 – 0 – 0. Motion passed.

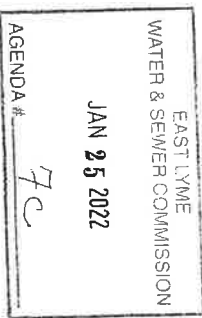
Respectfully submitted,

Karen Zmitruk,
Recording Secretary

**East Lyme Water and Sewer Commission
American Rescue Plan
Upcoming Staff Recommended Projects for Consideration
January 25 2021**

Project	Priority Level	Dec 2021 Estimated Cost	Updated Cost Estimate	Description of Work to be Performed
Upgrade Niantic Sewer Pump Station	1	\$350,000	\$600,000	Replace two original motor/driveshaft pumps, remove PARCO hydraulic actuating valve system, modify piping, add VFD controls.
Recoat Boston Post Rd Water Tank	2	\$600,000	\$750,000	Sand blast and paint exterior of tank. Additional Costs: Interior spot coat and cathodic protection for \$150k or an additional \$550k for total interior recoat. Interior spot coat reflected in price increase.
Upgrade Pattaganset Sewer Pump Station	3	\$300,000	\$450,000	Replace three original motor/driveshaft pumps, modify piping, add VFD controls.
Total Costs of all Projects Considered:			\$1,800,000	

Note: ARPA funding already allocated - \$920,000 for a new well and filter rehabilitation work at Well 5 WTP



Attachment WES 1/25/22 (Motion 3)

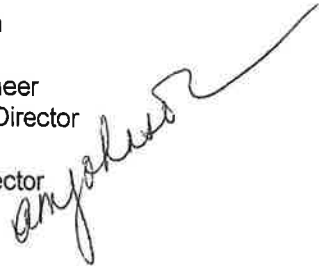
Memo

To: Kevin A. Seery, First Selectman
 Water & Sewer Commission
 Benjamin M. North, Utility Engineer
 Joseph Bragaw, Public Works Director

From: Anna M. Johnson, Finance Director

Date: February 14, 2022

Re: Month End Reports – January 31, 2022



EAST LYME WATER & SEWER COMMISSION	
FEB 22 2022	
AGENDA #	4

Water

The available cash balance in Water Operations at month end January 31, 2022 was \$2,259,822 compared to \$1,768,468 in 2021. Of the current cash balance on hand, \$312,063 is due to Sewer Operations and \$189,640 is for meter deposits.

During the month of January, we received \$126,364 in revenues for a total fiscal year to date of \$1,901,963 or 52.16% of the budgeted amount compared to \$105,817 and \$1,989,018 or 56.72% for fiscal year ended June 30, 2021. In January we billed \$15,758 for Prison use compared to \$24,223 in January 2021.

Total water operating expenditures for the month of January were \$181,449 of the amount budgeted compared to \$301,039 for fiscal year ended June 30, 2021. The percent of budget expended is 49% compared to 54% for 2021. During the month of January we paid \$28,195 for Chemicals, \$17,690 for electricity, and \$21,831 for maintenance of transmission and distribution.

Sewer

The available cash balance in Sewer Operations at month end January 31, 2022 was \$749,865 compared to \$563,296 in January 2021. In addition, Water Operations owes Sewer Operations \$312,063 at month end. During the month of January, we received \$50,126 in revenues for a total fiscal year to date of \$1,245,232 or 55.06% of the budgeted amount compared to \$29,736 and \$1,205,502 or 55.61% for fiscal year ended June 30, 2021. In January we billed \$49,344 for Prison use compared to \$28,293 in January 2021.

Total sewer operating expenditures for the month of January were \$68,938 of the amount budgeted compared to \$110,345 for fiscal year ended June 30, 2021. The percent of budget expended is 57% compared to 60% for 2021. During the month of January we expended \$12,689 for utilities.

Sewer Assessment

The available cash balance in Sewer Assessment Fund at month end January 31, 2022 was \$3,075,648 compared to \$2,334,661 in January 2021. During the month of January we received \$29,521 in assessment payments and interest and there were no cash outlays.

AMJ/nb

**Town of East Lyme
Water & Sewer Operations
January 2022 Budget Highlights**

Description	1/31/2022	1/31/2021	Increase (Decrease)
WATER			
Total Revenues	1,901,963	1,989,018	(87,055)
Prison Billing (month only)	15,758	24,223	(8,465)
Delinquent Interest	5,907	6,278	(371)
Benefit Charges	15,300	35,700	(20,400)
Assessment Charges	3,150	7,473	(4,323)
Connection Charges	22,000	8,850	13,150
Misc/Turn On-Off Fees	6,906	7,132	(226)
Lease Rental	35,003	37,950	(2,947)
Private Hydrant Fees	37,750	30,375	7,375
Town Fire Hydrant	52,150	47,408	4,742
 Total Expenditures	 1,560,393	 1,570,989	 (10,597)
SEWER			
Total Revenues	1,245,232	1,205,502	39,729
Prison Billing (month only)	49,344	28,293	21,052
 Total Expenditures	 1,040,345	 1,100,690	 (60,345)
Treatment Plant/System	412,568	401,146	11,422
Utilities	87,474	77,728	9,746
Chemicals	49,140	61,658	(12,518)

State of Connecticut Department of Banking

(/DOB)

[CT.gov Home](#) (/) [Department of Banking](#) (/DOB) Rental Security Deposits

Rental Security Deposits

Key Issues for Landlords and Tenants

Landlords, once you give the key to your rental apartment or home to a tenant, you must follow basic rules for security deposits.

Tenants, once you accept the key to your new home, you must also follow guidelines to protect your security deposit.

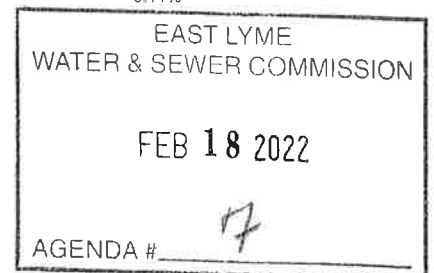
Connecticut law outlines the rights and responsibilities of both landlords and tenants about the collection, holding and return of rent security deposits. This publication answers common questions on rent security deposits. It's our attempt to help *both* landlords and tenants understand their obligations and Connecticut's law. You may wish to review [Section 47a-21](#) (https://www.cga.ct.gov/current/pub/chap_831.htm#sec_47a-21) of the Connecticut General Statutes for more detailed information. See also the [DOB booklet regarding rental security deposit laws](#).

[Options for Resolving Disputes \(/DOB/Consumer/Consumer-Complaints/Rental-Security-Deposit-Complaints\)](#)

The rental security deposit interest rate for 2022 is 0.06%.

Previous Year's Rental Security Deposit Interest Rates:

10/1/73-9/30/82	4.00%
10/1/82-9/30/92	5.25%
10/1/92-6/30/1993	4.00%
7/1/93-12/31/93	2.90%
1994	2.50%
1995	2.80%
1996	3.10%
1997	2.80%
1998	2.60%
1999	2.30%
2000	2.20%
2001	2.40%
1/1/2002-12/31/11	1.50%
2012	0.16%
2013	0.11%



2014	0.09%
2015	0.08%
2016	0.08%
2017	0.08%
2018	0.09%
2019	0.15%
2020	0.15%
2021	0.08%

The following Excel Worksheet was designed to provide assistance in determining the interest that is owed on rental security deposits: [Interest Calculation Table](#)
Updated December 2021

Frequently Asked Questions

What Is A Security Deposit?

A security deposit is any advance rental payment *other than* an advance for the first month's rent or a deposit for a key or any special equipment. A security deposit remains the tenant's property but the landlord holds a security interest in it. Security deposits must be kept in an escrow account in a Connecticut bank.

How Large A Security Deposit Can A Landlord Require?

Landlords can't require more than two months rent as a security deposit. This limit is reduced to one month's rent if a tenant is 62 years of age or older.

Do Landlords Pay Tenants Interest On Security Deposits?

Yes. Landlords must pay tenants interest on security deposits of at least the average commercial banks savings deposit rate as annually determined and published by the Banking Commissioner. Interest must be paid annually on the anniversary date of a tenancy either directly to tenants or as a credit towards the next month's rent. See [interest rate information \(/DOB/Rental-Security-Deposits/Rental-Security-Deposits/Deposit-Index-and-Interest-Rates\)](#).

What If A Tenant Is Late Paying Rent?

Tenants forfeit interest on their security deposits for any months when they are more than ten days late paying their rent. The only exception is when a tenant's rental agreement already contains a late charge for overdue rental payments.

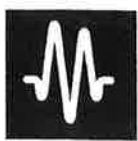
TIP: Before moving, inspect your apartment with the landlord and note its condition.

