

**Illicit Discharge Detection and
Elimination Program**

INVESTIGATION OF THE SPY POND
AND LITTLE POND TRIBUTARY
AREAS

United States Environmental
Protection Agency
ORDER OF CONSENT



Prepared for:
The Town of Belmont

Prepared by:
Stantec Consulting Services Inc.

January 31, 2019

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ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

INTRODUCTION
January 31, 2019

1.0 INTRODUCTION

1.1 ORDER OF CONSENT

This report is submitted in compliance with U.S. Environmental Protection Agency (EPA) ORDER ON CONSENT (Order) Docket No. CWA-AO-R01-FY17-11. In accordance with Parts IV.8 of the order, this report summarizes illicit discharge investigations conducted in areas tributary to Spy Pond and the remaining tributaries to Little Pond.

As presented in the Order, from 2012 – 2016 the EPA collected several water quality samples within the Spy Pond and remaining Little Pond tributary areas. The EPA sample results are included for reference in Appendix A.

1.2 BACKGROUND

Figure 1 illustrates the proximity of both the Spy Pond and Little Pond tributary areas within Belmont. Storm drains in these tributaries, and all other tributaries in Belmont, are entirely separate from the sanitary sewer system.

The Spy Pond tributary areas (15 & 15A) are comprised of approximately 13,000 linear feet of storm drains that range in size from 10" diameter to 4'x3' box culvert. Storm drains within the Spy Pond tributary ultimately discharge to Little Pond and Alewife Brook.

The Little Pond tributary areas (9, 9A, 11, 11A & 12), excluding the tributary areas from Spy Pond and Winn's Brook, are comprised of approximately 5,100 linear feet of storm drains that range in size from 10" to 36" diameter. Stantec has previously conducted extensive IDDE work in the Little Pond areas.

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OUTFALL & UPPER TRIBUTARY AREA SAMPLING

January 31, 2019

2.0 OUTFALL & UPPER TRIBUTARY AREA SAMPLING

2.1 OUTFALL SAMPLING

In November 2016, Stantec conducted outfall sampling at all outfall's tributary to the Mystic River watershed (Outfalls 1 – 15). Each outfall was sampled once during “wet-weather”¹ and once during “dry weather”². Samples were collected between 6:30 A.M. and 10:30 A.M. during the “peak sewer usage” period. Samples were analyzed for both E. coli and Enterococci in an independent laboratory. Stantec staff utilized field-kits to test for surfactants, total chlorine, ammonia, salinity, conductivity, temperature, and pH.

The sampling results for Little Pond Outfalls 9, 9A, 11, 11A & 12 and Spy Pond Outfalls 15 & 15A are presented in Table 1 and illustrated in Figures 2 - 4. Outfall 9 was not flowing during both dry-weather and wet-weather sampling. Therefore, Outfall 9 was eliminated from further investigation.

2.2 UPPER TRIBUTARY AREA SAMPLING

Based on the sample results from Outfalls 12, 15 and 15A, additional sampling was conducted to identify smaller tributaries within each sub-catchment area suitable for more intensive investigations. Sampling was conducted during dry weather and during peak sewer usage periods. Samples were collected for E. coli. Tributary areas that were “dry” were eliminated from further sampling. Certified laboratory results for the sampling are provided in Appendix B. Due to their small size, tributary sampling was not required in areas 11 and 11A.

Results for tributaries 12, 15 and 15A are presented in Table 2 and illustrated in Figures 2 - 4. Five tributaries were designated for further investigation as noted below.

- Dyed-water Testing
 - Brighton St north of Simmons Ave (Outfall Area 15) – Figure 5
- CCTV Inspections
 - Knox St Neighborhood (Outfall Area 15A) – Figure 6
 - Oliver Rd (Outfall Areas 11, 11A & 12) – Figure 7

Sampling will be conducted to verify the effectiveness of repairs/rehabilitation and/or further identify sources of contamination as required.

¹ “Wet Weather” herein refers to any point in time in which there has been greater than 0.25 inch of rainfall over the previous cumulative 24 hours.

² “Dry Weather” herein refers to any point in time in which there has been less than 0.1 inch of rainfall over the previous cumulative 24 hours.

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DYED-WATER TESTING
January 31, 2019

3.0 DYED-WATER TESTING

Dyed-water testing is conducted to determine if a building service lateral is an illicit connection. Typically, the mainline has been rehabilitated or replaced. The sewer service is tested by flowing dyed-water from a toilet or sink and then monitoring the downstream sewer and drain manholes for traces of dye. The internal plumbing is also inspected for inadvertent cross connections. If the homeowner was not present during the initial visit, a "Sewer Work Notice" was left at the home requesting the homeowner call for an appointment. A copy of the notice is included in Appendix C.

Dyed-water testing was conducted in Area 15 on Brighton St north of Simmons Ave. Of the 10 houses targeted, 8 tests were completed, with one direct connection to the storm drain system identified as depicted in Figure 8. A direct connection is a sanitary sewer service directly connected to the storm drain.

4.0 CCTV INSPECTIONS

CCTV inspections are conducted to identify structural defects (cracked or broken pipe), maintenance issues (debris or blockages) and infiltration/exfiltration sources. Both mainline and service laterals were inspected in the target areas.

Outfall Areas 11, 11A & 12 - Oliver Rd Area – The 235 LF of mainline sewer was in fair to poor condition with moderate to severe cracking, sags and offset joints. The 20 service laterals were also in fair to poor condition with defects including offset/separated joints, cracks, root intrusion and sags.

Outfall Area 15A - Knox Street Neighborhood – Scheduled to be CCTV inspected.

5.0 ILLICIT CONNECTION IDENTIFICATION

The sampling program has successfully identified five (5) areas with suspected illicit connections. Dyed-water testing identified one (1) house sewer service connected directly to the storm drain. 235 LF of sewer main and 20 house service are potential sources based on CCTV inspections. Planned activities for areas tributary to Little Pond and Spy Pond as follows:

Outfall Area 15 (Spy Pond)

Remove direct connect sewer service from the storm drain and conduct follow-up verification sampling.

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ILLCIT CONNECTION IDENTIFICATION

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Outfall Area 15A (Spy Pond)

Complete CCTV inspection in Knox Street and conduct dyed-water testing as required based on CCTV results.

Outfall Area 11, 11A & 12 (Little Pond)

Evaluated for rehabilitation alternatives for the Oliver Rd Area.

We anticipate that this work will be completed for incorporation into the July 31, 2019 Compliance Report.

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Appendix A EPA SAMPLING DATA
January 31, 2019

Appendix A EPA SAMPLING DATA

Water Quality Sample Locations

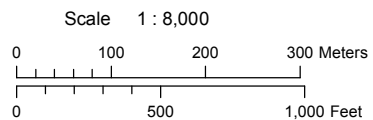
Belmont, MA

Date

● 6/19/2012

● 4/14/2015

● 3/30/2016



Basemap: ESRI and the GIS User Community
US EPA R1 GIS Center map #11119, 7/15/2016



