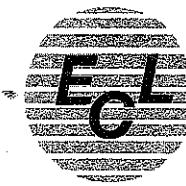


1005 BOSTON POST ROAD
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Fax 203-318-0830
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July 25, 2019

Town of Old Lyme WPCA
Attn: Richard Prendergast
Town Hall
82 Lyme Street
Old Lyme, Ct 06371

RE: Monitoring Well Test Results

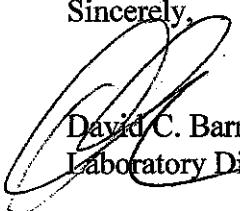
Dear Mr Prendergast,

Enclosed is the report of test results for samples collected on July 16, 2019.

As discussed we will collect the next round in August of 2019.

Please contact me should you have any questions.

Sincerely,


David C. Barris
Laboratory Director

Enclosure

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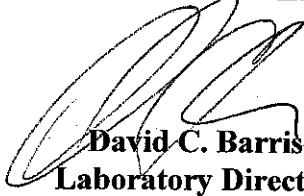
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REPORT OF TESTS

REPORT PREPARED FOR:

**Town of Old Lyme WPCA
83 Lyme Street
Old Lyme, CT 06371**

REPORT PREPARED BY:



**David C. Barris
Laboratory Director**

**ENVIRONMENTAL CONSULTING LABORATORIES, INC.
1005 Boston Post Road
Madison, CT 06443**

REPORT DATE: July 25, 2019

TABLE OF CONTENTS

	<u>Page Number</u>
I. Introduction	1
II. Sample and Site Identification	1
III. Sampling Methodology	1

Appendices:

- Appendix A - Chain of Custody**
- Appendix B - Site Map**
- Appendix C - Sampling Log Records**
- Appendix D- Sampling SOP**

INTRODUCTION

ENVIRONMENTAL CONSULTING LABORATORIES, INC., is a State of Connecticut certified public health laboratory. Dedicated to servicing our clients, we offer comprehensive, cost-effective environmental consulting and testing services. Analytical capabilities include testing of industrial effluents, groundwater, hazardous wastes, sewage, sludge, sediment, soils. All sampling and analytical procedures are in accordance with Federal and State regulations.

Environmental Consulting Laboratories, Inc., maintains strict quality control and assurance procedures to ensure data that can be used with confidence. Strict adherence to EPA approved methods, blanks, standards, spikes, and duplicate sample analyses are routine lab practice. In addition, Environmental Consulting Laboratories, Inc., participates in EPA and Connecticut proficiency performance evaluations.

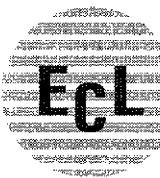
SAMPLE & SITE IDENTIFICATION

Ground water samples were collected by Environmental Consulting Laboratories, Inc., on July 16, 2019. Monitoring wells are identified as HN-1-98, HN-2-98, HN-3-98, HN-4N, HN-5N, HN-6, HN-7, HN-8, HN-9, HN-10 and HN-11. See Site Map in Appendix B

SAMPLING METHODOLOGY

Groundwater samples were taken in accordance with Town of Old Lyme Groundwater Monitoring Standard Operating Procedures. See document in Appendix D.

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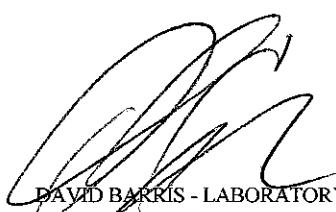
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Report of Analysis

Name: Old Lyme Town Hall
c/o WPCA
52 Lyme Street
Old Lyme, CT 06371
Attn: Richard Prendergast
Sample Date: 7/16/2019
Receipt Date: 7/16/2019
Report Date: 7/24/2019
Sample Site: HN-1-98

Sample ID#: 126030
Sample Type: Groundwater
Sample Source: Monitoring Wells
Sampler: ECL - MB

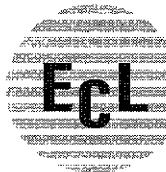
Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	<10	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	<10	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	ND	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	17.3	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	4.86	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	ND	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	0.05	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	<0.50	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	4.86	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	160	umhos/cm	SM2510B	1	7/17/2019	JB
PH	5.30	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	3.4	NTU	180.1	0.05	7/17/2019	JB


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ND = Not Detected

Comments <= less than our Method Detection Limit.