How Can Tenants Ensure Their Security Deposits Will Be Returned?

Tenants should carefully note the condition of their apartment when they first move in and confirm that condition *in writing* with their new landlord. When tenants decide to move, they should notify their landlord in writing of their plans to leave and must provide *written notice* of a forwarding address where the landlord may send their security deposit with interest. Since a tenant may need to show proof that the written notice was sent to their landlord, the tenant should send the notice by **certified mail with a return receipt**. All rental payments should be made on time and tenants should repair any damage they cause. Before moving out, if possible, tenants should inspect the apartment together with their landlord. Keys should be returned the day the tenancy ends.

INTEREST RATES FOR WATER METER DEPOSIT REIMBURSEMENTS

Year	Year	\$50 meter deposit		Int rate from State	\$70 meter deposit	
		1%	Var		Var	1%
1	2022	\$ 50.00	\$ 50.00	0.06%	\$ 70.00	\$ 70.00
2	2021	\$ 50.50	\$ 50.04	0.08%	\$ 70.06	\$ 70.70
3	2020	\$ 51.01	\$ 50.12	0.15%	\$ 70.16	\$ 71.41
4	2019	\$ 51.52	\$ 50.19	0.15%	\$ 70.27	\$ 72.12
5	2018	\$ 52.03	\$ 50.24	0.09%	\$ 70.33	\$ 72.84
6	2017	\$ 52.55	\$ 50.28	0.08%	\$ 70.39	\$ 73.57
7	2016	\$ 53.08	\$ 50.32	0.08%	\$ 70.44	\$ 74.31
8	2015	\$ 53.61	\$ 50.36	0.08%	\$ 70.50	\$ 75.05
9	2014	\$ 54.14	\$ 50.40	0.09%	\$ 70.56	\$ 75.80
10	2013	\$ 54.68	\$ 50.46	0.11%	\$ 70.64	\$ 76.56
11	2012	\$ 55.23	\$ 50.54	0.16%	\$ 70.75	\$ 77.32
12	2011	\$ 55.78	\$ 51.30	1.50%	\$ 71.81	\$ 78.10
13	2010	\$ 56.34	\$ 52.07	1.50%	\$ 72.89	\$ 78.88
14	2009	\$ 56.90	\$ 52.85	1.50%	\$ 73.98	\$ 79.67
15	2008	\$ 57.47	\$ 53.64	1.50%	\$ 75.09	\$ 80.46
16	2007	\$ 58.05	\$ 54.44	1.50%	\$ 76.22	\$ 81.27
17	2006	\$ 58.63	\$ 55.26	1.50%	\$ 77.36	\$ 82.08
18	2005	\$ 59.22	\$ 56.09	1.50%	\$ 78.52	\$ 82.90
19	2004	\$ 59.81	\$ 56.93	1.50%	\$ 79.70	\$ 83.73
20	2003	\$ 60.41	\$ 57.78	1.50%	\$ 80.90	\$ 84.57
21	2002	\$ 61.01	\$ 58.65	1.50%	\$ 82.11	\$ 85.41
22	2001	\$ 61.62	\$ 60.06	2.40%	\$ 84.08	\$ 86.27
23	2000	\$ 62.24	\$ 61.38	2.20%	\$ 85.93	\$ 87.13
24	1999	\$ 62.86	\$ 62.79	2.30%	\$ 87.91	\$ 88.00
25	1998	\$ 63.49	\$ 64.42	2.60%	\$ 90.19	\$ 88.88
26	1997	\$ 64.12	\$ 66.23	2.80%	\$ 92.72	\$ 89.77
27	1996	\$ 64.76	\$ 68.28	3.10%	\$ 95.59	\$ 90.67
28	1995	\$ 65.41	\$ 70.19	2.80%	\$ 98.27	\$ 91.57
29	1994	\$ 66.06	\$ 71.95	2.50%	\$ 100.73	\$ 92.49
30	1993	\$ 66.73	\$ 74.03	2.90%	\$ 103.65	\$ 93.42
31	1992	\$ 67.39	\$ 77.00	4.00%	\$ 107.79	\$ 94.35
32	1991	\$ 68.07	\$ 81.04	5.25%	\$ 113.45	\$ 95.29
33	1990	\$ 68.75	\$ 85.29	5.25%	\$ 119.41	\$ 96.25
34	1989	\$ 69.43	\$ 89.77	5.25%	\$ 125.68	\$ 97.21
35	1988	\$ 70.13	\$ 94.48	5.25%	\$ 132.28	\$ 98.18
36	1987	\$ 70.83	\$ 99.44	5.25%	\$ 139.22	\$ 99.16
37	1986	\$ 71.54	\$ 104.66	5.25%	\$ 146.53	\$ 100.15
38	1985	\$ 72.25	\$ 110.16	5.25%	\$ 154.22	\$ 101.16
39	1984	\$ 72.98	\$ 115.94	5.25%	\$ 162.32	\$ 102.17
40	1983	\$ 73.71	\$ 122.03	5.25%	\$ 170.84	\$ 103.19
41	1982	\$ 74.44	\$ 126.91	4.00%	\$ 177.67	\$ 104.22
42	1981	\$ 75.19	\$ 131.99	4.00%	\$ 184.78	\$ 105.26
43	1980	\$ 75.94	\$ 137.27	4.00%	\$ 192.17	\$ 106.32
44	1979	\$ 76.70	\$ 142.76	4.00%	\$ 199.86	\$ 107.38
45	1978	\$ 77.47	\$ 148.47	4.00%	\$ 207.85	\$ 108.45



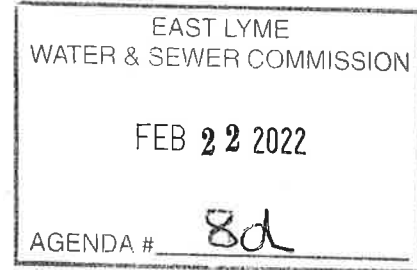
Proposal PR-22043 Rev. 1

**Troubleshooting Vibration Issues with Sulzer dry-pit submersibles for East Lyme, CT
Water and Sewer Dept**

February 9, 2022

Prepared for:

Ben North
Utilities Engineer
East Lyme Water and Sewer
Tel: 860-691-4108
Email: bnorth@eltownhall.com



Prepared by:

Tim Lebo and Maki Onari
Mechanical Solutions, Inc. (MSI)
Tel.: 973-326-9920 ext. 154 and 117
Email: Tim.lebo@mechsol.com and maki.onari@mechsol.com

Executive Summary:

Revision 1 of this proposal includes minor corrections to the pump system information. The statement of work, cost details, and terms sections remain unchanged.

The purpose of the work is to provide specialized vibration testing and evaluation services for East Lyme Water and Sewer at Niantic Pumping Station in East Lyme, CT. There are two identical Sulzer Dry Pit Submersible Pumps (Model XFP 155J CV2 T860/4J) which were installed during an emergency project to replace the former pumps driven by motors through a driveshaft. It was reported by East Lyme Water and Sewer that the newly installed pumps, in the same configuration, have been experiencing vibration issues since their installation approximately 4 years ago (Figure 1).

Each pump operates on Variable Frequency Drives (VFDs) between 0 and 60 Hz, and there is only a minor reduction in vibration amplitude towards the slower end of the speed range. The pumps were designed with 2-vane impellers with 1800 GPM of flow at 65 psi of head driven by 115 HP motors. The suction piping has been modified to accommodate the suction elbow of the pumps using eccentric reducers from 14" to 8" and mirrored 45° discharges. In addition, the ½" thick steel baseplate is secured to the foundation by four anchor bolts at the midspans and not at the corners, and site personnel have identified that there are significant voids in the grout all around the baseplate.

The primary focus of MSI's specialized vibration testing and analysis will be to identify the root cause(s) of the pump vibration issues for Pumps #2 and #3 in order to provide clear and concise solutions to East Lyme Water and Sewer for implementation. The following links show example case studies of this process in action:

Main Office
11 Apollo Drive
Whippany, NJ 07981 USA
info@mechsol.com

Test Facilities
431 New Karner Road
Albany, NY 12205 USA
www.mechsol.com

Regional Offices
Texas and
New Hampshire
+1 (973) 326-9920

- mechsol.com/case-study/how-a-large-water-treatment-plant-truly-solved-their-rotating-machinery-problem
- mechsol.com/case-study/raw-water-pumps-experience-high-vibrations-and-failures/
- mechsol.com/case-study/shifting-a-natural-frequency-away-from-running-speed/

Table 1 provides lump sum costs for the proposed work. The proposed statement of work, additional cost details, scheduling information, and recommended contracting approach is also provided. Thank you for the opportunity to present this proposal. Please contact MSI with any questions or comments.