EPA New England MS4 Outfall Sampling Summary - Belmont, MA

Location																Coordinates		YSI Meter		
Date	Town	Site Name	Time	E.coli (MPN/10 0ml)	Entero (MPN/10 0ml)	PPCP ng/L						Surfactants	Chlorine	NH3 (mg/l)	GPS North(+)	GPS West (-)	Salinity	Temp	Conductivity	
						Atenolol	Acetaminophen	Cotinine	1,7-Dimethyl xanthine	Caffeine	Metoprolol	Carbamazepine					Test St.	ppt	C	uS
6/19/12	Belmont, MA	WinnB	805	542	213	3.1	8	1.2	32	28	1.7	0.6	0.05	0.03	0.1	42.399385	71.1610380	0.3	15.2	477
6/19/12	Belmont, MA	6/19 D **	805	504	201	3.4	4.7	2.1	22	36	ND	0.75	NA	NA	NA	42.399385	71.1610380	0.3	15.2	477
6/19/12	Belmont, MA	WellB1	845	1,844	314	7.2	190	3.8	100	200	8.6	3.1	0.2	0.01	0.2	42.393559	71.1667900	0.5	14.2	1099
6/19/12	Belmont, MA	WellB2	910	19,890	2,909	24	530	6.3	560	1100	18	3.7	0.75	0.02	0.6	42.395482	71.1760920	0.1	13.7	312
4/14/15	Belmont, MA	OF-15	820	>241,960	3,255	10	460	4.2	150	620	10	0.61	0.5	0	0.25	42.40613	71.1621990	0.9	9.2	1766
4/14/15	Belmont, MA	WinnB	900	1,379	187	15	170	1.2	33	68	2.5	2.2	0.2	0.01	0	42.39956	71.1610880	0.6	10.3	1308
4/14/15	Belmont, MA	OF-9	930	8	20	ND	5.8	4.2	7	41	ND	0.57	0.1	0.01	0	42.398513	71.1593890	0.5	9.3	1006
4/14/15	Belmont, MA	OF-12	955	34	10	2.2	22	16	21	160	1.8	0.8	0.25	0	0	42.4013	71.1587940	0.9	8.3	1706
4/14/15	Belmont, MA	OF-11	1020	9,678	121	27	3100	1.4	30	130	19	ND	0.1	0.05	0	42.400601	71.1609810	0.4	8.3	773
4/14/15	Belmont, MA	OF-8a	1045	25	10	ND	21	10	24	250	3.5	1.7	0.3	0.03	0	42.394574	71.1583130	1.1	11.7	2148
4/14/15	Belmont, MA	OF-8	1050	25	10	1.9	22	10	24	250	3.7	1.5	0.3	0.05	0	42.394543	71.1583110	1	11.4	1813
4/14/15	Belmont, MA	CAMD33	1110	992	275	40	280	3.4	150	550	6.3	1.3	0.2	0.01	0.25	42.394532	71.1582940	0.7	9.2	1354
4/14/15	Belmont, MA	WellB1	1140	924	10	1.7	42	1.4	15	100	2.5	2	0.2	0.06	0	42.393727	71.1668390	0.9	9.6	1682
4/14/15	Belmont, MA	WellB1a	1200	293	ND	ND	22	1.3	12	69	ND	2.2	NA	NA	NA	42.394458	71.1720880	0.9	11.3	1827
4/14/15	Belmont, MA	WellB2	12:15	504	31	2.3	24	1.2	12	70	1.5	2.4	0.2	0.08	0	42.395509	71.1763200	0.9	9.7	1854
3/30/16	Belmont, MA	NormT	1020	3,922	288	ND	42	2	36	240	3.3	ND	0.2	0.04	0.4	42.39624	71.1548260	0.5	11.9	1067
3/30/16	Belmont, MA	OF-8a	1100	8	ND	ND	44	12	30	280	2.9	0.75	NA	NA	NA	42.394574	71.1583130	1.1	8.5	2177
3/30/16	Belmont, MA	CAMD33	1105	4,480	2,613	13	780	4.6	150	560	14	0.97	0.25	0.04	0.1	42.394532	71.1582940	0.8	9.9	1616
3/30/16	Belmont, MA	WinnB	1130	3,466	295	8.1	45	2.8	44	210	7.8	2.4	0.3	0.02	3	42.39956	71.1610880	0.6	8.2	1139
3/30/16	Belmont, MA	WellB2	1144	1,741	990	ND	50	4.2	39	94	ND	1.3	NA	NA	NA	42.395509	71.1763200	0.9	10.4	1679
3/30/16	Belmont, MA	OF-15	1205	384	63	ND	23	3.3	30	60	ND	1.9	0.2	0.04	0.4	42.40613	71.1621990	1.1	9.5	2198

Note 1: MA Water Quality Standard single sample maximum for E. coli in Class B waters is 235 cfu/100ml
Note 2: MA Water Quality Standard single sample maximum for enterococcus in inland Class B waters is 61 cfu/100 ml
Note 3: Color coding is provided to assist in understanding and prioitization for IDDE purposes - any color in the E. coli or Enterococcus column indicates a violation of water quality standards

** Location 6/19 D was a duplicate of WinnB for quality control purposes
E. coli - color key: Red ≥ 10,000 col/100ml, Orange ≥ 1260 col/100ml, Yellow ≥ 235 col/100ml, No Shading < 235 col/100ml
Enterococcus - color key: Red ≥ 1000 col/100ml, Orange ≥ 350 Yellow ≥ 61 col/100ml, No Shading < 61 col/100ml
NH3 - color key: Red ≥ 6 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0.0 mg/L
Surfactants - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.5 mg/L, Yellow ≥ 0.25 mg/L, No Shading < 0.25 mg/L *** may give false positive at salinity greater than 1 ppt
PPCP color key (X times Reporting Limit): 3X 10X +100X
Cl2 - color key: Red ≥ 1.0 mg/L, Orange ≥ 0.3 mg/L, Yellow ≥ 0.02 mg/L, No Shading < 0.02 mg/L
ND – not detected above the associated detection limit
NA – not applicable (analyte not tested for at that site at this time)

Reporting Limits

E. coli = 4 MPN/100mL
Enterococcus = 10 MPN/100mL
Surfactants Field = 0.1 mg/L
Ammonia Field = 0.1 mg/L
Chlorine Field = 0.02 mg/L

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Appendix B CERTIFIED LABORATORY RESULTS
January 31, 2019

Appendix B CERTIFIED LABORATORY RESULTS

Client:

Stantec

5 Burlington Woods Dr

Burlington, MA 01803-4542

ReportDate: 11/9/2016

Certificate of Analysis**Belmont MA**

Parameter	Method	Result	MRL	Date of Analysis	Analyst
10- 10-1					
<i>Sampled: 11/8/2016 7:40:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	1250	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	450	50	11/8/2016 1:50:00 PM	M-MA1118
3- 8-1					
<i>Sampled: 11/8/2016 8:20:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	ND	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	50	50	11/8/2016 1:50:00 PM	M-MA1118
6- 8-2					
<i>Sampled: 11/8/2016 8:40:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	1950	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	300	50	11/8/2016 1:50:00 PM	M-MA1118
7- 8-3					
<i>Sampled: 11/8/2016 9:20:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	ND	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	ND	50	11/8/2016 1:50:00 PM	M-MA1118
8- 8-4					
<i>Sampled: 11/8/2016 9:45:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	ND	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	ND	50	11/8/2016 1:50:00 PM	M-MA1118
9- 8-5					
<i>Sampled: 11/8/2016 10:15:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	1100	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	2600	50	11/8/2016 1:50:00 PM	M-MA1118
4- 8-6					
<i>Sampled: 11/8/2016 6:50:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	1550	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	150	50	11/8/2016 1:50:00 PM	M-MA1118
1- OF-1					
<i>Sampled: 11/8/2016 7:37:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	100	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	50	50	11/8/2016 1:50:00 PM	M-MA1118

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Client:

Stantec

5 Burlington Woods Dr

Burlington, MA 01803-4542

ReportDate: 11/9/2016

Certificate of Analysis**Belmont MA**

Parameter	Method	Result	MRL	Date of Analysis	Analyst
11- OF-10					
<i>Sampled: 11/8/2016 8:40:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	200	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	3450	50	11/8/2016 1:50:00 PM	M-MA1118
13- OF-11					
<i>Sampled: 11/8/2016 9:20:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	>10000	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	2700	50	11/8/2016 1:50:00 PM	M-MA1118
12- OF-11A					
<i>Sampled: 11/8/2016 9:10:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	8600	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	3200	50	11/8/2016 1:50:00 PM	M-MA1118
15- OF-12					
<i>Sampled: 11/8/2016 10:20:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	>10000	25	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	300	25	11/8/2016 1:50:00 PM	M-MA1118
14- OF-13					
<i>Sampled: 11/8/2016 9:50:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	50	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	50	50	11/8/2016 1:50:00 PM	M-MA1118
16- OF-15A					
<i>Sampled: 11/8/2016 11:00:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	1050	25	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	900	25	11/8/2016 1:50:00 PM	M-MA1118
2- OF-2					
<i>Sampled: 11/8/2016 8:30:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	5550	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	1150	50	11/8/2016 1:50:00 PM	M-MA1118
5- OF-8					
<i>Sampled: 11/8/2016 7:45:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	100	50	11/8/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	700	50	11/8/2016 1:50:00 PM	M-MA1118

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Massachusetts Certified
Laboratory #M-MA1118David L. Knowlton
Laboratory Director

Page 2 of 3

31A Willow Road, Ayer MA 01432

Website: <http://www.NashobaAnalytical.com>

Use this number with all correspondence

Client:

Stantec

5 Burlington Woods Dr

Burlington, MA 01803-4542

ReportDate: 11/9/2016

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Massachusetts Certified
Laboratory #M-MA1118

David L. Knowlton
Laboratory Director

Client:

Stantec

5 Burlington Woods Dr

Burlington, MA 01803-4542

ReportDate: 11/17/2016

Certificate of Analysis**Belmont MA**

Parameter	Method	Result	MRL	Date of Analysis	Analyst
15- 10-1					
<i>Sampled: 11/16/2016 9:10:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	2700	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	2700	100	11/16/2016 1:50:00 PM	M-MA1118
9- 8-1					
<i>Sampled: 11/16/2016 9:20:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	9200	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	2200	100	11/16/2016 1:50:00 PM	M-MA1118
5- 8-2					
<i>Sampled: 11/16/2016 9:45:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	>20000	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	11200	100	11/16/2016 1:50:00 PM	M-MA1118
10- 8-3					
<i>Sampled: 11/16/2016 9:40:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	ND	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	ND	100	11/16/2016 1:50:00 PM	M-MA1118
6- 8-4					
<i>Sampled: 11/16/2016 10:15:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	ND	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	ND	100	11/16/2016 1:50:00 PM	M-MA1118
17- 8-5					
<i>Sampled: 11/16/2016 10:10:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	2900	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	1000	100	11/16/2016 1:50:00 PM	M-MA1118
16- 8-6					
<i>Sampled: 11/16/2016 9:50:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	8300	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	2000	100	11/16/2016 1:50:00 PM	M-MA1118
7 - OF-1					
<i>Sampled: 11/16/2016 7:25:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	4000	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	1200	100	11/16/2016 1:50:00 PM	M-MA1118