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Report of Analysis

Name:	Old Lyme Town Hall c/o WPCA 52 Lyme Street Old Lyme, CT 06371 Attn: Richard Prendergast	Sample ID#:	126031
Sample Date:	7/16/2019	Sample Type:	Groundwater
Receipt Date:	7/16/2019	Sample Source:	Monitoring Wells
Report Date:	7/24/2019	Sampler:	ECL - MB
Sample Site:	HN-2-98		

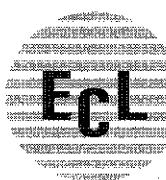
Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	86	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	10	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	<10	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	0.07	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	26.0	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	5.57	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	ND	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	ND	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	<0.50	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	5.64	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	179	umhos/cm	SM2510B	1	7/17/2019	JB
PH	5.90	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	3.0	NTU	180.1	0.05	7/17/2019	JB

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Report of Analysis

Name: Old Lyme Town Hall
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52 Lyme Street
Old Lyme, CT 06371
Attn: Richard Prendergast
Sample Date: 7/16/2019
Receipt Date: 7/16/2019
Report Date: 7/24/2019
Sample Site: HN-3-98

Sample ID#: 126032
Sample Type: Groundwater
Sample Source: Monitoring Wells
Sampler: ECL - MB

Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	933	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	30	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	52	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	40	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	0.14	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	27.0	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	2.00	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	ND	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	0.16	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	0.63	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	2.63	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	194	umhos/cm	SM2510B	1	7/17/2019	JB
PH	6.20	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	12	NTU	180.1	0.05	7/17/2019	JB

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Name: Old Lyme Town Hall
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52 Lyme Street
Old Lyme, CT 06371
Attn: Richard Prendergast
Sample Date: 7/16/2019
Receipt Date: 7/16/2019
Report Date: 7/24/2019
Sample Site: HN-4N

Sample ID#: 126033
Sample Type: Groundwater
Sample Source: Monitoring Wells
Sampler: ECL - MB

Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	<10	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	<10	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	ND	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	34.7	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	2.63	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	ND	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	0.20	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	<0.50	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	2.63	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	165	umhos/cm	SM2510B	1	7/17/2019	JB
PH	6.20	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	60	NTU	180.1	0.05	7/17/2019	JB


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52 Lyme Street
Old Lyme, CT 06371
Attn: Richard Prendergast
Sample Date: 7/16/2019
Receipt Date: 7/16/2019
Report Date: 7/24/2019
Sample Site: HN-5N

Sample ID#: 126034
Sample Type: Groundwater
Sample Source: Monitoring Wells
Sampler: ECL - MB

Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	<10	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	<10	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	6.88	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	36.1	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	0.19	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	ND	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	0.77	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	8.29	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	8.48	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	336	umhos/cm	SM2510B	1	7/17/2019	JB
PH	6.50	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	1200	NTU	180.1	0.05	7/17/2019	JB


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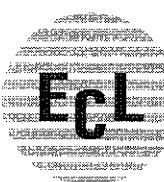
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Name: Old Lyme Town Hall
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Attn: Richard Prendergast

Sample ID#: 126035
Sample Type: Groundwater
Sample Source: Monitoring Wells
Sampler: ECL - MB

Sample Date: 7/16/2019
Receipt Date: 7/16/2019
Report Date: 7/24/2019
Sample Site: HN-6

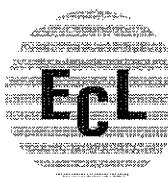
Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	<10	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	<10	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	0.08	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	46.8	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	3.59	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	0.12	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	0.40	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	1.57	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	5.28	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	264	umhos/cm	SM2510B	1	7/17/2019	JB
PH	5.90	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	80	NTU	180.1	0.05	7/17/2019	JB

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Name: Old Lyme Town Hall
c/o WPCA
52 Lyme Street
Old Lyme, CT 06371
Attn: Richard Prendergast
Sample Date: 7/16/2019
Receipt Date: 7/16/2019
Report Date: 7/24/2019
Sample Site: HN-7

Sample ID#: 126036
Sample Type: Groundwater
Sample Source: Monitoring Wells
Sampler: ECL - MB

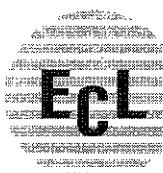
Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	<10	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	<10	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	ND	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	103	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	1.17	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	ND	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	2.42	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	0.57	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	1.74	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	413	umhos/cm	SM2510B	1	7/17/2019	JB
PH	5.60	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	1600	NTU	180.1	0.05	7/17/2019	JB


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Name: Old Lyme Town Hall
c/o WPCA
52 Lyme Street
Old Lyme, CT 06371
Attn: Richard Prendergast
Sample Date: 7/16/2019
Receipt Date: 7/16/2019
Report Date: 7/24/2019
Sample Site: HN-8

Sample ID#: 126037
Sample Type: Groundwater
Sample Source: Monitoring Wells
Sampler: ECL - MB

Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	<10	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	<10	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	ND	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	34.0	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	0.88	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	ND	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	0.75	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	1.84	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	2.72	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	173	umhos/cm	SM2510B	1	7/17/2019	JB
PH	5.70	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	650	NTU	180.1	0.05	7/17/2019	JB