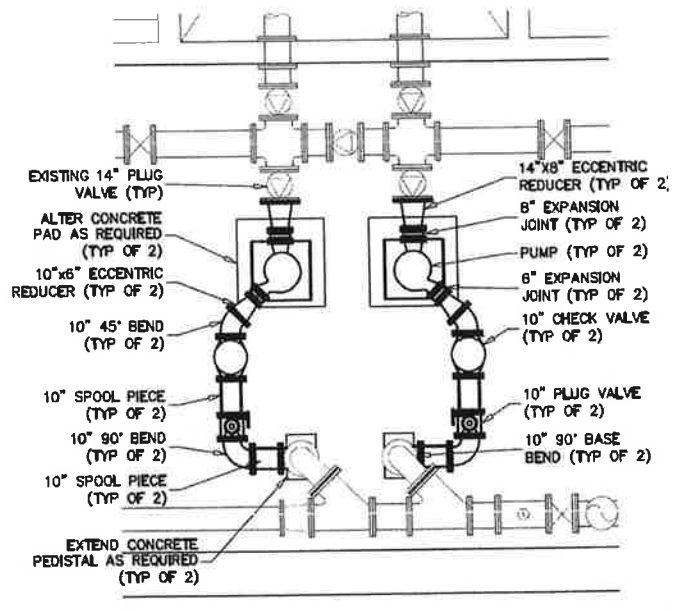


Figure 1. Pumps #2 and #3 installed at Niantic Pumping Station in East Lyme, CT. There are minor differences between each pump system, such as the flexible joint at the suction elbow.

Table 1. Lump Sum Costs. Tasks are described in the Statement of Work below

Tasks	Description	Cost
1-3	Expert Vibration Troubleshooting Site Data Review, Onsite Testing.	\$10,700
4	In-office Analysis, Solution Reporting, and Conference Call to Present Results	\$9,000
Total Troubleshooting Cost		\$19,700
The above costs include MSI providing specialized vibration test hardware and the analysis software required to complete the test data analysis.		
5	<i>Optional</i> Finite Element Analysis to model and evaluate potential solutions before implementing them	Estimate of \$9,000



Figure 2 Example *still image* of a Motion Magnified *Video* (MMV) with data collected using a high-speed camera and MSI's VibVue® MMV system. A powerful new tool that slows down and exaggerates motion (to scale) so issues related to vibration, soft foot, piping issues, etc. can be seen. VibVue® requires significantly less time that ODS testing.

When combined with Experimental Modal Analysis (impact) test results, VibVue® can make ODS testing more focused and time efficient.

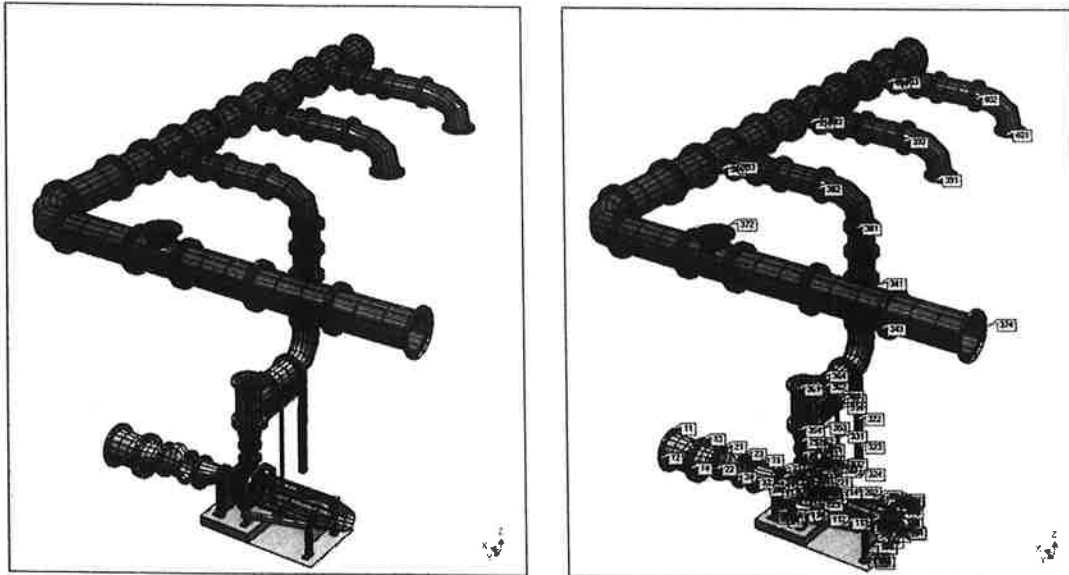


Figure 3. Operating Deflection Shape (ODS) test results are *animations* showing pump system relative motion and vibration at important frequencies (exaggerated but to scale). Each label is one measurement location in three axis of vibration. Specialized software overlays the data on a computer model that is animated (*it is test data, not an FEA prediction*).

Statement of Work:

MSI's Assumptions:

- A. A pre-test teleconference takes place with site personnel to review the test plan.
- B. MSI will have unencumbered access to the pumps.
- C. There will be support for pump operation from on-site operators so that data can be acquired in a timely manner.
- D. There will be support from operations to operate each pump for extended periods by recirculating back to the wet well if necessary.
- E. The pumps include provisions for MSI to temporarily install Dynamic Pressure Transmitters on the suction piping and/or discharge piping.
- F. There is an AC power outlet near the pumps (within 30 feet).
- G. MSI will provide all the test equipment needed to perform the vibration testing.
- H. MSI will be allowed to take and store digital photos of the pump systems and site.
- I. Any pre-site entry safety or other type of training requires less than one hour.
- J. The effort to analyze the data, prepare recommendations, and issue a report is included.

MSI's Tasks:

- 1) *Data review and pre-test teleconference:* Review of any information provided by East Lyme Water and Sewer that may include vibration history, system specifications, operating parameters, operating history, and recent maintenance. MSI's President and Senior Technicians will discuss the on-site test plan with East Lyme personnel via teleconference before arriving on-site.
- 2) *Travel and test equipment:* The assigned two MSI Senior Technicians will travel to and from the job site in East Lyme, CT from MSI's office in Whippany, NJ. MSI will provide the VibVue® kit, accelerometers, modal impact hammer, analyzer, laptop, and associated auxiliaries.
- 3) *Specialized Vibration Testing:* Testing will be performed on Pumps #2 and #3. Figure 4 depicts some of the typical test hardware used during this Task. The purpose of this testing is to perform a health analysis and to determine the natural frequencies of the structural system in order to identify a suitable solution.
 - a) *Structural Assessment via VibVue® Motion Magnified Video (MMV) Testing:* The VibVue® high speed video camera (Figure 6) and related software will be used to magnify the motion of the video allowing engineers (and managers) to better visualize the actual deflection, vibration, and deformation of select portions of the pump system in slow motion. More information about this unique test methodology is available at www.mechsol.com/products/vibvue
 - b) *Experimental Modal Analysis (EMA):* Perform experimental modal tests (impact testing) on available portions of the pump system (bearings, support structure, and piping) to obtain their structural natural frequencies (Figure 5). The pump system will be impacted at various locations in three orthogonal directions. This test will be done with the pump off, but with internal fluid.

- c) *Operating Deflection Shape (ODS) testing:* Perform “natural excitation signature” testing on the motor, pump, baseplate, floor, and part of the suction and discharge piping, while the pump operates at typical speed and load using roving tri-axial accelerometers at representative key locations including all accessible portions of the unit. MSI will record vibration vs. frequency spectra, and digitally record the same data vs. time for a reasonable time interval (approximately one minute at each location). This data will be taken such that one channel of the FFT analyzer is always kept at the same location and direction, for phase reference, such that the data can be stored as an operating deflection shape (ODS), which represents the natural excitation signature testing with point-to-point phase information. This shape will be plotted later by MSI personnel back at MSI’s facilities.

The following link provides more background information about ODS and impact testing:
<https://www.mechsol.com/services/testing/field-testing-troubleshooting>

- d) *Continuous Monitoring Test:* After installing the temporary instrumentation including items such as accelerometers, MSI will perform a continuous monitoring test during the start-up, normal operation, and coast-down of the unit, not necessarily in that order. Accelerometers located along the system, such as the motor and pump bearings will measure vibration during the normal and transient operating conditions. MSI will conduct cavitation assessment using mini-accelerometers and dynamic pressure transducers at the suction and discharge of piping. MSI will continuously monitor the instrumentation simultaneously and record the data (i.e., phase data) for analysis back at MSI’s offices.