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Client:

Stantec

5 Burlington Woods Dr

Burlington, MA 01803-4542

ReportDate: 11/17/2016

Certificate of Analysis**Belmont MA**

Parameter	Method	Result	MRL	Date of Analysis	Analyst
14- OF-10					
<i>Sampled: 11/16/2016 8:40:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	7200	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	2100	100	11/16/2016 1:50:00 PM	M-MA1118
2- OF-11					
<i>Sampled: 11/16/2016 8:15:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	>20000	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	12600	100	11/16/2016 1:50:00 PM	M-MA1118
3- OF-11A					
<i>Sampled: 11/16/2016 8:30:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	>20000	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	3300	100	11/16/2016 1:50:00 PM	M-MA1118
11- OF-12					
<i>Sampled: 11/16/2016 7:30:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	400	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	600	100	11/16/2016 1:50:00 PM	M-MA1118
1- OF-13					
<i>Sampled: 11/16/2016 7:45:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	1100	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	1100	100	11/16/2016 1:50:00 PM	M-MA1118
12- OF-15					
<i>Sampled: 11/16/2016 8:00:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	>20000	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	>20000	100	11/16/2016 1:50:00 PM	M-MA1118
13- OF-15A					
<i>Sampled: 11/16/2016 8:20:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	>20000	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	13800	100	11/16/2016 1:50:00 PM	M-MA1118
8- OF-2					
<i>Sampled: 11/16/2016 7:45:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	19000	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	8800	100	11/16/2016 1:50:00 PM	M-MA1118

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Massachusetts Certified
Laboratory #M-MA1118David L. Knowlton
Laboratory Director

Page 2 of 3

31A Willow Road, Ayer MA 01432

Website: <http://www.NashobaAnalytical.com>

Use this number with all correspondence

Client:

Stantec

5 Burlington Woods Dr

Burlington, MA 01803-4542

ReportDate: 11/17/2016

Certificate of Analysis**Belmont MA**

Parameter	Method	Result	MRL	Date of Analysis	Analyst
4- OF-8					
<i>Sampled: 11/16/2016 9:15:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	8400	100	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	7100	100	11/16/2016 1:50:00 PM	M-MA1118
18- OF-9A					
<i>Sampled: 11/16/2016 11:00:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	9450	50	11/16/2016 1:50:00 PM	M-MA1118
Enterococcus, /100ML	EPA 1600	3250	50	11/16/2016 1:50:00 PM	M-MA1118

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Massachusetts Certified
Laboratory #M-MA1118David L. Knowlton
Laboratory Director

Page 3 of 3

Client:

Stantec

5 Burlington Woods Dr

Burlington, MA 01803-4542

ReportDate: 6/26/2017

Certificate of Analysis**Belmont MA**

Parameter	Method	Result	MRL	Date of Analysis	Analyst
1- 1-1					
<i>Sampled: 6/23/2017 8:20:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	19000	100	6/23/2017 12:50:00 PM	M-MA1118
3- 1-2					
<i>Sampled: 6/23/2017 8:30:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	ND	100	6/23/2017 12:50:00 PM	M-MA1118
6- 12-1					
<i>Sampled: 6/23/2017 9:45:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	1300	100	6/23/2017 12:50:00 PM	M-MA1118
7- 12-2					
<i>Sampled: 6/23/2017 10:00:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	3000	100	6/23/2017 12:50:00 PM	M-MA1118
8- 12-3					
<i>Sampled: 6/23/2017 10:20:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	ND	100	6/23/2017 12:50:00 PM	M-MA1118
4- 1-3					
<i>Sampled: 6/23/2017 8:45:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	ND	100	6/23/2017 12:50:00 PM	M-MA1118
2- OF-1					
<i>Sampled: 6/23/2017 8:16:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	1900	100	6/23/2017 12:50:00 PM	M-MA1118
9- OF-11					
<i>Sampled: 6/23/2017 9:17:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	13800	100	6/23/2017 12:50:00 PM	M-MA1118
10- OF-11A					
<i>Sampled: 6/23/2017 9:00:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	>20000	50	6/23/2017 12:50:00 PM	M-MA1118
5- OF-12					
<i>Sampled: 6/23/2017 8:45:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	16000	100	6/23/2017 12:50:00 PM	M-MA1118

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Massachusetts Certified
Laboratory #M-MA1118David L. Knowlton
Laboratory Director

Page 1 of 1

31A Willow Road, Ayer MA 01432

Website: <http://www.NashobaAnalytical.com>

Use this number with all correspondence

Client:

Stantec

5 Burlington Woods Dr

Burlington, MA 01803-4542

ReportDate: 7/28/2017

Certificate of Analysis**Belmont, MA**

Parameter	Method	Result	MRL	Date of Analysis	Analyst
12- 10-1-1					
Sampled: 7/27/2017 9:55:00 AM by M. Hernon					
E.coli, /100ML	EPA 1603	500	100	7/27/2017 1:45:00 PM	M-MA1118
13- 10-1-2					
Sampled: 7/27/2017 10:10:00 AM by M. Hernon					
E.coli, /100ML	EPA 1603	100	100	7/27/2017 1:45:00 PM	M-MA1118
2- 8-2-1					
Sampled: 7/27/2017 6:52:00 AM by M. Hernon					
E.coli, /100ML	EPA 1603	>20000	100	7/27/2017 1:45:00 PM	M-MA1118
3- 8-2-2					
Sampled: 7/27/2017 7:15:00 AM by M. Hernon					
E.coli, /100ML	EPA 1603	10500	100	7/27/2017 1:45:00 PM	M-MA1118
4- 8-2-3					
Sampled: 7/27/2017 7:25:00 AM by M. Hernon					
E.coli, /100ML	EPA 1603	900	100	7/27/2017 1:45:00 PM	M-MA1118
5- 8-5-1					
Sampled: 7/27/2017 8:10:00 AM by M. Hernon					
E.coli, /100ML	EPA 1603	12400	100	7/27/2017 1:45:00 PM	M-MA1118
9- 8-6-1					
Sampled: 7/27/2017 8:50:00 AM by M. Hernon					
E.coli, /100ML	EPA 1603	12750	50	7/27/2017 1:45:00 PM	M-MA1118
10- 8-6-2					
Sampled: 7/27/2017 9:20:00 AM by M. Hernon					
E.coli, /100ML	EPA 1603	800	100	7/27/2017 1:45:00 PM	M-MA1118
7- 8-6-3					
Sampled: 7/27/2017 8:45:00 AM by M. Hernon					
E.coli, /100ML	EPA 1603	300	100	7/27/2017 1:45:00 PM	M-MA1118
8- 8-6-4					
Sampled: 7/27/2017 8:50:00 AM by M. Hernon					
E.coli, /100ML	EPA 1603	16800	100	7/27/2017 1:45:00 PM	M-MA1118

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Massachusetts Certified
Laboratory #M-MA1118David L. Knowlton
Laboratory Director

Page 1 of 2

31A Willow Road, Ayer MA 01432

Website: <http://www.NashobaAnalytical.com>

Use this number with all correspondence

Client:

Stantec

ReportDate: 7/28/2017

5 Burlington Woods Dr

Burlington, MA 01803-4542

Certificate of Analysis

Belmont, MA

Parameter	Method	Result	MRL	Date of Analysis	Analyst
11- OF 10-1					
<i>Sampled: 7/27/2017 9:50:00 AM by M. Hernon</i>					
E.coli, /100ML	EPA 1603	ND	100	7/27/2017 1:45:00 PM	M-MA1118
1- OF 8-2					
<i>Sampled: 7/27/2017 6:45:00 AM by M. Hernon</i>					
E.coli, /100ML	EPA 1603	1100	100	7/27/2017 1:45:00 PM	M-MA1118
15- OF 8-5					
<i>Sampled: 7/27/2017 7:45:00 AM by M. Hernon</i>					
E.coli, /100ML	EPA 1603	7400	50	7/27/2017 1:45:00 PM	M-MA1118
6- OF 8-6					
<i>Sampled: 7/27/2017 8:30:00 AM by M. Hernon</i>					
E.coli, /100ML	EPA 1603	14400	100	7/27/2017 1:45:00 PM	M-MA1118
14- OF-15					
<i>Sampled: 7/27/2017 10:30:00 AM by M. Hernon</i>					
E.coli, /100ML	EPA 1603	10200	100	7/27/2017 1:45:00 PM	M-MA1118

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Massachusetts Certified
Laboratory #M-MA1118David L. Knowlton
Laboratory Director

Page 2 of 2

31A Willow Road, Ayer MA 01432

Website: <http://www.NashobaAnalytical.com>

Use this number with all correspondence

Client:

