Stantec

Memo

To:	Todd Borci US EPA Region I – New England 5 Post Office Square – Suite 100 Boston, MA 02109-3912	From:	Justin Gould Stantec 5 Burlington Woods Burlington, MA 01803
File:		Date:	January 10, 2017

Reference: **Town of Belmont, MA**
Sampling Progress Memo

The Town of Belmont has conducted one round of dry-weather and one round of wet-weather storm water sampling following the EPA New England Bacterial Source Tracking Protocol (Draft – January 2012), the MS4 permit and the EPA Order for Compliance on Consent (Docket No. CWA-AO-R01-FY16-XX). Dry-weather and wet-weather samples were collected and analyzed on November 8, 2016 and November 16, 2016, respectively. Sampling at all outfalls discharging to the Mystic River Watershed, additional EPA sample locations identified in the Order for Compliance on Consent document, and key junction manholes in larger tributary areas was conducted as outlined in the EPA Sampling Protocol Memo dated October 24, 2016. Attached are Figure 1 – Sampling Locations, Table 1 – Summary of Dry-weather Sample Results and Table 2 – Summary of Wet-weather Sample Results.

By February 10, 2017, the Town shall submit for EPA approval an IDDE Plan for screening and monitoring of all MS4 outfalls and interconnections, investigation of Sub-Catchment areas, and identification and removal of illicit discharges.

Very truly yours,

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Belmont, MA
2016 Stormwater Sampling Analysis Program
Table 1
Dry-Weather Sampling Results

Sampling Parameter	Unit	Threshold Value	Outfall Sampling							
			Sampling Location, Sampling Date, and Measured Value							
			OF-1 (CB-01D012)	OF-2 (DMH-11D010)	OF-3 (DMH-21D074)	OF-4 (DMH-21D070)	OF-5 (DMH-21D055)	OF-6 (DMH-22D056)	OF-8 (DMH-22D027)	OF-9 (DMH-39D019)
			11/8/2016	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	100	5550	NF	NF	NF	NF	100	NF
Enterococci	MPN/100mL	61	50	1150	NF	NF	NF	NF	700	NF
Surfactants	ppm	0.25	0.1	0.25	NF	NF	NF	NF	0.25	NF
Chlorine (Cl_2)	mg/L	NA	ND	0	NF	NF	NF	NF	0.05	NF
Ammonia (NH_3)	mg/L	0.5	0	0.25	NF	NF	NF	NF	3	NF
Salinity	ppt	NA	0	0	NF	NF	NF	NF	0	NF
Conductivity	µS	NA	0	0	NF	NF	NF	NF	0	NF
Temperature	°C	NA	7.8	8.4	NF	NF	NF	NF	8.9	NF
pH		NA	8.33	7.97	NF	NF	NF	NF	7.72	NF

Sampling Parameter	Unit	Threshold Value	Outfall Sampling							
			Sampling Location, Sampling Date, and Measured Value							
			OF-9A (At Outfall)	OF-10 (At Outfall)	OF-11 (DMH-41D045)	OF-11A (DMH-41D045)	OF-12 (DMH-41D037)	OF-13 (DMH-41D057)	OF-15 (DMH-46D060)	OF-15A (DMH-50D022)
			11/8/2016	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	NF	200	>10000	8600	>10000	50	NF	1050
Enterococci	MPN/100mL	61	NF	3450	2700	3200	300	50	NF	900
Surfactants	ppm	0.25	NF	0.25	0.30	0.50	0.25	0.25	NF	0.25
Chlorine (Cl_2)	mg/L	NA	NF	0.19	0.23	0.17	0.29	0	NF	0.12
Ammonia (NH_3)	mg/L	0.5	NF	0.5	0.35	3	0.35	0.4	NF	0.8
Salinity	ppt	NA	NF	0	0	0	0	0	NF	0
Conductivity	µS	NA	NF	0	0	0	0	0	NF	0
Temperature	°C	NA	NF	7.4	11.5	10.1	17.9	13.6	NF	17.6
pH		NA	NF	7.84	7.46	7.55	7.85	7.08	NF	7.71