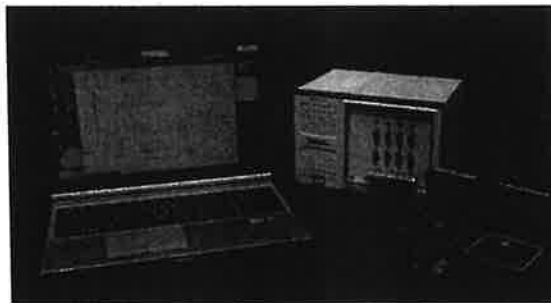


Figure 4. Typical equipment needed for Experimental Modal Analysis (EMA or impact) testing includes: a laptop computer with the data analysis software installed, analyzer(s) with appropriate channel count, associated cables, the required number of tri-axial accelerometers and uni-axial accelerometers, and an instrumented impact hammer.

- 4) *Data analysis and reporting:* MSI will use the test results to provide a recommended solution to the problem. MSI will write a technical report to document the testing and analysis in a form that is useful to East Lyme in following what was done, what the relevant results were, and how to apply these results to resolve the problem.

The text of the report will be written in a form that will be understandable by both specialists and non-specialists in vibration and/or pumps. Videos and ODS animations (in MP4 or WMV format) are included in the deliverables.

Solutions for structural resonance issues include moving the offending natural frequency(ies) so that there is at least a predicted separation margin of 10% from 1x rotating speed in the operating range and specific multiples of rotating speed. Usually this involves adding some sort of additional stiffening to shift the problem natural frequency(ies), while not creating a resonance problem with other currently benign natural frequencies. Addressing a soft-foot issue is more straight forward.

A key deliverable from MSI are the schematics, installation information, and other details for the recommended solution. Details include location, sizing, quantity, thickness, and materials. A teleconference will take place to discuss the recommended solution and MSI will be available for additional questions as the solution is being implemented by others.

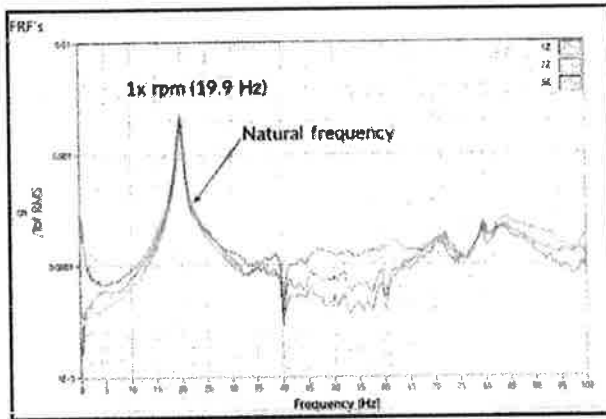


Figure 5. Example Frequency Response Function (FRF) plots based on impact test results. FRFs are used to help an experienced analyst use damping information to differentiate between a benign structural natural frequency versus a potential resonant (high vibration) natural frequency. An instrumented impact hammer is needed so an FRF can be produced.

Figure 6. A single VibVue® system is shown. It includes the high-speed tripod mounted camera, the portable lighting system, and the laptop computer with the software that magnifies and slows down the video for analysis.

Slow motion and magnified high speed video is used to help evaluate rotating machinery system vibration problems associated with resonance, deflection, foundation/support system flexibility and looseness, cracks, etc.



- 5) *Option - Using detailed Finite Element Analysis (FEA) to finalize the solution:* While the Data Analysis in Task 4 is being performed, MSI will have a stronger indication of the level of work required for the FEA and a firm cost can be provided. MSI will recommend this FEA task if it will significantly improve the probability that the recommended fix will work the first time it is attempted.

Step 1 is MSI preparing the FEA model. The extent of the model and input information needed will depend on the baseline results. MSI will need East Lyme's support and MSI field measurements to provide geometric and other information for the pump structural support system. MSI will need the mass and center of gravity (CG) of the pump and motor assemblies. The pump/ motor system will be modeled as a representative cylinder that matches the mass and CG provided by the pump and motor manufacturers and the model will accurately represent how they are mounted to the support system.

MSI will create a 3D solid model of the system. MSI will then transfer the solid model to the Creo Simulation software for meshing and calibrate the model using the ODS and impact test results.

Step 2 is evaluating potential structural modifications using the calibrated FEA model. The objective would be to move offending natural frequencies so there is at least a separation margin of 15% from the pump speed range frequencies and vane pass frequency.

The final step is providing the details needed to implement the recommended solution(s). For example, if any additional structural/stiffening components than sizing, quantity, thickness, and material details will be provided.

Personnel:

MSI President, Maki Onari, will have overall project responsibility. A Senior Technical Specialist and Project Engineer from among MSI's 30 person staff will perform the on-site work. Information about MSI personnel is available at <https://www.mechsol.com/>

During his years at MSI, Mr. Onari has become an expert with all MSI analysis and testing tools. He has performed as well as supervised a wide variety of finite element analysis projects, and currently performs or supervises all MSI site testing projects of rotating machinery being field-qualified or misbehaving in the field. He has written various magazine articles on these efforts, and has lectured at the Texas A&M Pump Symposia, most recently as a lead instructor at the 2021 Texas A&M Pump Symposium one day vibration short course. He has also presented a tutorial at the symposium entitled "Solving Structural Vibration Problems Using Operating Deflection Shape (ODS) and FEA".

About the Company:

MSI is an engineering design, development, and analysis company specializing in rotating machinery and related systems. MSI's activities include:

1. Problem-solving using the specialized vibration testing and redesign/analysis methods discussed in this proposal.
2. Problem-prevention with new or modified machinery systems using Computational Fluid Dynamics (CFD) analysis and FEA/rotordynamic analysis methods typically followed by specified post-modification or post-installation acceptance testing.
3. Developing complete new machines or flowpath designs under contracts from manufacturers.
4. MSI also uses, sells, and supports its VibVue® Motion Magnification Video (MMV) system.

In this case, MSI is proposing item 1 above.

MSI engineers are recognized experts in their various fields. MSI staff have authored or co-authored the vibration chapter of Sank's Pumping Station Design Handbook; "*Centrifugal Pump Design & Performance*", published by Oxford University Press; and "*Centrifugal Pump Mechanical Behavior and Vibration*" chapter in the 4th edition of the Pump Handbook (McGraw Hill, 2008). MSI is a Standards Partner with the Hydraulic Institute and the Vice-Chair of the Vibration committee. MSI case histories are available at this link <https://www.mechsol.com/resources/case-studies>

Type of Contract:

The current proposal is based on a lump sum contract for the effort described in the statement of work and the proposed on-site schedule.

Estimated Lump Sum Costs, Proposal Validity, and Payment Terms:

Table 1 on page 2 summarizes the lump sum costs for the baseline tasks and the optional tasks. A daily rate for the two MSI on-site personnel is \$3,400 USD total per day *including expenses* if additional time is required on-site due to factors outside of MSI's control.

The proposal is valid for work contracted and accomplished by September 31, 2022. An invoice will be issued after the Task 4 report is issued. Payment terms are net 30 days from the original invoice date.

Schedule:

The on-site testing is planned to require 12 to 16 hours over two weekdays for two MSI Senior Technicians. The post-test data analysis, evaluation, and report generation (Task 4) is expected to require up to ten additional work days. Any preliminary conclusions would be provided to East Lyme Water and Sewer immediately, on a provisional basis. The *optional* Task 5 Finite Element Analysis is expected to take 3 weeks of effort to complete.

Due to the nature of MSI's work, MSI schedules work on a first-come-first-served basis, and specific date scheduling can only be confirmed once a P.O. is received.

Miscellaneous Terms and Conditions, Method of Work, and Liability:

The attached letter of agreement (LOA) and MSI Method of Work and Liability statement are attached to this proposal, and would govern the relationship between East Lyme Water and Sewer and MSI on this project if mutually agreeable. Thank you for the opportunity to present this proposal.

1. General Statistics for

Jan-22

TASKS PERFORMED by WATER DEPARTMENT	January 2022	TOTAL THIS YEAR	TOTAL LAST YEAR (July 1st to June 30th)
Meters Installed (New Accounts)	17	21	22
New Meters In System	147	858	New / Total
			1840 / 6914 or 27%
New Service Connections Installed	0	5	8
Services and Mains Repaired ⁽¹⁾	3 Mains Breaks, 1 Service Leak	21	7
Gallons Pumped (x1000)	63,884	408,393	616,864

(1) Repair or replacement of service line from main to curb stop.

2. Monthly Average Day Demand (MADD)

	January	January 2021	% Difference LY
Water Produced (Million Gallons Daily)	2.061	1.453	41.80%

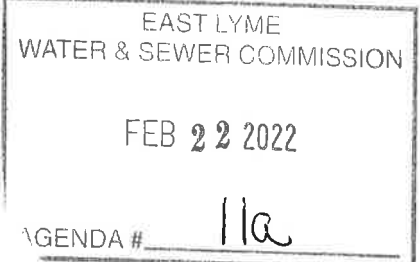
MADD as a % of 3.16 MGD available water (24-hour pumping) = 65.21%

MADD as a % of 2.37 MGD available water (18-hour pumping) = 86.95%

Note: Available water based on 2005 Water Supply Plan and subsequent revisions approved February 20, 2007. Figures not adjusted for additional water available from New London during the summer months.