Stantec

ReportDate: 8/18/2017

5 Burlington Woods Dr

Burlington, MA 01803-4542

Certificate of Analysis

Belmont, MA

Parameter	Method	Result	MRL	Date of Analysis	Analyst
3- 15A-1					
<i>Sampled: 8/17/2017 8:40:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	8700	100	8/17/2017 1:25:00 PM	M-MA1118
9- 8-1-1A					
<i>Sampled: 8/17/2017 10:34:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	>20000	100	8/17/2017 1:25:00 PM	M-MA1118
7- 8-1-2					
<i>Sampled: 8/17/2017 10:05:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	500	100	8/17/2017 1:25:00 PM	M-MA1118
5- 8-1-3					
<i>Sampled: 8/17/2017 9:18:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	>20000	100	8/17/2017 1:25:00 PM	M-MA1118
6- 8-1-4					
<i>Sampled: 8/17/2017 9:31:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	1000	100	8/17/2017 1:25:00 PM	M-MA1118
8- 8-1-5					
<i>Sampled: 8/17/2017 10:09:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	>20000	100	8/17/2017 1:25:00 PM	M-MA1118
1- OF-15					
<i>Sampled: 8/17/2017 7:15:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	3000	100	8/17/2017 1:25:00 PM	M-MA1118
2- OF-15A					
<i>Sampled: 8/17/2017 8:10:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	14900	100	8/17/2017 1:25:00 PM	M-MA1118
4- OF8-1					
<i>Sampled: 8/17/2017 9:15:00 AM by Stantec</i>					
E.coli, /100ML	EPA 1603	800	100	8/17/2017 1:25:00 PM	M-MA1118

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Massachusetts Certified
Laboratory #M-MA1118David L. Knowlton
Laboratory Director

Page 1 of 1

Client:

Stantec

5 Burlington Woods Dr

Burlington, MA 01803-4542

ReportDate: 12/12/2018

Certificate of Analysis**Belmont MA**

Parameter	Method	Result	MRL	Date of Analysis	Analyst
8- 15-1					
<i>Sampled: 12/11/2018 9:50:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	12400	100	12/11/2018 2:10:00 PM	M-MA1118
10- 15-2					
<i>Sampled: 12/11/2018 10:20:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	1200	100	12/11/2018 2:10:00 PM	M-MA1118
2- 15A-2					
<i>Sampled: 12/11/2018 7:12:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	300	100	12/11/2018 2:10:00 PM	M-MA1118
3- 15A-3					
<i>Sampled: 12/11/2018 7:13:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	<100	100	12/11/2018 2:10:00 PM	M-MA1118
4- 15A-4					
<i>Sampled: 12/11/2018 7:15:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	5100	100	12/11/2018 2:10:00 PM	M-MA1118
5- 15A-5					
<i>Sampled: 12/11/2018 7:36:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	600	100	12/11/2018 2:10:00 PM	M-MA1118
6- 15A-6					
<i>Sampled: 12/11/2018 7:38:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	<100	100	12/11/2018 2:10:00 PM	M-MA1118
7- 15A-7					
<i>Sampled: 12/11/2018 8:00:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	10000	100	12/11/2018 2:10:00 PM	M-MA1118
9- OF-15					
<i>Sampled: 12/11/2018 10:10:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	1900	100	12/11/2018 2:10:00 PM	M-MA1118
1- OF-15A					
<i>Sampled: 12/11/2018 6:50:00 AM by Client</i>					
E.coli, /100ML	EPA 1603	12600	100	12/11/2018 2:10:00 PM	M-MA1118

MRL=Minimum Reporting Level, ND = None Detected (<MRL)

Analysis performed according to 310CMR42.00

Massachusetts Certified
Laboratory #M-MA1118David L. Knowlton
Laboratory Director

Page 1 of 1

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

Appendix C SEWER WORK NOTICE
January 31, 2019

Appendix C SEWER WORK NOTICE

SEWER WORK NOTICE

Building Inspection & Dyed-Water Testing

May 2018

Dear Property Owner/Resident,

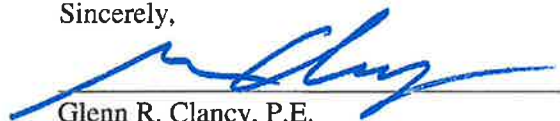
In April 2017, the Town received an ORDER ON CONSENT (Order) from the United States Environmental Protection Agency (EPA) for high levels of contamination at various storm water outfalls. The Town of Belmont has contracted the engineering firm Stantec Consulting Services, Inc. to conduct extensive investigations to determine the source(s) of contamination.

The investigations include building plumbing inspections and dyed-water testing in selected neighborhoods. Dyed-water testing involves applying dyed-water into a toilet or sink. The dyed-water flows through the piping to the street where it can be observed from an opened manhole. The dye is non-toxic and will not cause any damage to your property. The investigation takes approximately 30 minutes to complete and will not impact your property in any way.

Technicians will be conducting dyed-water testing Monday through Friday from 9:00 A.M. to 5:00 P.M. If you are generally not home during this period, please contact Ara Yogurtian at the Office of Community Development to make an appointment (617) 993-2657.

This work is required even if your home has been previously inspected and/or dyed-water tested. The Town thanks you for your continued cooperation in order that meaningful and useful data regarding the Town's sanitary sewer and storm drain systems is obtained. If you have any questions or would like to schedule an appointment please contact Ara Yogurtian at the Office of Community Development at (617) 993-2657. Additional information is available online at the Office of Community Development website at www.town.belmont.ma.us.

Sincerely,



Glenn R. Clancy, P.E.

Director Office of Community Development

TABLE 1
NOVEMBER 2016 - INITIAL OUTFALL SAMPLING OF SPY POND & LITTLE POND
BELMONT, MASSACHUSETTS

Spy Pond and Little Pond - Outfall Sampling - Dry Weather									
Sampling Parameter	Unit	Threshold Value	Sampling Location, Sampling Date, and Measured Value						
			9	9A	11	11A	12	15	15A
			11/8/2016	11/8/2016	11/8/2016	11/8/2016	11/8/2016	11/8/2016	11/8/2016
E-Coli	MPN/100mL	235	DRY	DRY	>10,000	8,600	>10,000	DRY	1,050
Enterococci	MPN/100mL	61	DRY	DRY	2,700	3,200	300	DRY	900
Surfactants	ppm	0.25	DRY	DRY	0.3	0.5	0.25	DRY	0.25
Chlorine (Cl ₂)	mg/L		DRY	DRY	0.23	0.17	0.29	DRY	0.12
Ammonia (NH ₃)	mg/L	0.5	DRY	DRY	0.35	3	0.35	DRY	0.8
Salinity	ppt		DRY	DRY	0	0	0	DRY	0
Conductivity	μs		DRY	DRY	0	0	0	DRY	0
Temperature	°C		DRY	DRY	11.5	10.1	17.9	DRY	17.6
pH			DRY	DRY	7.46	7.55	7.85	DRY	7.71

Spy Pond & Little Pond - Outfall Sampling - Wet Weather									
Sampling Parameter	Unit	Threshold Value	Sampling Location, Sampling Date, and Measured Value						
			9	9A	11	11A	12	15	15A
			11/16/2016	11/16/2016	11/16/2016	11/16/2016	11/16/2016	11/16/2016	11/16/2016
E-Coli	MPN/100mL	235	DRY	9,450	>20,000	>20,000	400	>20,000	>20,000
Enterococci	MPN/100mL	61	DRY	3,250	12,600	3,300	600	>20,000	13,800
Surfactants	ppm	0.25	DRY	0.15	0.15	0.2	0.15	0.25	0.75
Chlorine (Cl ₂)	mg/L		DRY	0.14	0.11	0.04	0.05	0.38	0.47
Ammonia (NH ₃)	mg/L	0.5	DRY	1	0.35	2	0.15	0.15	4
Salinity	ppt		DRY	0	0	0	0	0	0
Conductivity	μs		DRY	0	0	0	0	0	0.4
Temperature	°C		DRY	13.2	13.6	12.2	12.8	12	12.8
pH			DRY	7.71	7.48	7.04	7.8	7.23	6.85

*"ND" abbreviated for "Not detected"

*Red cells indicate the sample's parameter exceeds its threshold value.

TABLE 2
UPPER TRIBUTARY SAMPLING RESULTS
BELMONT, MA

Outfall 12 Tributary Sampling								
Sampling Parameter	Unit	Threshold Value		Sampling Location, Sampling Date, and Measured Value				
			Sample No.	OF-12				
			Date	11/8/2016	6/23/2017	6/23/2017	6/23/2017	6/23/2017
			MH #	41D037	41D037	41D019	41D017	41D011
E. Coli	MPN/100mL	235		>10,000	16,000	1,300	3,000	ND
Surfactants	ppm	0.25		0.25	0.4	0.4	0.4	0.75
Ammonia (NH ₃)	mg/L	0.5		0.35	4	0	0.3	0

Outfall 15 Tributary Sampling										
Sampling Parameter	Unit	Threshold Value		Sampling Location, Sampling Date, and Measured Value						
			Sample No.	OF-15					15-2	15-1
			Date	11/8/2016	*	7/27/2017	8/17/2017	12/11/2018	12/11/2018	12/11/2018
			MH #	46D060	46D060	46D060	46D060	46D060	46D083	46D003
E. Coli	MPN/100mL	235		DRY	>20,000	10,200	3,000	1,900	1,200	12,400
Surfactants	ppm	0.25			0.25		0.5			
Ammonia (NH ₃)	mg/L	0.5			0.15	0.25	0.5	0.25	0	0.5

Outfall 15A Tributary Sampling															
Sampling Parameter	Unit	Threshold Value		Sampling Location, Sampling Date, and Measured Value											
			Sample No.	OF-15A				15A-1	15A-2	15A-3	15A-4	15A-5	15A-6	15A-7	
			Date	11/8/2016	*	8/17/2017	12/11/2018	8/17/2017	12/11/2018	12/11/2018	12/11/2018	12/11/2018	12/11/2018	12/11/2018	12/11/2018
			MH #	50D022	50D022	50D019	50D019	50D030	50D027	50D027	50D027	50D003	50D003	53D008	53D008
E. Coli	MPN/100mL	235		1,050	>20,000	14,900	12,600	8,700	300	<100	5,100	600	<100	10,000	DRY
Surfactants	ppm	0.25		0.25	0.75	0.10									
Ammonia (NH ₃)	mg/L	0.5		0.80	4	3.00	0.75	2.50	0.75	0.00	0.75	0.75	0.00	0.50	

*Samples taken on 11/16/2016 for OF-15 and OF 15A were during Wet Weather conditions. All other samples were taken during Dry Weather conditions.