Sampling Parameter	Unit	Threshold Value	Tributary Sampling						
			Sampling Location, Sampling Date, and Measured Value						
			8-1 (Wellington Brook discharge)	8-2 (DMH-23D045)	8-3 (Open Culvert behind Library)	8-4 (Open Culvert at Common St/Royal Rd)	8-5 (DMH-30D040.1)	8-6 (CB-30D067)	10-1 (Winn Brook Open Channel at Claflin St)
			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	ND	1950	ND	ND	1100	1550	1250
Enterococci	MPN/100mL	61	50	300	ND	ND	2600	150	450
Surfactants	ppm	0.25	0.25	0.25	0.15	0.20	0.20	0.25	0.25
Chlorine (Cl_2)	mg/L	NA	0.37	0.17	0.24	0.63	0.10	0.08	0.21
Ammonia (NH_3)	mg/L	0.5	0.3	2.0	0.1	0.3	0.6	0.1	0
Salinity	ppt	NA	0	0	0	0	0	0	0
Conductivity	µS	NA	0	0	0	1.9	0	0	0
Temperature	°C	NA	6.7	10.4	14.9	13.1	12.1	4.8	5.8
pH		NA	8.14	7.83	7.65	7.58	7.95	7.62	7.56

NA= Not Applicable
ND= None Detected
NF= No Flow

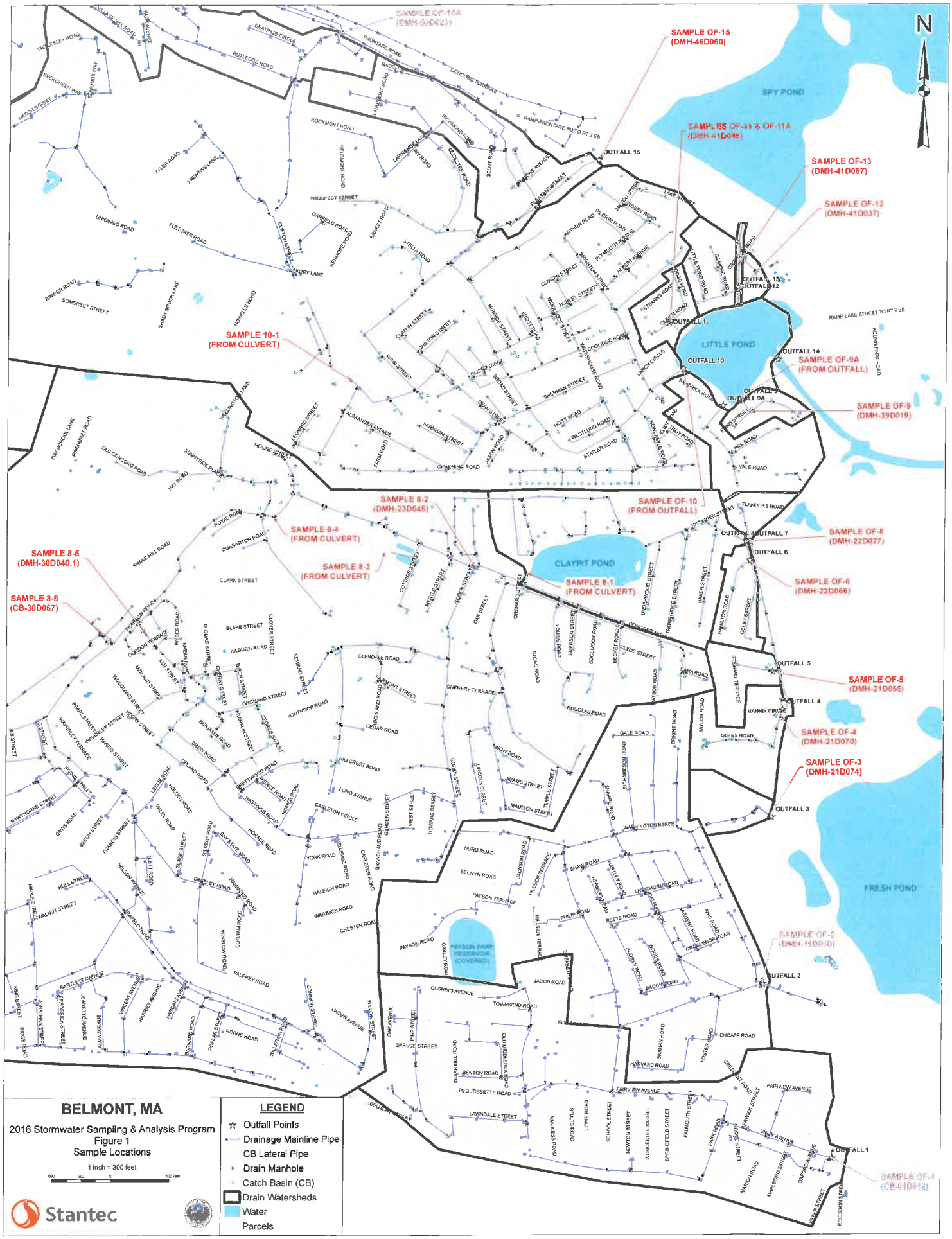
Belmont, MA
2016 Stormwater Sampling Analysis Program
Table 2
Wet-Weather Sampling Results