3. Significant Items

- Precipitation was 2.80 inches for the month of January
- Staff is continuing meter replacement work. 147 meters have been installed in the month of January. Due to inclement weather and lower customer participation, meter installers performed other work including drilling meter covers, programming meters for install, and consolidating meter inventory.
- Staff is pumping water to New London through the Interconnect. East Lyme is starting to send water for the 2022 season, with about 9.3 million gallons pumped so far.
- Water demand has been unusually high, a leak detection contractor is scheduled to perform town-wide leak detection in two weeks.



EAST LYME WATER DEPARTMENT

Historic Monthly Water Production Report (x1,000)

	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	% +/- (Previous Year)	Monthly Precip. 21-22 (in.)
July	75953	72074	80638	81529	67948	67364	69703	64939	62206	-4.21%	6.36
Aug.	72609	69962	71557	73078	62844	61898	65912	66044	63933	-3.20%	4.53
Sept.	61524	54918	62752	56264	48592	52642	58151	56757	55281	-2.60%	8.84
Oct.	55600	50298	56829	53767	45152	48004	51836	48088	53507	11.27%	6.12
Nov.	53195	46624	56798	51876	39400	51065	45917	40639	52801	29.93%	2.51
Dec.	61753	51289	59049	53697	45664	40675	48171	40399	56781	40.55%	1.84
Jan.	64296	53405	55502	55699	48433	44334	44334	45053	63884	41.80%	2.8
Feb.	55226	50538	58426	56887	41951	44733	47832	41912			
Mar.	63206	55848	56130	55300	44903	54467	50150	48343			
Apr.	58447	54891	56931	49606	46231	52493	48753	49554			
May	65790	68621	65388	58395	51915	57692	55327	57411			
Jun.	71966	64086	74172	64325	57332	58021	64665	57685			
Total	759565	692554	754172	710423	600365	633388	650751	616824			33.00
% +/- (Previous Year)	9.99%	-8.82%	8.90%	-5.80%	-15.49%	5.50%	2.74%	-5.21%			
% +/- Running Annual Average									16.22%		

EAST LYME WATER DEPARTMENT

Historic Monthly Water Production Report (x1,000)

	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	AVG. Previous Years	21-22	% +/- (Previous Years)	Monthly Precip. 21-22 (in.)
July	75953	72074	80638	81529	67948	67364	69703	64939	72519	62206	-14.22%	6.36
Aug.	72609	69962	71557	73078	62844	61898	65912	66044	67988	63933	-5.96%	4.53
Sept.	61524	54918	62752	56264	48592	52642	58151	56757	56450	55281	-2.07%	8.84
Oct.	55600	50298	56829	53767	45152	48004	51836	48088	51197	53507	4.51%	6.12
Nov.	53195	46624	56798	51876	39400	51065	45917	40639	48189	52801	9.57%	2.51
Dec.	61753	51289	59049	53697	45664	40675	48171	40399	50087	56781	13.36%	1.84
Jan.	64296	53405	55502	55699	48433	44334	44334	45053	51382	63884	24.33%	2.8
Feb.	55226	50538	58426	56887	41951	44733	47832	41912	49688			
Mar.	63206	55848	56130	55300	44903	54467	50150	48343	53543			
Apr.	58447	54891	56931	49606	46231	52493	48753	49554	52113			
May	65790	68621	65388	58395	51915	57692	55327	57411	60067			
Jun.	71966	64086	74172	64325	57332	58021	64665	57685	64032			
Total	759565	692554	754172	710423	600365	633388	650751	616824	677255			33.00
% +/- (Previous Year)	9.99%	-8.82%	8.90%	-5.80%	-15.49%	5.50%	2.74%	-5.21%				
% +/- Running Annual Average											4.22%	

**STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION**

TREATMENT EFFLUENT MONITORING AND REPORTING FORM

1. Public Water System (PWS) Information:			
PWS ID:	CT0450011		
PWS Name:	East Lyme Water & Sewer Commission		
City/Town:	East Lyme		
2. Compliance Information:			
Water System Facility ID:	00703		
Month:	01	Year:	2022
Certified Operator:	Mark Alfieri		

3. Analytical Results:											
Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)	Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)
1		0.81	7.01		0.79	17		0.68	7.28		0.59
2		0.65	7.00		0.71	18		0.79	7.18		0.51
3		0.78	7.06		0.70	19		0.89	7.33		0.66
4		0.72	7.00		0.50	20		0.87	7.40		0.62
5		0.71	7.01		0.67	21		0.75	7.40		0.56
6		0.84	7.52		0.58	22		0.41	7.01		0.66
7		0.76	7.46		0.72	23		0.90	7.42		0.71
8		0.82	7.15		0.92	24		0.67	7.40		0.67
9		0.83	7.22		0.61	25		0.61	7.60		0.68
10		0.59	7.30		0.55	26		0.65	7.59		0.73
11		0.74	7.54		0.67	27		0.50	7.63		0.68
12		0.66	7.37	1.26	0.63	28		0.69	7.64	1.32	0.65
13		0.72	7.26		0.72	29		0.53	7.26		0.70
14		0.53	7.31		0.66	30		0.73	7.05		0.64
15		0.63	7.28		0.69	31		0.72	7.65		0.58
16		0.60	7.41		0.53						

4. Summary Information (Check all summary types that are applicable regardless of Status):									
Summary Type	Treatment Summary Name	Monitoring Requirements				Highest Daily Reading	Monthly Average	Lowest Daily Reading	Level Compliance (Y/N) 4
		Number of Days		Compliance (Y/N) 3					
		Required 2	Completed						
<input checked="" type="checkbox"/> CHLR	Monthly Chlorine Log	31	31	Y	0.90	0.70	0.41	Y	
<input checked="" type="checkbox"/> PHRD	Monthly pH Log	31	31	Y	7.65	7.31	7.00	Y	
<input checked="" type="checkbox"/> PHOS	Monthly Phosphate Log	2	2	Y	1.32	1.29	1.26	Y	
<input checked="" type="checkbox"/> FLRD	Monthly Fluoride Log	31	31	Y	0.92	0.65	0.50	Y	

1 Status indicates a Water System Facility was offline on any particular day of the month. Fill with "offline" when applicable.
2 The Number of Samples Required is contingent on the number of days the Water System Facility or treatment process was online. If the facility or treatment process was not online but monitoring is normally required Number of Days Required = "0" and the Summary Type must be checked.
3 The M&R (Monitoring & Reporting) Complied field is an indicator ensuring Number of Samples Taken > Number of Samples Required.
4 The Level Complied field is an indicator ensuring that the Highest and Lowest Readings are within required ranges for treatment effluents. Operating Limits are provided in the current Schedule of Water Quality Monitoring Requirements.

**STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION**

TREATMENT EFFLUENT MONITORING AND REPORTING FORM

1. Public Water System (PWS) Information:

PWS ID:
PWS Name:
City/Town:

2. Compliance Information:

Water System Facility ID:
Month: Year:
Certified Operator:

3. Analytical Results:

Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)	Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)
1		0.75	7.35		0.56	17		0.36	7.16		0.58
2		0.65	7.38		0.44	18		0.21	7.10		0.39
3		0.81	7.02		0.16	19		0.21	7.05		0.58
4		0.61	7.37		0.54	20		0.24	7.10		0.68
5		0.55	7.40		0.14	21		0.22	7.10		0.57
6		0.74	7.19		0.89	22		0.21	7.17		0.69
7		0.70	7.20		0.96	23		0.52	7.31		0.69
8		0.52	7.18		1.02	24		0.52	7.48		0.64
9		0.59	7.14		0.76	25		0.80	7.24		0.66
10		0.45	7.16		0.71	26		0.38	7.23		0.61
11		0.41	7.14		0.48	27		0.43	7.47		0.82
12		0.35	7.08		0.66	28		0.38	7.54		0.62
13		0.32	7.10		0.59	29		0.49	7.04		0.65
14		0.33	7.13		0.67	30		0.60	7.26		0.73
15		0.32	7.17		0.53	31		0.63	7.58		0.50
16		0.35	7.15		0.47						

4. Summary Information (Check all summary types that are applicable regardless of Status):

Summary Type	Treatment Summary Name	Monitoring Requirements			Highest Daily Reading	Monthly Average	Lowest Daily Reading	Level Compliance (Y/N) 4
		Number of Days		Compliance (Y/N) 3				
		Required 2	Completed					
<input checked="" type="checkbox"/> CHLR	Monthly Chlorine Log	31	31	Y	0.81	0.47	0.21	Y
<input checked="" type="checkbox"/> PHRD	Monthly pH Log	31	31	Y	7.58	7.23	7.02	Y
<input type="checkbox"/> PHOS	Monthly Phosphate Log							
<input checked="" type="checkbox"/> FLRD	Monthly Fluoride Log	31	31	Y	1.02	0.61	0.14	Y

- 1 Status indicates a Water System Facility was offline on any particular day of the month. Fill with "offline" when applicable.
2 The Number of Samples Required is contingent on the number of days the Water System Facility or treatment process was online. If the facility or treatment process was not online but monitoring is normally required Number of Days Required = "0" and the Summary Type must be checked.
3 The M&R (Monitoring & Reporting) Complied field is an indicator ensuring Number of Samples Taken > Number of Samples Required.
4 The Level Complied field is an indicator ensuring that the Highest and Lowest Readings are within required ranges for treatment effluents.
Operating Limits are provided in the current Schedule of Water Quality Monitoring Requirements.

**STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION**

TREATMENT EFFLUENT MONITORING AND REPORTING FORM

1. Public Water System (PWS) Information:
PWS ID:
PWS Name:
City/Town:

2. Compliance Information:
Water System Facility ID:
Month: Year:
Certified Operator:

3. Analytical Results:

Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)	Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)
1		0.55	7.46		0.64	17		0.41	7.31		0.76
2		0.57	7.43		0.63	18		0.68	7.05		0.78
3		0.55	7.45		0.77	19		0.63	7.50		0.78
4		0.82	7.47		0.91	20		1.00	7.50		0.62
5		0.57	7.52		0.60	21		0.84	7.60		0.69
6		0.73	7.47		0.83	22		0.83	7.70		0.64
7		0.74	7.54		0.71	23		0.84	7.66		0.65
8		0.61	7.46		1.10	24		1.04	7.70		0.67
9		0.72	7.35		0.94	25		0.91	7.87		0.72
10		0.60	7.35		0.93	26		0.87	7.87		0.74
11		0.69	7.41		0.76	27		0.92	7.84		0.72
12		0.92	7.40		0.73	28		0.80	7.65		0.62
13		0.71	7.42		0.82	29		0.74	7.20		0.72
14		0.70	7.26		0.60	30		0.81	7.09		0.64
15		0.63	7.17		0.71	31		1.00	7.57		0.61
16		0.45	7.07		0.73						

4. Summary Information (Check all summary types that are applicable regardless of Status):

Summary Type	Treatment Summary Name	Monitoring Requirements			Highest Daily Reading	Monthly Average	Lowest Daily Reading	Level Compliance (Y/N) 4
		Number of Days		Compliance (Y/N) 3				
		Required 2	Completed					
<input checked="" type="checkbox"/> CHLR	Monthly Chlorine Log	31	31	Y	1.04	0.74	0.41	Y
<input checked="" type="checkbox"/> PHRD	Monthly pH Log	31	31	Y	7.87	7.46	7.05	Y
<input type="checkbox"/> PHOS	Monthly Phosphate Log							
<input checked="" type="checkbox"/> FLRD	Monthly Fluoride Log	31	31	Y	1.10	0.73	0.60	Y

1 Status indicates a Water System Facility was offline on any particular day of the month. Fill with "offline" when applicable.
2 The Number of Samples Required is contingent on the number of days the Water System Facility or treatment process was online. If the facility or treatment process was not online but monitoring is normally required Number of Days Required = "0" and the Summary Type must be checked.
3 The M&R (Monitoring & Reporting) Complied field is an indicator ensuring Number of Samples Taken > Number of Samples Required.
4 The Level Complied field is an indicator ensuring that the Highest and Lowest Readings are within required ranges for treatment effluents.
Operating Limits are provided in the current Schedule of Water Quality Monitoring Requirements.

**STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION**

TREATMENT EFFLUENT MONITORING AND REPORTING FORM

1. Public Water System (PWS) Information:

PWS ID:

PWS Name:

City/Town:

2. Compliance Information:

Water System Facility ID:

Month: Year:

Certified Operator:

3. Analytical Results:

Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)	Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)
1		0.58	7.64		0.74	17		0.38	7.24		0.70
2		0.61	7.55		0.71	18		0.24	7.72		0.71
3		0.77	7.56		0.76	19		0.44	7.16		0.79
4		1.00	7.41		0.97	20		0.67	7.20		0.70
5		1.18	7.46		0.83	21		0.67	7.30		0.62
6		0.87	7.54		0.61	22		0.57	7.19		0.70
7		0.73	7.41		0.65	23		0.60	7.42		0.80
8		0.79	7.45		0.85	24		0.64	7.40		0.67
9		0.87	7.46		0.85	25		0.43	7.59		0.68
10		0.66	7.35		0.86	26	Offline				
11		0.94	7.60		0.81	27	Offline				
12		0.58	7.56		0.80	28	Offline				
13		0.92	7.27		0.85	29	Offline				
14		0.45	7.51		0.83	30	Offline				
15		0.41	7.48		0.65	31	Offline				
16		0.42	7.37		0.48						

4. Summary Information (Check all summary types that are applicable regardless of Status):

Summary Type	Treatment Summary Name	Monitoring Requirements			Highest Daily Reading	Monthly Average	Lowest Daily Reading	Level Compliance (Y/N) 4
		Number of Days		Compliance (Y/N) 3				
		Required 2	Completed					
<input checked="" type="checkbox"/> CHLR	Monthly Chlorine Log	25	25	Y	1.18	0.66	0.24	Y
<input checked="" type="checkbox"/> PHRD	Monthly pH Log	25	25	Y	7.72	7.43	7.16	Y
<input type="checkbox"/> PHOS	Monthly Phosphate Log							
<input checked="" type="checkbox"/> FLRD	Monthly Fluoride Log	25	25	Y	0.97	0.74	0.48	Y

1 Status indicates a Water System Facility was offline on any particular day of the month. Fill with "offline" when applicable.
 2 The Number of Samples Required is contingent on the number of days the Water System Facility or treatment process was online. If the facility or treatment process was not online but monitoring is normally required Number of Days Required = "0" and the Summary Type must be checked.
 3 The M&R (Monitoring & Reporting) Complied field is an indicator ensuring Number of Samples Taken > Number of Samples Required.
 4 The Level Complied field is an indicator ensuring that the Highest and Lowest Readings are within required ranges for treatment effluents. Operating Limits are provided in the current Schedule of Water Quality Monitoring Requirements.

**STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH
DRINKING WATER SECTION**

TREATMENT EFFLUENT MONITORING AND REPORTING FORM

1. Public Water System (PWS) Information:											
PWS ID:		CT0450011									
PWS Name:		East Lyme Water & Sewer Commission									
City/Town:		East Lyme									
2. Compliance Information:											
Water System Facility ID:		00707									
Month:		01		Year:		2022					
Certified Operator:		Mark Alfieri									
3. Analytical Results:											
Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)	Day	Status 1	Chlorine Residual (mg/L)	pH (pH units)	Phosphate (mg/L)	Fluoride (mg/L)
1		0.53	7.31		0.55	17		0.70	7.31		0.68
2		0.40	7.62		0.39	18		0.83	7.59		0.66
3		0.93	7.53		0.86	19		0.84	7.52		0.67
4		0.70	7.21		1.33	20		0.84	7.24		0.58
5		0.69	7.42		0.83	21		0.83	7.17		0.72
6		0.86	7.37		0.51	22		0.86	7.66		0.78
7		0.96	7.50		0.43	23		0.65	7.23		0.81
8		0.97	7.59		0.83	24		0.71	7.30		0.58
9		0.89	7.43		0.83	25		0.71	7.61		0.49
10		0.65	7.16		0.75	26		0.73	7.58		0.66
11		0.68	7.10		0.71	27		0.81	7.66		0.72
12		0.51	7.13		0.56	28		0.92	7.37		0.65
13		0.86	7.41		0.60	29		0.64	7.02		0.73
14		0.74	7.64		0.41	30		0.75	7.09		0.58
15		0.73	7.27		0.57	31		1.01	7.86		0.69
16		0.68	7.30		0.62						
4. Summary Information (Check all summary types that are applicable regardless of Status):											
Summary Type	Treatment Summary Name	Monitoring Requirements			Highest Daily Reading	Monthly Average	Lowest Daily Reading	Level Compliance (Y/N) 4			
		Number of Days Required 2	Completed	Compliance (Y/N) 3							
<input checked="" type="checkbox"/> CHLR	Monthly Chlorine Log	31	31	Y	1.01	0.76	0.40	Y			
<input checked="" type="checkbox"/> PHRD	Monthly pH Log	31	31	Y	7.86	7.39	7.02	Y			
<input type="checkbox"/> PHOS	Monthly Phosphate Log										
<input checked="" type="checkbox"/> FLRD	Monthly Fluoride Log	31	31	Y	1.33	0.67	0.39	Y			
<p>1 Status indicates a Water System Facility was offline on any particular day of the month. Fill with "offline" when applicable.</p> <p>2 The Number of Samples Required is contingent on the number of days the Water System Facility or treatment process was online. If the facility or treatment process was not online but monitoring is normally required Number of Days Required = "0" and the Summary Type must be checked.</p> <p>3 The M&R (Monitoring & Reporting) Complied field is an indicator ensuring Number of Samples Taken > Number of Samples Required.</p> <p>4 The Level Complied field is an indicator ensuring that the Highest and Lowest Readings are within required ranges for treatment effluents. Operating Limits are provided in the current Schedule of Water Quality Monitoring Requirements.</p>											