SPY POND
TRIBUTARY AREA 15A

SPY POND
TRIBUTARY AREA 15

LITTLE POND
TRIBUTARY AREA 12

LITTLE POND
TRIBUTARY AREA 9

LITTLE POND
TRIBUTARY AREA 11

LITTLE POND
TRIBUTARY AREA 9A

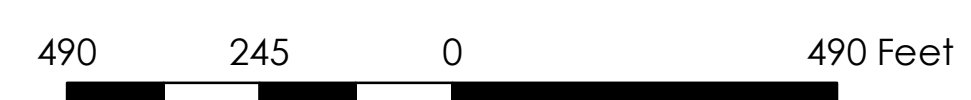
TOWN OF BELMONT, MA

Figure 1

Spy Pond and Little Pond Tributary Areas

January 2019

1 inch = 245 feet



LEGEND

Belmont Drainage System

- Drain Line
- Drain Manhole
- ★ Outfall Points

Town Boundaries

- ▬ Town Boundaries
- ▭ Parcels
- ▭ Buildings

Drainage Tributary Areas

- ▭ TRIBUTARY AREA 9
- ▭ TRIBUTARY AREA 9A
- ▭ TRIBUTARY AREA 13
- ▭ TRIBUTARY AREA 12
- ▭ TRIBUTARY AREA 11
- ▭ TRIBUTARY AREA 15
- ▭ TRIBUTARY AREA 15A

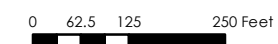


TOWN OF
BELMONT, MA

ILLICIT DISCHARGE DETECTION AND ELIMINATION



1 inch = 250 feet



LEGEND

- 2016 - 2018 Sampling Locations
-  2016 - 2018 Sampling Locations
 -  Drain Mainline - No Rehab or CCTV
 -  Drain Mainline - CCTV'd and No Rehab Required
 -  Drain Mainline - Rehabbed, Replaced, or New
 -  Drain Manhole
 -  Outfall Points
 -  Outfall 15 Tributary
 -  Catch Basin
 -  Catch Basin Outlet Drain
 -  Sewer Mainline - No Rehab or CCTV
 -  Sewer Mainline - CCTV'd and No Rehab Required
 -  Sewer Mainline - Rehabbed, Replaced or New
 -  Sewer Manhole
 -  Buildings



Index Map

The information on this map has been compiled by Stantec staff from a variety of sources and is subject to change without notice. Stantec makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or right to the use of such information.

Figure 2

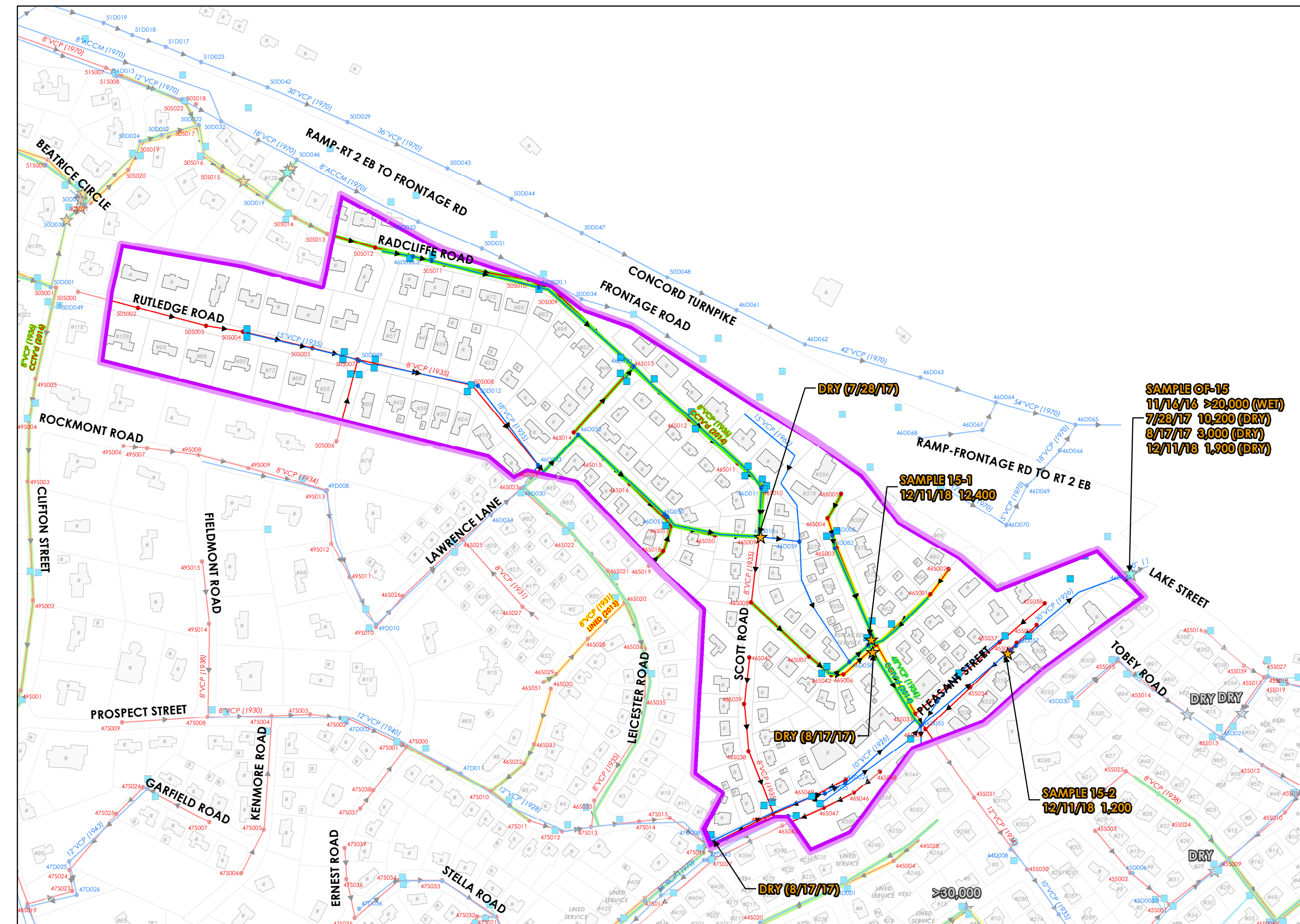
Outfall 15 Tributary Sampling Results

January 2019



Stantec

Stantec Consulting Services, Inc.
5 Burlington Woods Drive
Burlington, MA 01803-4542



LEGEND

Sampling Data

- ★ 2016 - 2018 Sampling Locations

Belmont Drainage System

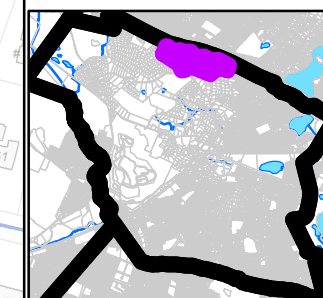
-  Drain Mainline - No Rehab or CCTV;
2016 PMP/2018 PMP; , 2018 IDDE;
2018 PMP; ,
-  Drain Mainline - CCTV'd and No
Rehab Required
-  Drain Mainline - Rehabbed,
Replaced, or New
-  Drain Manhole

- Outfall Points

-  Outfall 15A Tributary
 Catch Basin
 Catch Basin Outlet Drain

Belmont Sewer System

-  Sewer Mainline - No Rehab or CCTV
-  Sewer Mainline - CCTV'd and No Rehab Required
-  Sewer Mainline - Rehabbed, Replaced or New
-  Sewer Manhole
-  Buildings



Index Map

The information on this map has been compiled by Stantec staff from a variety of sources and is subject to change without notice. Stantec makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or right to the use of such information.