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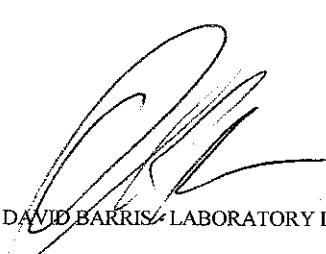
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Report of Analysis

Name: Old Lyme Town Hall
c/o WPCA
52 Lyme Street
Old Lyme, CT 06371
Attn: Richard Prendergast
Sample Date: 7/16/2019
Receipt Date: 7/16/2019
Report Date: 7/24/2019
Sample Site: HN-9

Sample ID#: 126038
Sample Type: Groundwater
Sample Source: Monitoring Wells
Sampler: ECL - MB

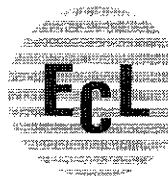
Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	<10	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	<10	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	ND	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	3984	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	0.19	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	ND	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	0.48	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	2.23	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	2.42	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	5700	umhos/cm	SM2510B	1	7/17/2019	JB
PH	6.80	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	140	NTU	180.1	0.05	7/17/2019	JB


DAVID BARRIS, LABORATORY DIRECTOR

ND = Not Detected

Comments < = less than our Method Detection Limit.

1005 BOSTON POST ROAD
MADISON, CT 06443
Phone 203-245-0568
FAX 203-318-0830
Connecticut Certification PH-0535
www.eclinconline.com



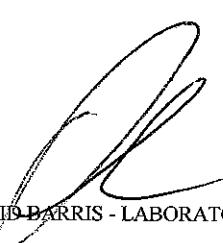
**ENVIRONMENTAL
CONSULTING LABORATORIES, INC.**

Report of Analysis

Name: Old Lyme Town Hall
c/o WPCA
52 Lyme Street
Old Lyme, CT 06371
Attn: Richard Prendergast
Sample Date: 7/16/2019
Receipt Date: 7/16/2019
Report Date: 7/24/2019
Sample Site: HN-10

Sample ID#: 126039
Sample Type: Groundwater
Sample Source: Monitoring Wells
Sampler: ECL - MB

Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	<10	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	<10	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	1.78	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	1852	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	0.16	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	ND	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	0.48	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	4.93	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	5.09	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	3190	umhos/cm	SM2510B	1	7/17/2019	JB
PH	5.70	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	180	NTU	180.1	0.05	7/17/2019	JB


DAVID BARRIS - LABORATORY DIRECTOR

ND = Not Detected

Comments <= less than our Method Detection Limit.

1005 BOSTON POST ROAD

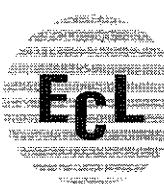
MADISON, CT 06443

Phone 203-245-0568

FAX 203-318-0830

Connecticut Certification PH-0535

www.eclinconline.com



**ENVIRONMENTAL
CONSULTING LABORATORIES, INC.**

Report of Analysis

Name: Old Lyme Town Hall
c/o WPCA
52 Lyme Street
Old Lyme, CT 06371
Attn: Richard Prendergast

Sample ID#: 126040
Sample Type: Groundwater
Sample Source: Monitoring Wells
Sampler: ECL - MB

Sample Date: 7/16/2019
Receipt Date: 7/16/2019
Report Date: 7/24/2019
Sample Site: HN-11

Parameter	Sample Result	Units	Method	MDL	Analysis Date	Analyst
Biological						
Coliform, E. Coli	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Coliform, Total	74	MPN/100mL	Colilert-18	10	7/16/2019	JB
Enterococcus Bacteria	<10	MPN/100mL	Enterolert	10	7/16/2019	JB
Fecal Coliform Bacteria	<10	MPN/100mL	Colilert-18	10	7/16/2019	JB
Fecal Strep Bacteria	<10	col/100ml	SM9230	10	7/16/2019	JB
Chemical						
Ammonia as N	0.20	mg/L	ASTM D6919-03	0.05	7/18/2019	KC
Chloride	3141	mg/L	EPA300.0	0.5	7/17/2019	JB
Nitrate as N	0.17	mg/L	EPA300.0	0.1	7/17/2019	JB
Nitrite as N	ND	mg/L	EPA300.0	0.01	7/17/2019	JB
Phosphorous -Total as P	0.29	mg/L	EPA 200.7	0.04	7/23/2019	JB
TKN as N	2.12	mg/L	4500NorgC	0.5	7/19/2019	KC
Total Nitrogen as N	2.29	mg/L	CALC	1	7/23/2019	KC
Physical						
Conductivity	4930	umhos/cm	SM2510B	1	7/17/2019	JB
PH	6.40	pH	EPA 150.2	1	7/16/2019	MB
Turbidity	140	NTU	180.1	0.05	7/17/2019	JB

DAVID BARRIS - LABORATORY DIRECTOR

ND = Not Detected

Comments <= less than our Method Detection Limit.