EAST LYME WATER DEPARTMENT
Well Production Report - January 2022

Withdrawals	Well 1A		Well 2A		Well 3A		Well 3B		Well 4A		Well 5		Well 6		Wells 3A/3B	Wells 2A/3A/3B	Daily Total (Wells)	Water From NL	Water To NL	Daily Total (Wells & NL)(3)			
	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(WL-ft)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)			
Max. Reg./Perm.(1,2)	1.160		0.864		0.560		0.993		0.547		0.780		0.440		0.993	1.857	4.784	1.000	1.000	5.784			
24-hr Pumping	1.160		0.648		0.446		0.993		0.324		0.619		0.440		1.439	2.087	4.630	0.500	NA	5.130			
18-hr Pumping	0.870		0.486		0.335		0.745		0.243		0.464		0.330		1.060	1.566	3.473	0.500	NA	3.973			
SFR 24-hr Pumping(2)	1.160		0.648		0.446		0.993		0.324		0.000		0.000		0.993	1.641	3.125	0.500	NA	3.625			
SFR 18-hr Pumping	0.870		0.486		0.335		0.745		0.243		0.000		0.000		0.745	1.231	2.344	0.500	NA	2.844			
Monthly Average	0.599		0.261		0.173		0.560		0.134		0.068		0.265		0.734	0.994	2.061	0.000	0.113	2.061			
Date	"Alert" Trigg	12.0		4.0		15.0		20.0		6.0		18.0		22.0									
1/1/2022		0.676	17.9	0.217	18.0	0.165	17.0	0.511	23.2	0.147	9.00	0.079	19.4	0.295	40.2	0.676	0.892	2.089	0.000	0.198	2.089	0.11	
1/2/2022		0.503	12.7	0.296	18.0	0.192	41.0	0.636	34.9	0.113	5.10	0.105	16.6	0.220	34.5	0.828	1.124	2.065	0.000	0.194	2.065	0.52	
1/3/2022		0.644	13.2	0.227	18.0	0.189	19.0	0.595	23.1	0.146	5.20	0.074	7.0	0.281	36.3	0.784	1.011	2.156	0.000	0.137	2.156	0.00	
1/4/2022		0.463	17.9	0.232	18.0	0.227	19.0	0.716	22.8	0.107	9.90	0.098	7.0	0.213	40.1	0.943	1.176	2.056	0.000	0.134	2.056	0.00	
1/5/2022		0.664	18.1	0.231	18.0	0.125	41.0	0.421	33.8	0.158	9.90	0.097	29.3	0.295	40.1	0.546	0.777	1.992	0.000	0.137	1.992	0.07	
1/6/2022		0.419	18.0	0.241	18.0	0.176	20.0	0.561	22.9	0.104	5.30	0.058	4.2	0.186	40.1	0.757	0.997	1.775	0.000	0.134	1.775	0.12	
1/7/2022		0.597	12.9	0.184	18.0	0.168	20.0	0.519	22.8	0.119	5.30	0.092	59.5	0.265	34.7	0.685	0.869	1.941	0.000	0.147	1.941	0.24	
1/8/2022		0.425	12.9	0.253	18.0	0.182	41.0	0.608	34.7	0.130	5.10	0.075	23.9	0.188	34.5	0.790	1.043	1.861	0.000	0.089	1.861	0.00	
1/9/2022		0.702	12.9	0.253	18.0	0.201	20.0	0.657	22.9	0.110	5.20	0.086	24.1	0.315	34.7	0.858	1.111	2.324	0.000	0.051	2.324	0.00	
1/10/2022		0.448	17.7	0.246	18.0	0.159	21.0	0.613	22.6	0.141	5.10	0.081	25.4	0.198	39.1	0.772	1.018	1.886	0.000	0.137	1.886	0.00	
1/11/2022		0.655	17.7	0.293	18.0	0.166	41.0	0.508	22.9	0.135	5.10	0.057	43.1	0.292	38.8	0.674	0.966	2.106	0.000	0.140	2.106	0.00	
1/12/2022		0.365	18.0	0.256	18.0	0.221	41.0	0.750	34.3	0.147	5.00	0.115	42.2	0.162	40.0	0.971	1.227	2.016	0.000	0.118	2.016	0.00	
1/13/2022		0.694	13.0	0.254	18.0	0.157	20.0	0.535	22.4	0.124	9.70	0.039	15.0	0.308	34.7	0.692	0.946	2.111	0.000	0.140	2.111	0.00	
1/14/2022		0.449	12.7	0.234	19.0	0.219	20.0	0.715	22.7	0.108	9.70	0.069	13.6	0.199	34.6	0.934	1.168	1.992	0.000	0.142	1.992	0.00	
1/15/2022		0.601	18.1	0.201	18.0	0.158	18.0	0.507	22.3	0.132	5.00	0.082	19.1	0.267	40.0	0.665	0.866	1.948	0.000	0.112	1.948	0.00	
1/16/2022		0.574	12.8	0.314	18.0	0.195	20.0	0.677	22.6	0.135	5.10	0.112	17.1	0.254	34.6	0.872	1.185	2.260	0.000	0.196	2.260	0.00	
1/17/2022		0.628	12.8	0.244	18.0	0.177	20.0	0.806	22.4	0.132	5.10	0.098	19.0	0.278	35.0	0.783	1.027	2.164	0.000	0.185	2.164	1.21	
1/18/2022		0.614	12.8	0.285	18.0	0.157	20.0	0.559	22.6	0.138	5.10	0.066	17.5	0.272	35.4	0.716	1.001	2.091	0.000	0.153	2.091	0.00	
1/19/2022		0.584	18.0	0.251	18.0	0.174	21.0	0.566	23.4	0.154	5.20	0.102	20.4	0.259	40.0	0.740	0.990	2.089	0.000	0.150	2.089	0.00	
1/20/2022		0.613	12.8	0.281	18.0	0.185	21.0	0.598	23.6	0.153	5.20	0.097	14.4	0.272	34.7	0.783	1.064	2.198	0.000	0.142	2.198	0.10	
1/21/2022		0.742	12.8	0.261	18.0	0.185	22.0	0.548	24.2	0.133	5.20	0.061	21.4	0.330	34.8	0.733	0.995	2.260	0.000	0.129	2.260	0.06	
1/22/2022		0.525	12.7	0.266	18.0	0.172	22.0	0.589	25.1	0.125	9.70	0.095	19.3	0.233	34.7	0.761	1.027	2.005	0.000	0.081	2.005	0.00	
1/23/2022		0.664	17.8	0.274	18.0	0.184	23.0	0.559	35.0	0.137	5.20	0.125	56.0	0.294	39.9	0.743	1.017	2.236	0.000	0.000	2.236	0.00	
1/24/2022		0.614	12.5	0.390	18.0	0.088	23.0	0.082	24.5	0.176	5.20	0.117	21.9	0.362	34.0	0.170	0.560	2.029	0.000	0.000	2.029	0.00	
1/25/2022		0.767	12.1	0.307	18.0	0.035	19.0	0.456	36.0	0.175	5.20	0.005	18.2	0.341	34.4	0.491	0.799	2.086	0.000	0.000	2.086	0.04	
1/26/2022		0.668	12.1	0.236	18.0	0.200	42.0	0.623	24.8	0.144	5.20	0.000	55.6	0.256	34.3	0.823	1.059	2.167	0.000	0.151	2.167	0.00	
1/27/2022		0.572	12.1	0.285	18.0	0.178	22.0	0.527	24.9	0.139	9.70	0.000	54.8	0.238	34.4	0.705	1.000	1.950	0.000	0.135	1.950	0.00	
1/28/2022		0.547	12.1	0.224	18.0	0.173	23.0	0.513	25.2	0.106	5.20	0.000	0.0	0.241	34.5	0.686	0.911	1.804	0.000	0.132	1.804	0.00	
1/29/2022		0.676	17.2	0.252	35.0	0.162	42.0	0.471	34.9	0.121	9.70	0.000	0.0	0.300	0.0	0.633	0.665	1.982	0.000	0.000	1.982	0.00	
1/30/2022		0.599	17.5	0.276	18.0	0.190	42.0	0.582	34.7	0.153	9.70	0.000	0.0	0.265	0.0	0.772	1.048	2.065	0.000	0.000	2.065	0.33	
1/31/2022		0.684	12.2	0.308	18.0	0.213	22.0	0.546	24.9	0.127	5.20	0.000	0.0	0.304	34.6	0.769	1.067	2.181	0.000	0.029	2.181	0.00	
Average		0.599	14.6	0.261	18.6	0.173	25.9	0.560	26.4	0.134	6.47	0.068	22.1	0.265	34.1	0.734	0.994	2.061	0.000	0.113	2.061	0.09	
Minimum		0.365	12.1	0.184	18.0	0.035	17.0	0.082	22.3	0.104	5.00	0.000	0.0	0.162	0.0	0.170	0.560	1.775	0.000	0.000	1.775	0.00	
Maximum		0.814	18.1	0.390	35.0	0.227	42.0	0.750	36.0	0.176	9.90	0.125	59.5	0.362	40.2	0.971	1.227	2.324	0.000	0.198	2.324	1.21	
Total		18.577		8.082		5.371		17.372		4.166		2.093		8.223		22.743		30.825		63.884		63.884	2.80