Figure 3

Outfall 15A Tributary Sampling Results

January 2019



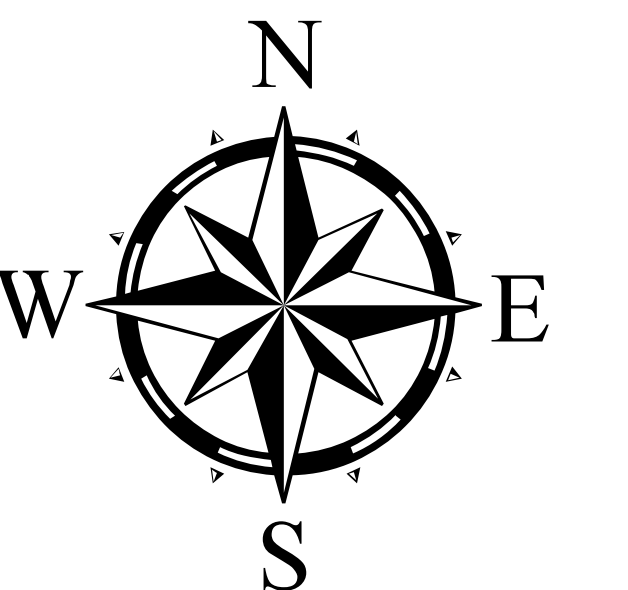
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TOWN OF BELMONT, MA

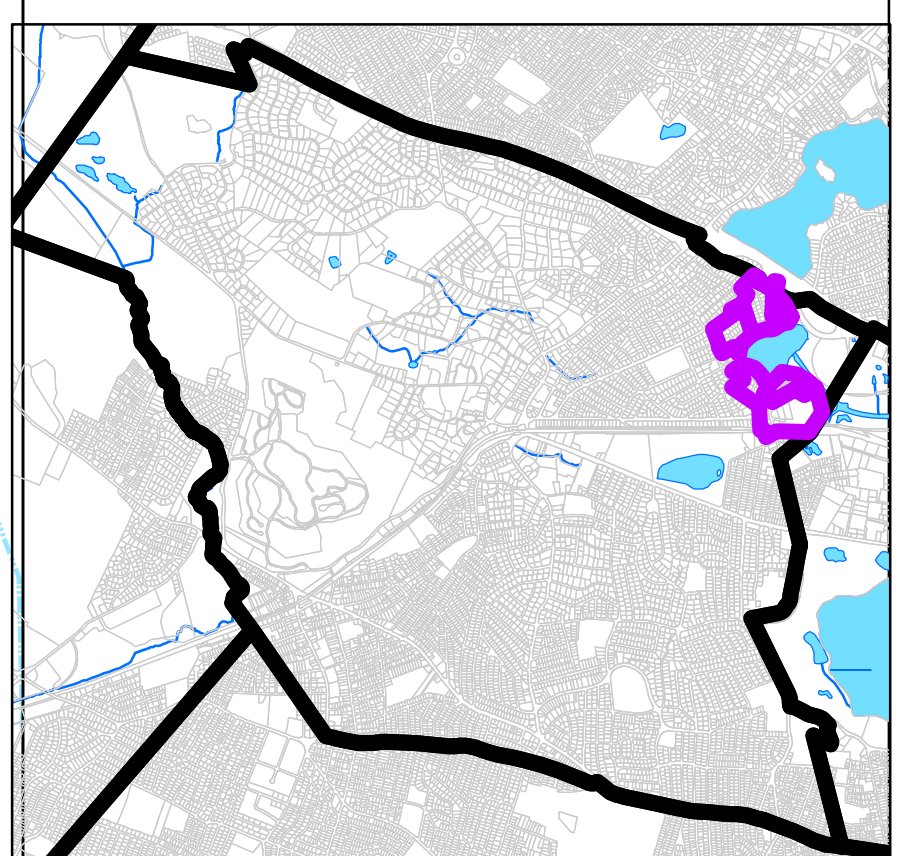
ILLICIT DISCHARGE DETECTION AND ELIMINATION



1 inch = 100 feet
100 50 0 100 Feet

LEGEND

- ★ 2016-2018 Sample Locations
- Drain Mainline - No Rehab or CCTV
- Drain Mainline - CCTV'd and No Rehab Required
- Drain Mainline - Rehabbed, Replaced, or New
- Drain Manhole
- ★ Outfall Points
- Outfall 9, 9A, 10, 11, 11A, 12, 13
- Tributaries
- Catch Basin
- Catch Basin Outlet Drain
- Water
- Sewer Mainline - CCTV'd and No Rehab Required
- Sewer Mainline - No Rehab or CCTV
- Sewer Mainline - Abandoned
- Sewer Mainline - Rehabbed, Replaced or New
- Sewer Manhole
- Buildings



Index Map

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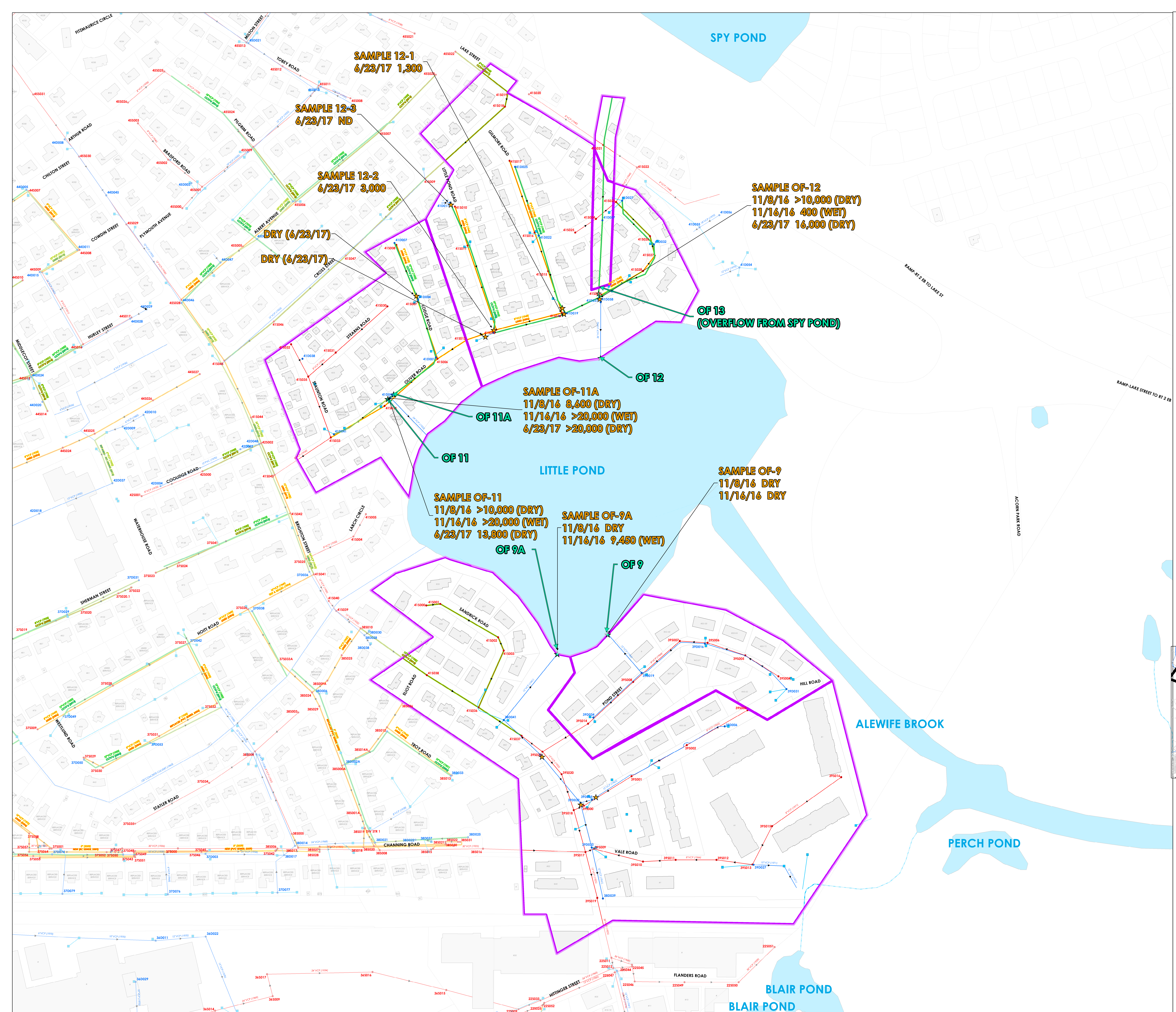
Figure 4

Outfalls 9, 9A, 11,
11A & 12 Tributaries
Sampling Results

January 2019



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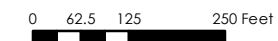


TOWN OF
BELMONT, MA

ILLICIT DISCHARGE DETECTION AND ELIMINATION

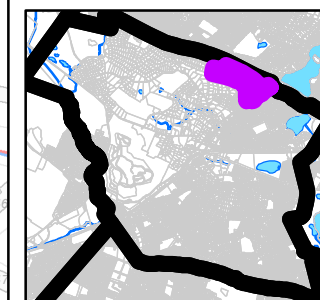


1 inch = 250 feet



LEGEND

-  2019 Investigations
-  2016 - 2018 Sampling Locations
-  Drain Mainline - No Rehab or CCTV
-  Drain Mainline - CCTV'd and No Rehab Required
-  Drain Mainline - Rehabbed, Replaced, or New
-  Drain Manhole
-  Outfall Points
-  Outfall 15 Tributary
-  Catch Basin
-  Catch Basin Outlet Drain
-  Sewer Mainline - No Rehab or CCTV
-  Sewer Mainline - CCTV'd and No Rehab Required
-  Sewer Mainline - Rehabbed, Replaced or New
-  Sewer Manhole
-  Buildings