APPENDIX A

ENVIRONMENTAL CONSULTING LABORATORIES

1005 Boston Post Road
Madison, CT 06443

(203) 245-0568 Phone
(203) 318-0830 Fax

Client: Old Lyme 18WH Hall
Contact: C/O WBCA Richard Branderdast

Address: 52 Lyme St. Old Lyme, CT 06371
Contact: www.richardrenzagast.com

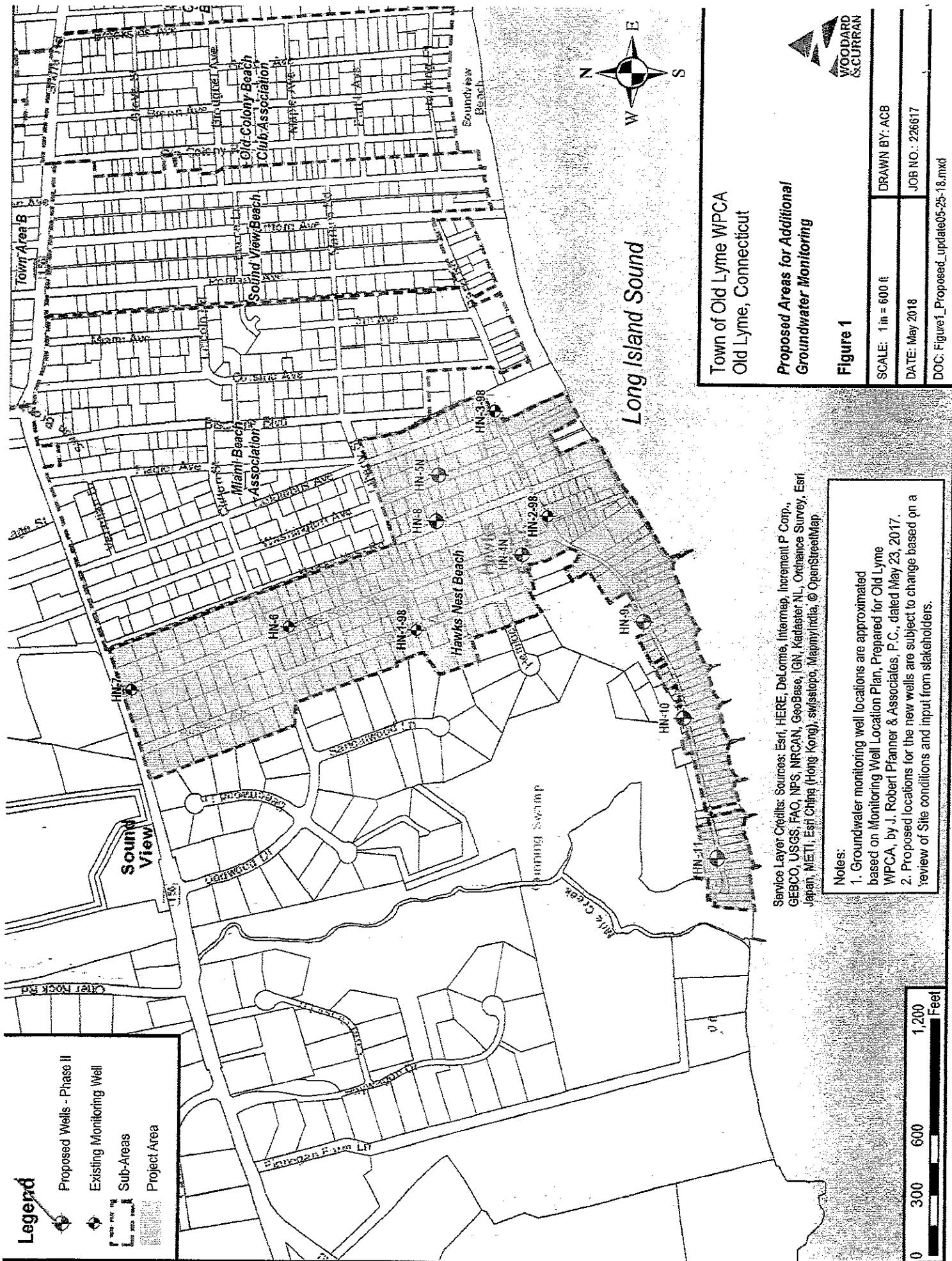
Phone: 203-641-1237 Email: chairWPPCA@bellsouth.net Samplers Name _____