Notes:

MGD = Million Gallons Per Day

WL = Water (in feet) above the airline or pressure transducer (set approximately 4 ft above the pump suction for each well; 17 ft above suction for Well 4A).

SFR = stream flow restrictions (Wells 5 and 6 not operating).

NR = No Reading Available

(1) A condition of the Well 3A diversion permit limits the combined maximum withdrawal from Wells 2A, 3A, and 3B to 1.857 mgd.

(2) Another condition of the Well 3A permit restricts the combined maximum withdrawal from Wells 3A and 3B to 0.664 mgd during "low" stream flow.

If Well 3A is not pumped, Well 3B alone can be pumped at 0.993 mgd during "low" stream flow.

(3) Totals represent well production plus water from New London. Does not include water to New London.

% Recvd. of Total Monthly Demand	0.00	Total Monthly Demand	
% of Total Sent to NL (Wells)		5.47	63.884
Running Total (water received 2022)	0.000		
Goal	14.850		
% of Goal	0.00		
Running Total (water sent to NL 2022)	9.278		
Goal	17.471		
% of Goal	53.11		

February 2022

East Lyme Sewer Maintenance Report for January 2022

1. Sewer tie-ins, inspections and CBYDs at various locations
2. Daily chemical machine checks and maintenance
3. Monthly alarm tests and meter readings
4. Daily station maintenance checks
5. General Sewer Pump Station Maintenance
6. Old Black Point Rd Building Maintenance
7. General equipment maintenance
8. Monitor Odor Control System 31 Arbor Xing for H2S (Seasonal, turned off for winter)
9. Monitor Oder Control System. 170 Giants Neck Rd for H2S (Seasonal, turned off for winter)
10. Monitor H2S (Point O Woods)
11. Rotating Assembly Oil Changes. Lovers Lane, Boston Post Rd, Colton Rd, East Shore Dr, Old Black Point Rd, South Trail.

EAST LYME WATER & SEWER COMMISSION
FEB 22 2022
AGENDA # <u>11b</u>

Sewer Department Monthly Report

February 22 2022

Jan-21 Monthly Running Avg: 942,646 GPD
 Daily Avg: 942,646 GPD
 Daily Max: 1,132,774 GPD
 Daily Min: 682,710 GPD

Daily Average as a Percent of Monthly Running Average: 100.00%
 Daily Average as a Percent of 1.5 MGD Allotment at NLWWTP: 62.84%

State CT Flows:

	DOC	Camp Nett	Rocky Neck	POW	Total
Actual GPD AVG.	104,434	4,645	0	10,266	119,345
Design GPD AVG.	250,000	58,400	64,600	105,000	478,000
% of Design GPD	41.8%	7.95%	0	9.78%	24.97%
% of East Lyme Average Daily Flow	11.08%	0.49%	0.00%	1.09%	12.66%
% of East Lyme 1.5 MGD Allotment	6.96%	0.31%	0.00%	0.68%	7.96%

Footnotes:

EAST LYME SEWER FLOWS - HISTORY

	2014	2015	2016	2017	2018	2019	2020	2021	2022	% +/- Prev. Yr.	Precip. 2022 (in.)
JAN.	1,011,343	787,646	747,284	784,837	781,519	1,090,311	849,497	938,302	942,646	0.46%	2.80
FEB.	994,771	832,681	809,701	765,648	865,263	842,611	859,175	911,422			
MAR.	1,026,812	1,017,280	790,851	777,452	927,771	893,805	832,803	886,441			
APR.	1,126,058	938,861	796,611	897,161	778,780	918,456	885,983	962,591			
MAY	1,145,107	913,816	777,446	872,268	746,049	947,042	900,485	951,501			
JUN.	1,007,792	880,190	815,281	849,504	906,535	875,000	882,463	976,981			
JUL.	1,038,583	1,048,427	879,952	883,851	1,026,307	977,552	853,930	1,047,771			
AUG.	999,147	977,543	868,636	873,017	905,718	932,181	784,456	978,158			
SEPT.	837,706	878,563	762,544	769,493	875,918	833,237	632,562	1,051,008			
OCT.	852,281	861,521	738,247	752,273	903,915	806,576	692,324	917,384			
NOV.	787,769	803,842	709,481	732,848	871,111	815,129	700,168	937,414			
DEC.	835,260	788,121	728,649	728,437	894,050	927,335	896,694	895,121			
RUNNING AVERAGE	971,886	894,041	785,390	807,232	873,578	904,936	814,212	954,508		0.46%	
										Precip. Total	2.80

EAST LYME SEWER FLOWS - HISTORY

	2014	2015	2016	2017	2018	2019	2020	2021	AVG. Prev. Years	2022	% +/- AVG. Prev. Years	Precip. 2022 (in.)
JAN.	1,011,343	787,646	747,284	784,837	781,519	1,090,311	849,497	938,302	873,842	942,646	7.9%	2.80
FEB.	994,771	832,681	809,701	765,648	865,263	842,611	859,175	911,422	860,159			
MAR.	1,026,812	1,017,280	790,851	777,452	927,771	893,805	832,803	886,441	894,152			
APR.	1,126,058	938,861	796,611	897,161	778,780	918,456	885,983	962,591	913,063			
MAY	1,145,107	913,816	777,446	872,268	746,049	947,042	900,485	951,501	906,714			
JUN.	1,007,792	880,190	815,281	849,504	906,535	875,000	882,463	976,981	899,218			
JUL.	1,038,583	1,048,427	879,952	883,851	1,026,307	977,552	853,930	1,047,771	969,547			
AUG.	999,147	977,543	868,636	873,017	905,718	932,181	784,456	978,158	914,857			
SEPT.	837,706	878,563	762,544	769,493	875,918	833,237	632,562	1,051,008	830,129			
OCT.	852,281	861,521	738,247	752,273	903,915	806,576	692,324	917,384	815,565			
NOV.	787,769	803,842	709,481	732,848	871,111	815,129	700,168	937,414	794,720			
DEC.	835,260	788,121	728,649	728,437	894,050	927,335	896,694	895,121	836,708			
AVG.	971,886	894,041	785,390	807,232	873,578	904,936	814,212	954,508	875,723		7.9%	
												Precip. Total 2.80

East Lyme Sewer Department

Monthly Average Day Wastewater Flows (MGD)

Jan-22

		East Lyme Allocation (1.5 mgd)			State Allocation (0.478 mgd)					State	State	East Lyme	East Lyme
Year	Month	Niantic PS			DOC	Camp Nett	Rocky Neck	POW	Pine Grove	Allocation	Allocation	Allocation	Allocation
		Daily Avg	Daily Max	Daily Min	0.250	0.058	0.025	0.105	0.040	Total Used	Remaining	Used	Remaining
2022	January	0.943	1.133	0.683	0.104	0.005	0.000	0.010	0.040	0.159	0.319	1.261	0.239
	February												
	March												
	April												
	May												
	June												
	July												
	August												
	September												
	October												
	November												
	December												
Annual Avg. (Jan - Dec)		0.943	1.133	0.683	0.104	0.005	0.000	0.010	0.040	0.159	0.319	1.261	0.239
Annual Average (11 years)												1.142	0.358