Index Map

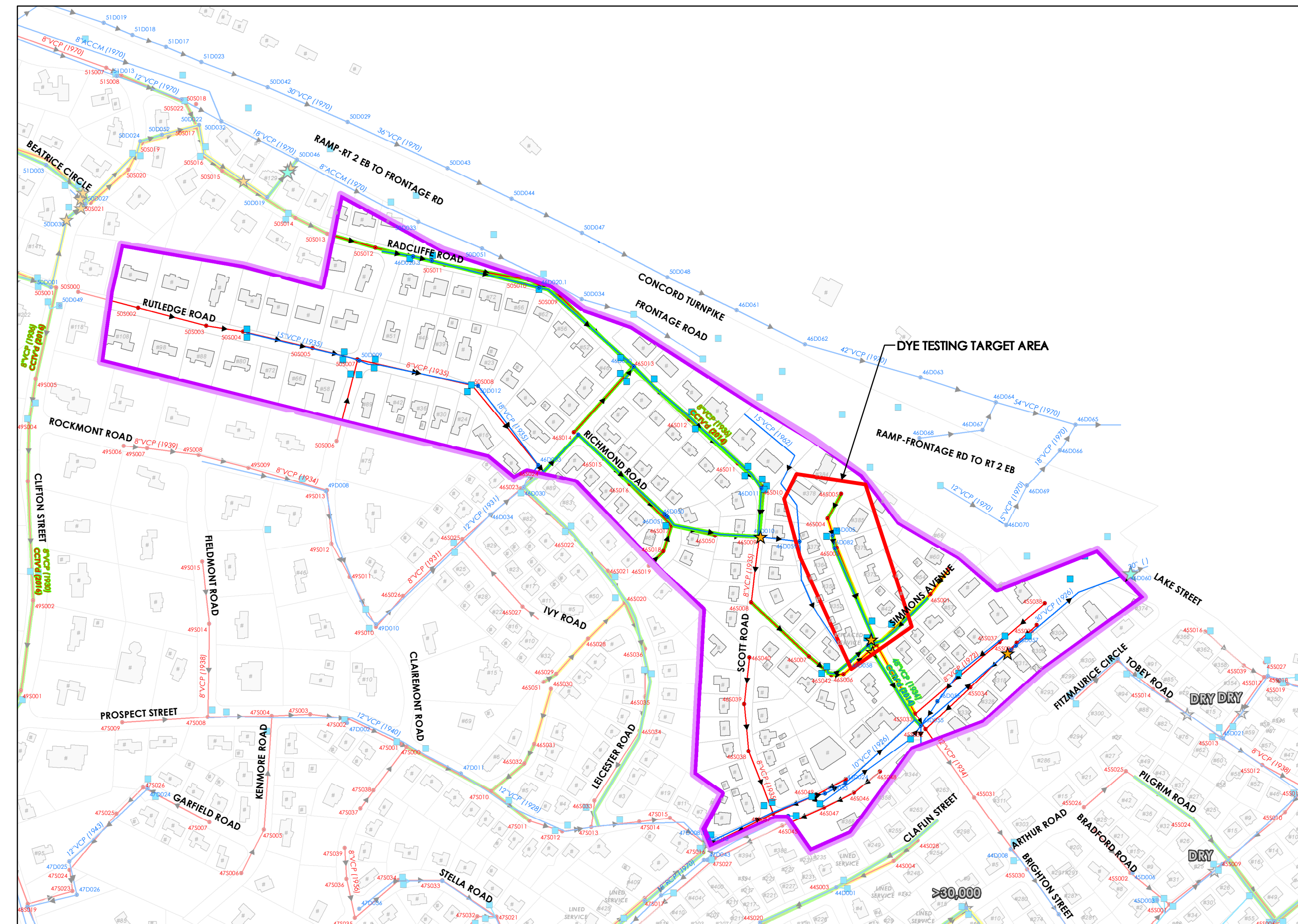
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Figure 5

Outfall 15 Tributary Dye Test Locations



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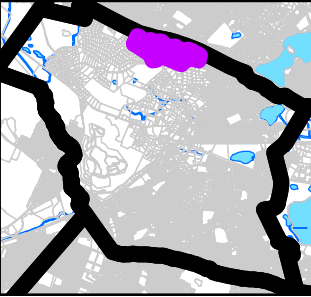
ILLICIT DISCHARGE
DETECTION AND
ELIMINATION



1 inch = 250 feet
0 62.5 125 250 Feet

LEGEND

- 2019 Investigation Areas
- 2016 - 2018 Sampling Locations
- Drain Mainline - No Rehab or CCTV; 2016 PMP/2018 PMP; 2018 IDDE; 2018 PMP;
- Drain Mainline - CCTV'd and No Rehab Required
- Drain Mainline - Rehabbed, Replaced, or New
- Drain Manhole
- Outfall Points
- Outfall 15A Tributary
- Catch Basin
- Catch Basin Outlet Drain
- Sewer Mainline - No Rehab or CCTV
- Sewer Mainline - CCTV'd and No Rehab Required
- Sewer Mainline - Rehabbed, Replaced, or New
- Sewer Manhole
- Buildings