Samplers Name: (Print) airWPtA@oldlyme-ct.gov

System Type: Trans. mechanism

100

APPENDIX B



APPENDIX C

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HN-1-98

3. Sampled By: MB-jm

4. Date: 7-16

5. Time: 10:45 am

6. Weather:

Cloudy	Cold	Snow
<u>Sunny</u>	<u>Warm</u>	Rain
Hot	Windy	

7. Sample Method: **Bailer (Disposable)**

8. Depth to bottom of well from measuring point: 20.1 Feet

9. Depth to Water: 11.60 Feet

10. #8 - #9= LWC: 8.50 Feet (**Length of water column**)

11. Diameter of inner casings: 2" 4" 6"

12. Volume of water in well:

2" Diameter well = $0.163 \times \text{LWC} =$ 1.39 Gallons

4" Diameter Well = $0.633 \times \text{LWC} =$ _____ Gallons

6" Diameter Well = $1.467 \times \text{LWC} =$ _____ Gallons

13. Purge Volume: $3 \times \#12 =$ 4.17 Gallons to purge

Town of Old Lyme

FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) - Old Lyme
Well Number H/N-1-98 Date 7-16-19

Well Number	HW-1-98
Location (State/County Name)	Old Lyne
Date	7-16-79

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HN-2-98

3. Sampled By: mb-jm

4. Date: 7-16

5. Time: 9:30 am

6. Weather:

Cloudy	Cold	Snow
Sunny	Warm	Rain
Hot	Windy	

7. Sample Method: Bailer (Disposable)

8. Depth to bottom of well from measuring point: 15.6 Feet

9. Depth to Water: 7.60 Feet

10. #8 - #9 = LWC: 8.0 Feet (Length of water column)

11. Diameter of inner casings: 2" 4" 6"

12. Volume of water in well:

$$2" \text{ Diameter well} = 0.163 \times \text{LWC} = \underline{1.304} \text{ Gallons}$$

$$4" \text{ Diameter Well} = 0.633 \times \text{LWC} = \underline{\quad} \text{ Gallons}$$

$$6" \text{ Diameter Well} = 1.467 \times \text{LWC} = \underline{\quad} \text{ Gallons}$$

13. Purge Volume: $3 \times \#12 = \underline{3.912}$ Gallons to purge

Town of Old Lyme

FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) - Old Lyme
Well Number HW-2-98 Date 7-16

Clock Time 24 HR	Depth To Water	pH	Temperature	Comments
9:30	7.66 ft	5.9	20.2°C	*METER *

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HN-3-98

3. Sampled By: mb-jm

4. Date: 7-16

5. Time: 9:45 am

6. Weather:

Cloudy	Cold	Snow
<u>Sunny</u>	<u>Warm</u>	Rain
Hot	Windy	

7. Sample Method: **Bailer (Disposable)**

8. Depth to bottom of well from measuring point: 13.0 Feet

9. Depth to Water: 6.50 Feet

10. #8 - #9 = LWC: 6.50 Feet (**Length of water column**)

11. Diameter of inner casings: (2") 4" 6"

12. Volume of water in well:

2" Diameter well = $0.163 \times \text{LWC} = \underline{1.06}$ Gallons

4" Diameter Well = $0.633 \times \text{LWC} = \underline{\hspace{2cm}}$ Gallons

6" Diameter Well = $1.467 \times \text{LWC} = \underline{\hspace{2cm}}$ Gallons

13. Purge Volume: $3 \times \#12 = \underline{3.18}$ Gallons to purge

Town of Old Lyme

FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) - Old Lyme
Well Number H/W 3-98 Date 7-16-19

Clock	Depth To Water	pH	Temperature	Comments
24 HR 9:45 AM	6.50 ft	6.2	18.1°C	*METER*

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HN-4W

3. Sampled By: mb jm

4. Date: 7-16

5. Time: 11:05 am

6. Weather:

Cloudy	Cold	Snow
<u>Sunny</u>	<u>Warm</u>	Rain
Hot	Windy	

7. Sample Method: **Bailer (Disposable)**

8. Depth to bottom of well from measuring point: 16.3 Feet

9. Depth to Water: 10.60 Feet

10. #8 - #9= LWC: 5.70 Feet (**Length of water column**)

11. Diameter of inner casings: 2" 4" 6"

12. Volume of water in well:

$$2" \text{ Diameter well} = 0.163 \times \text{LWC} = \underline{0.93} \text{ Gallons}$$

$$4" \text{ Diameter Well} = 0.633 \times \text{LWC} = \underline{\quad} \text{ Gallons}$$

$$6" \text{ Diameter Well} = 1.467 \times \text{LWC} = \underline{\quad} \text{ Gallons}$$

13. Purge Volume: $3 \times \#12 = \underline{37.9}$ Gallons to purge

Town of Old Lyme FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) - Old Lyme
 Well Number HN-4N Date 16-19

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HN-5W

3. Sampled By: mb-jm

4. Date: 7-16-19

5. Time: 10:05am

6. Weather:

Cloudy	Cold	Snow
<u>Sunny</u>	Warm	Rain
<u>Hof</u>	Windy	

7. Sample Method: **Bailer (Disposable)**

8. Depth to bottom of well from measuring point: 12.9 Feet

9. Depth to Water: 5.70 Feet

10. #8 - #9= LWC: 7.20 Feet (**Length of water column**)

11. Diameter of inner casings: 2" 4" 6"

12. Volume of water in well:

2" Diameter well = $0.163 \times \text{LWC} =$ 1.17 Gallons

4" Diameter Well = $0.633 \times \text{LWC} =$ _____ Gallons

6" Diameter Well = $1.467 \times \text{LWC} =$ _____ Gallons

13. Purge Volume: $3 \times \#12 =$ 3.50 Gallons to purge

Town of Old Lyme

FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) - Old Lyme
Well Number **HW-5N** Date **7-16-19**

Well Number HW-5N Date 7-16-19

Clock Time 24 HR	Depth To Water	pH	Temperature	Comments
<u>10:05A</u>	<u>5.70</u>	<u>6.50</u>	<u>15.8°C</u>	<u> </u>

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HN-6

3. Sampled By: mb jm

4. Date: 7-16

5. Time: 11:20 am

6. Weather:

Cloudy	Cold	Snow
<u>Sunny</u>	<u>Warm</u>	Rain
Hot	Windy	

7. Sample Method: **Bailer (Disposable)**

8. Depth to bottom of well from measuring point: 13.0 Feet

9. Depth to Water: 10.50 Feet

10. #8 - #9 = LWC: 2.5 Feet (Length of water column)

11. Diameter of inner casings: 2" 4" 6"

12. Volume of water in well:

$$2" \text{ Diameter well} = 0.163 \times \text{LWC} = \underline{\quad 41 \quad} \text{ Gallons}$$

$$4" \text{ Diameter Well} = 0.633 \times \text{LWC} = \underline{\quad} \text{ Gallons}$$

$$6" \text{ Diameter Well} = 1.467 \times \text{LWC} = \underline{\quad} \text{ Gallons}$$

13. Purge Volume: $3 \times \#12 = \underline{1.20}$ Gallons to purge

Town of Old Lyme

FIELD WALL

Location (Site/Facility Name) - Old Lyme
Well Number HV-6 Date 7-16-19

Location (Site/Facility Name) - Old Lyme
 Well Number HN-6 Date 7-16-19

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HIN-7

3. Sampled By: mb jm

4. Date: 7-16

5. Time: 11:35 AM

6. Weather:

<u>Sunny</u>	Cold	Snow
Hot	<u>Warm</u>	Rain
	Windy	

7. Sample Method: **Bailer (Disposable)**

8. Depth to bottom of well from measuring point: 16.8 Feet

9. Depth to Water: 9.40 Feet

10. #8 - #9= LWC: 7.40 Feet (**Length of water column**)

11. Diameter of inner casings: 2" 4" 6"

12. Volume of water in well:

2" Diameter well = $0.163 \times \text{LWC}$ = 1.20 Gallons

4" Diameter Well = $0.633 \times \text{LWC}$ = _____ Gallons

6" Diameter Well = $1.467 \times \text{LWC}$ = _____ Gallons

13. Purge Volume: $3 \times \#12$ = 3.60 Gallons to purge

Town of Old Lyme

FIELD WATER QUALITY MEASUREMENTS FORM

FIELDWALL

Location (Site/Facility Name) - Old Lyme
Well Number J/N-7 Date 7-16-19

Location (Site/Facility Name) - Old Lyme
 Well Number H/N-7 Date 7-16-19

Clock Time 24 HR	Depth To Water	pH	Temperature	Comments
11:35 AM	9 to 40	5.6	16.4 ° C	—

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HN-8

3. Sampled By: mb-jm

4. Date: 7-16-19

5. Time: 10:30A

6. Weather:

Cloudy	Cold	Snow
<u>Sunny</u>	Warm	Rain
<u>Hot</u>	Windy	

7. Sample Method: Bailer (Disposable)

8. Depth to bottom of well from measuring point: 11.9 Feet

9. Depth to Water: 6.70 Feet

10. #8 - #9= LWC: 5.20 Feet (Length of water column)