Index Map

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Figure 6

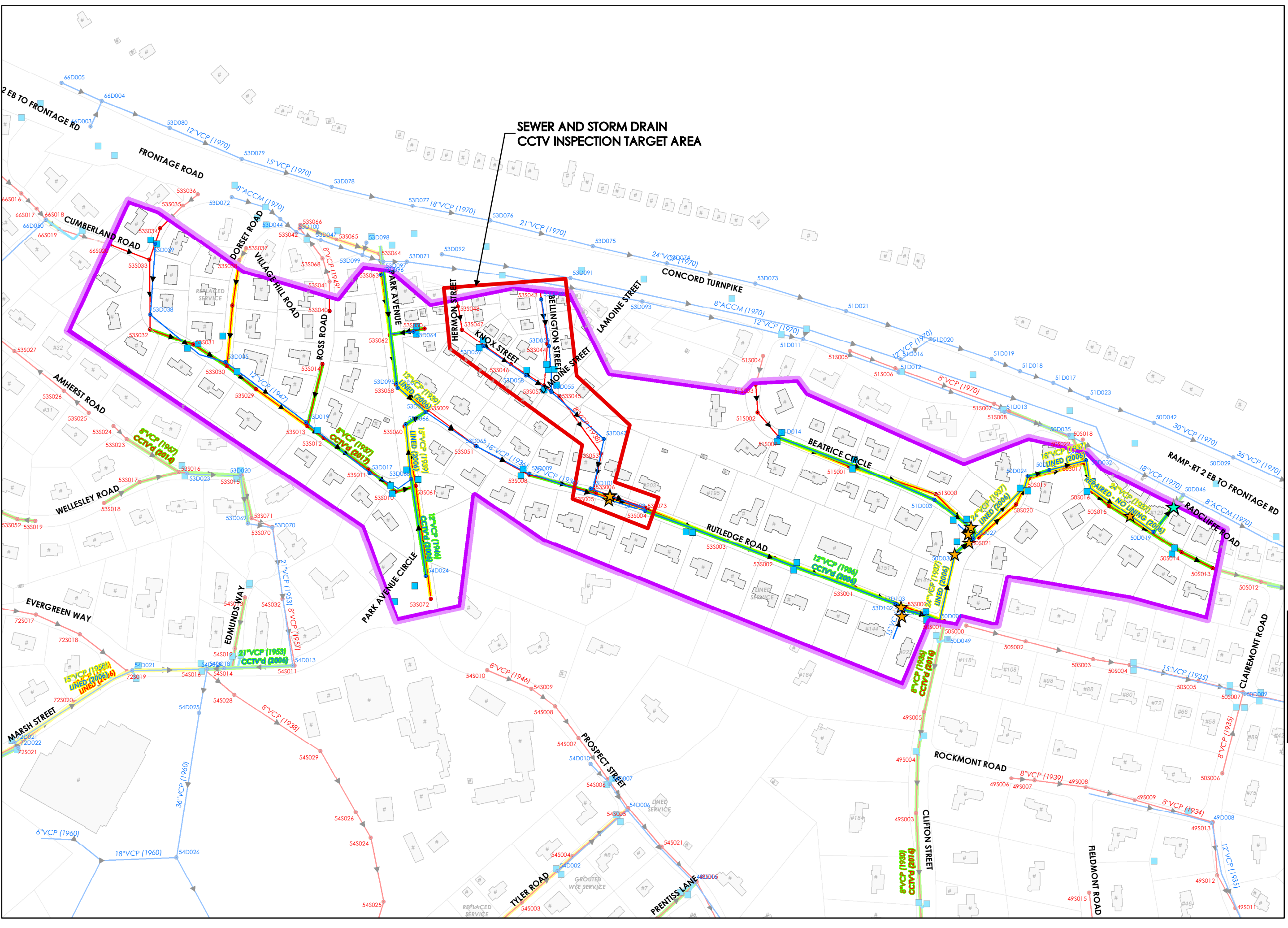
Outfall 15A CCTV Locations

January 2019



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SEWER AND STORM DRAIN
CCTV INSPECTION TARGET AREA





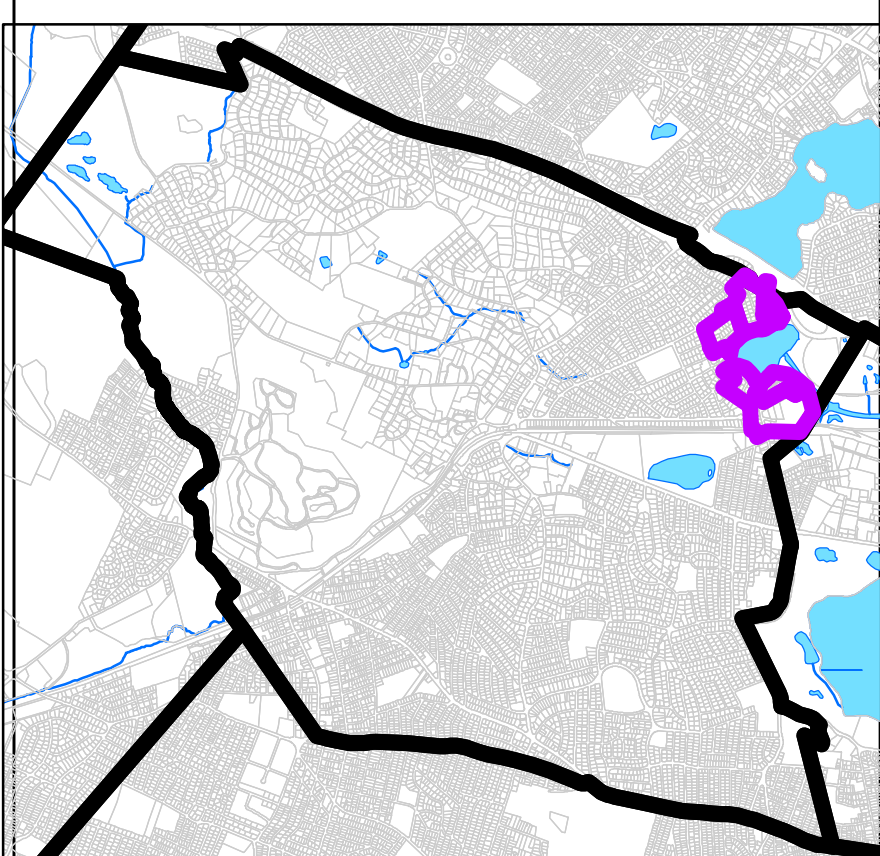
TOWN OF BELMONT, MA

ILLICIT DISCHARGE DETECTION AND ELIMINATION



LEGEND

- 2019 Investigations
- 2016-2018 Sample Locations
- Drain Mainline - No Rehab or CCTV
- Drain Mainline - CCTV'd and No Rehab Required
- Drain Mainline - Rehabbed, Replaced, or New
- Drain Manhole
- Outfall Points
- Outfall 9, 9A, 10, 11, 11A, 12, 13 Tributaries
- Catch Basin
- Catch Basin Outlet Drain
- Water
- Sewer Mainline - CCTV'd and No Rehab Required
- Sewer Mainline - No Rehab or CCTV
- Sewer Mainline - Rehabbed, Replaced or New
- Sewer Manhole
- Buildings



Index Map

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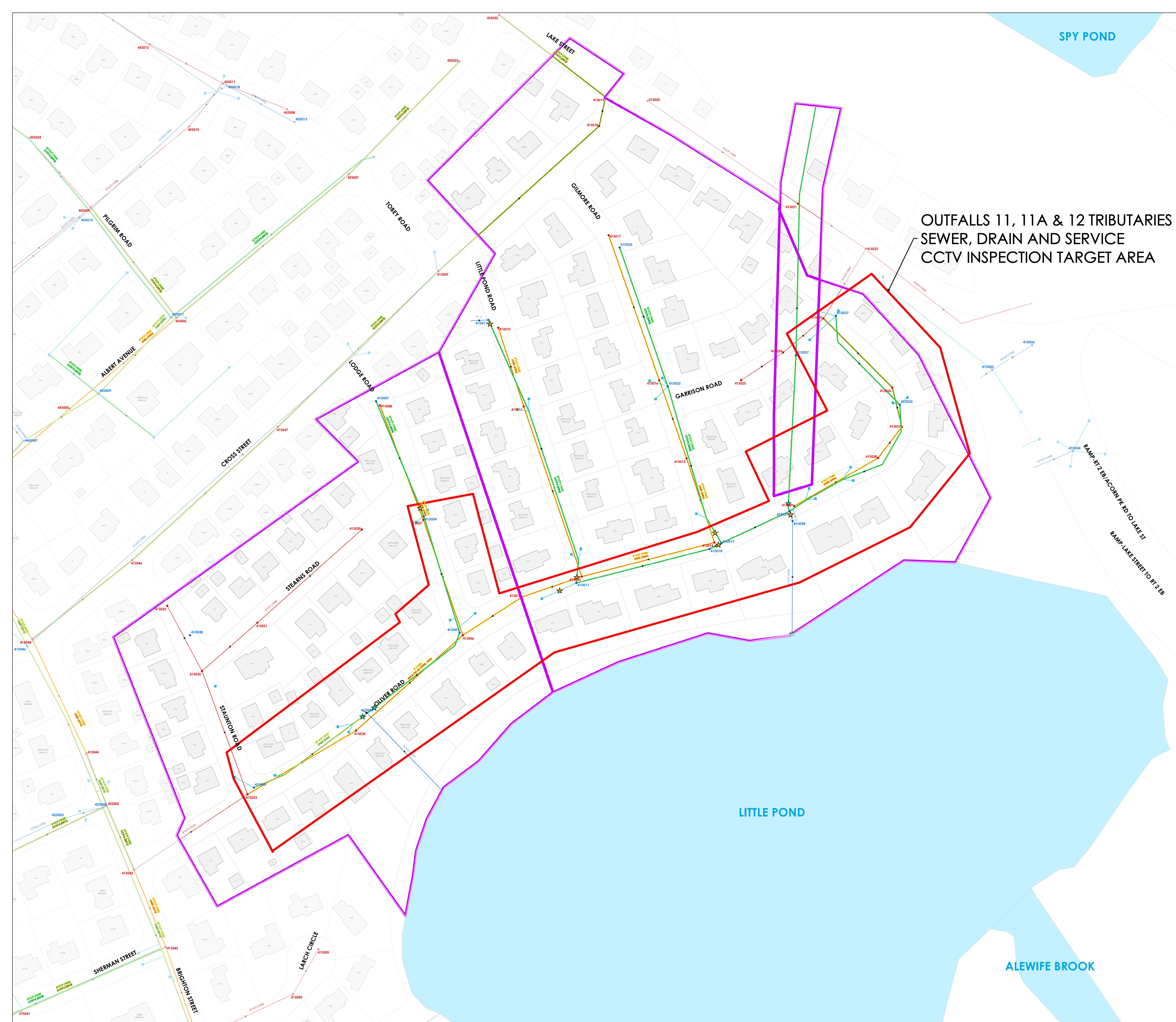
Figure 7

Outfalls 11, 11A & 12
CCTV Target Areas
January 2019



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OUTFALLS 11, 11A & 12 TRIBUTARIES
SEWER, DRAIN AND SERVICE
CCTV INSPECTION TARGET AREA



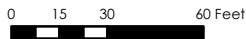


TOWN OF
BELMONT, MA

ILLICIT DISCHARGE
DETECTION AND
ELIMINATION

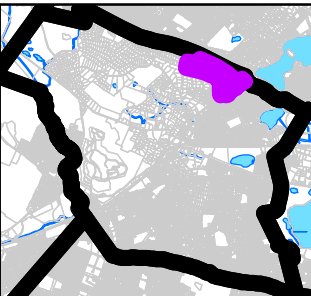


1 inch = 60 feet



LEGEND

- 2019 Investigations
- Drain Mainline - No Rehab or CCTV
- Drain Mainline - CCTV'd and No Rehab Required
- Drain Mainline - Rehabbed, Replaced, or New
- Drain Manhole
- Outfall Points
- Outfall 15 Tributary
- Catch Basin
- Catch Basin Outlet Drain
- Sewer Mainline - No Rehab or CCTV
- Sewer Mainline - CCTV'd and No Rehab Required
- Sewer Mainline - Rehabbed, Replaced or New
- Sewer Manhole
- Buildings
- Negative, 2018 IDDE
- Positive, 2018 IDDE



Index Map

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Figure 8

Outfall 15 Tributary
Brighton Street
Dye Test Results

January 2019



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