11. Diameter of inner casings: 2" 4" 6"

12. Volume of water in well:

2" Diameter well = $0.163 \times \text{LWC} =$ 84 Gallons

4" Diameter Well = $0.633 \times \text{LWC} =$ _____ Gallons

6" Diameter Well = $1.467 \times \text{LWC} =$ _____ Gallons

13. Purge Volume: $3 \times \#12 =$ 2.54 Gallons to purge

Town of Old Lyme

Location (Site/Facility Name) - Old Lyme
Well Number HW-3 Date 7-16-19

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HN-9

3. Sampled By: mb-jm

4. Date: 7-16

5. Time: 9:15 ~

6. Weather:

Cloudy	Cold	Snow
Sunny	Warm	Rain
Hot	Windy	

7. Sample Method: **Bailer (Disposable)**

8. Depth to bottom of well from measuring point: 11.4 Feet

9. Depth to Water: 3.5 Feet

10. #8 - #9= LWC: 7.9 Feet (**Length of water column**)

11. Diameter of inner casings: 2" 4" 6"

12. Volume of water in well:

2" Diameter well = $0.163 \times \text{LWC} = 1.29$ Gallons

4" Diameter Well = $0.633 \times \text{LWC} =$ _____ Gallons

6" Diameter Well = $1.467 \times \text{LWC} =$ _____ Gallons

13. Purge Volume: $3 \times \#12 =$ 3.86 Gallons to purge

Town of Old Lyme EIEI & WATER CITY MEASUREMENTS FORM

FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) - Old Lyme
Well Number HW-9 Date 7-16-19

Clock Time 24 HR	Depth To Water	pH	Temperature	Comments
9:15 AM	3.5 ft	6.8	60.8°C	* METER *

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HN-10

3. Sampled By: mb-jm

4. Date: 7-16-19

5. Time: 8:50 AM

6. Weather:

Cloudy	Cold	Snow
<u>Sunny</u>	Warm	Rain
Hot	Windy	

7. Sample Method: **Bailer (Disposable)**

8. Depth to bottom of well from measuring point: 11.50 Feet

9. Depth to Water: 4.10 Feet

10. #8 - #9 = LWC: 7.40 Feet (Length of water column)

11. Diameter of inner casings: 2" 4" 6"

12. Volume of water in well:

$$2" \text{ Diameter well} = 0.163 \times \text{LWC} = \underline{1.20} \text{ Gallons}$$

$$4" \text{ Diameter Well} = 0.633 \times \text{LWC} = \underline{\quad} \text{ Gallons}$$

$$6" \text{ Diameter Well} = 1.467 \times \text{LWC} = \underline{\quad} \text{ Gallons}$$

13. Purge Volume: $3 \times \#12 = \underline{3.62}$ Gallons to purge

**TOWN OF OLD LYME
WATER QUALITY MEASUREMENTS FORM**

FIELD WAI

Location (Site/Facility Name) - Old Lyme
Well Number HN-10 Date 7-16-19

Location (Site/Facility Name) - Old Lyme
 Well Number HN-10 Date 7-16-99

Clock Time 24 HR	Depth To Water	pH	Temperature	Comments
8:50 AM	4.10	5.7	16.7 °C	—

GROUND WATER SAMPLE LOG

1. Sample Location: OL

2. Well Number: HW-11

3. Sampled By: mb-jm

4. Date: 7-16-19

5. Time: 8:35 AM

6. Weather:

Cloudy	Cold	Snow
Sunny	Warm	Rain
Hot	Windy	

7. Sample Method: **Bailer (Disposable)**

8. Depth to bottom of well from measuring point: 11.40 Feet

9. Depth to Water: 4.80 Feet

10. #8 - #9= LWC: 6.6 Feet (**Length of water column**)

11. Diameter of inner casings: 2" 4" 6"

12. Volume of water in well:

2" Diameter well = $0.163 \times \text{LWC} =$ 1.07 Gallons

4" Diameter Well = $0.633 \times \text{LWC} =$ _____ Gallons

6" Diameter Well = $1.467 \times \text{LWC} =$ _____ Gallons

13. Purge Volume: $3 \times \#12 =$ 3.2- Gallons to purge

Town of Old Lyme EIEL R. WATER QUALITY MEASUREMENTS FORM

APPENDIX D

Town of Old Lyme Ground Water Monitoring

SAMPLING SOP Rev 4 - Environmental Consulting Lab

Groundwater Monitoring Wells

Bailer Purge Technique

Overview:

Stagnant water must be removed from the monitoring well in order to obtain an accurate sample of groundwater for laboratory analysis.

This SOP will address the bailing and sampling procedures to be taken.

Safety:

Prior to sampling, field personnel should conduct a preliminary assessment of the area to determine any safety hazards.

Placement of traffic cones, safety vests and truck hazard lights should be used.

Minimize monitoring well water contact with potential personal protective equipment i.e. safety glasses & nitrile gloves.

Procedure:

Prior to purging the well, observe for any physical problems with monitoring well, ie: lock present, well cap broken or missing, condition of casing, etc.

Measure groundwater to the nearest hundredth of inch record on field sheet with time of measurement. Calculate the volume of standing water to purge a minimum of three volumes using prior readings of depth to bottom, to avoid agitating fines that may have accumulated on the bottom of the well.

A separate new bailer will be used for each well to minimize the potential for cross contamination of sampling equipment.

Lower bailer into monitoring well in a manner as to create minimum water disturbance. Repeat this process until three well volumes have been purged.

Following purging of three well volumes, measure pH and Temperature of the groundwater and record on field worksheet.

Sample Collection:

1. Do not rinse or empty bottles. Several bottles contain a preservative that must remain in the bottle.
2. If there is an overflow while filling a sample bottle that contains preservatives, restart the procedure using a new sample bottle.
3. If one bottle is to be used for several different tests, be sure there are no conflicts with preservation requirements.

Field Logs:

Use the Ground Water Sample Log (attached) to record all field information. Include Well ID, Date and Time, Weather, readings, observations and calculations for purge volume

Complete the Chain of Custody form (attached). Include sample ID/location, date and time.

The following pages contain specific sampling instructions and procedures that are dependent on analyte type.

GROUP:
Inorganics

SUBGROUP:

Chloride,Nitrate,Nitrite

BOTTLE: 500-mL

Preservative: Chill to 4 degrees C.

Holding Time: 48 Hrs

Test Method: EPA 300.1 Ion Chromatography

PROCEDURE

1. Using waterproof ink, fill out and attach label. At a minimum, include the Well ID number, sampling point and date.
2. Remove the sampling container cap. Be careful not to touch the inside of the sampling container or cap with your fingers. When possible, hold the sampling container in one hand and the cap in the other or set the cap on a clean surface. Quickly position the sampling container under the water flow.
3. Fill to the shoulder of the container. Do not over fill.
4. Quickly remove the sampling container from the water flow.
5. Replace cap and tighten.
6. Completely fill out the chain of custody form.
7. Sample must be placed in coolers for laboratory submittal.

GROUP:
Bacteria

Total/ Fecal
Coliforms,
Enterococci, Fecal
Strep

BOTTLE: (4) 120 mL sterile plastic bottle

Preservative: Chill to 4 degrees C.

Holding Time: 8 Hrs.

Test Methods: Colilert-18, Enterolert, SM9230

PROCEDURE

1. Using waterproof ink, fill out and attach label. At a minimum, include the Well ID number, sampling point and date.
2. Remove the sampling container cap. Be careful not to touch the inside of the sampling container or cap with your fingers. When possible, hold the sampling container in one hand and the cap in the other or set the cap on a clean surface. Quickly position the sampling container under the water flow.
3. Fill to at least the 100 mL mark. Leave some air space.
4. Quickly remove the sampling container from the waterflow.
5. Replace cap and tighten.
6. Completely fill out the chain of custody form.
7. Sample must be placed in coolers for laboratory submittal.

GROUP:
Inorganic

SUBGROUP:

Phosphorus-Total

BOTTLE: One 125 ml

Preservative: PH<2 1:1 Nitric Acid

Test Method: EPA 200.7 ICP

PROCEDURE:

1. Using waterproof ink, fill out and attach label. At a minimum, include the Well ID number, sampling point and date.
2. Remove the sampling container cap. Be careful not to touch the inside of the sampling container or cap with your fingers. When possible, hold the sampling container in one hand and the cap in the other or set the cap on a clean surface. Quickly position the sampling container under the water flow.
3. Fill to the shoulder of the container. Do not over fill.
4. Quickly remove the sampling container from the water flow.
5. Bottle contains Nitric Acid Preservative.
6. Replace cap and tighten.
7. Completely fill out the chain of custody form.
8. Sample must be placed in coolers for laboratory submittal.

GROUP:

Inorganic

SUBGROUP:

Ammonia, TKN

BOTTLE: 125-mL

Preservative: PH <2 with 1:1 Sulfuric Acid

Holding time: 28 Days

Test Method: ASTM D6919-03, SM 4500-Norg C

PROCEDURE

1. Using waterproof ink, fill out and attach label. At a minimum, include the Well ID number, sampling point and date.
2. Remove the sampling container cap. Be careful not to touch the inside of the sampling container or cap with your fingers. When possible, hold the sampling container in one hand and the cap in the other or set the cap on a clean surface. Quickly position the sampling container under the water flow.
3. Fill to the shoulder of the container. Do not over fill.
4. Quickly remove the sampling container from the water flow.
5. Bottle contains Sulfuric Acid Preservative.
6. Replace cap and tighten.
7. Completely fill out the chain of custody form.
8. Sample must be placed in coolers for laboratory submittal