Sampling Parameter	Unit	Threshold Value	Outfall Sampling							
			Sampling Location, Sampling Date, and Measured Value							
			OF-1 (CB-01D012)	OF-2 (DMH-11D010)	OF-3 (DMH-21D074)	OF-4 (DMH-21D070)	OF-5 (DMH-21D055)	OF-6 (DMH-22D066)	OF-8 (DMH-22D027)	OF-9 (DMH-39D019)
			11/16/2016	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	4000	19000	NF	NF	NF	NF	8400	NF
Enterococci	MPN/100mL	61	1200	8800	NF	NF	NF	NF	7100	NF
Surfactants	ppm	0.25	0.10	0.00	NF	NF	NF	NF	0.10	NF
Total Chlorine	mg/L	NA	0.00	0.07	NF	NF	NF	NF	0.07	NF
Ammonia (NH_3)	mg/L	0.5	0.00	0.25	NF	NF	NF	NF	0.50	NF
Salinity	ppt	NA	0.0	0.0	NF	NF	NF	NF	0.0	NF
Conductivity	µS	NA	0.0	0.0	NF	NF	NF	NF	0.0	NF
Temperature	°C	NA	13.7	13.0	NF	NF	NF	NF	11.5	NF
pH		NA	9.03	8.46	NF	NF	NF	NF	6.90	NF

Sampling Parameter	Unit	Threshold Value	Outfall Sampling							
			Sampling Location, Sampling Date, and Measured Value							
			OF-9A (At Outfall)	OF-10 (At Outfall)	OF-11 (DMH-41D045)	OF-11A (DMH-41D045)	OF-12 (DMH-41D037)	OF-13 (DMH-41D057)	OF-15 (DMH-46D060)	OF-15A (DMH-50D022)
			11/16/2016	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	9450	7200	>20000	>20000	400	1100	>20000	>20000
Enterococci	MPN/100mL	61	3250	2100	12800	3300	600	1100	>20000	13800
Surfactants	ppm	0.25	0.15	0.25	0.15	0.20	0.15	0.15	0.25	0.75
Total Chlorine	mg/L	NA	0.14	0.00	0.11	0.04	0.05	0.18	0.38	0.47
Ammonia (NH_3)	mg/L	0.5	1.00	0.10	0.35	2.00	0.15	0.75	0.15	4.00
Salinity	ppt	NA	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
Conductivity	µS	NA	0.0	0.0	0.0	0.0	0.0	11.6	0.0	0.4
Temperature	°C	NA	13.2	12.6	13.6	12.2	12.8	13.8	12.0	12.8
pH		NA	7.71	7.00	7.48	7.04	7.80	6.80	7.23	6.85

Sampling Parameter	Unit	Threshold Value	Tributary Sampling						
			Sampling Location, Sampling Date, and Measured Value						
			8-1 (Wellington Brook discharge)	8-2 (DMH-23D045)	8-3 (Open Culvert behind Library)	8-4 (Open Culvert at Common St/Royal Rd)	8-5 (DMH-30D040.1)	8-6 (CB-30D067)	10-1 (Winn Brook Open Channel at Claflin St)
			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	9200	>20000	ND	ND	2900	8300	2700
Enterococci	MPN/100mL	61	2200	11200	ND	ND	1000	2000	2700
Surfactants	ppm	0.25	0.00	1.50	0.25	0.00	0.25	0.25	0.15
Total Chlorine	mg/L	NA	0.13	0.33	0.18	0.45	0.07	0.30	0.02
Ammonia (NH_3)	mg/L	0.5	0.00	4.00	0.10	0.25	0.35	0.35	0.15
Salinity	ppt	NA	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Conductivity	µS	NA	0.0	0.0	0.0	6.0	0.0	0.4	0.5
Temperature	°C	NA	12.8	12.2	12.8	13.0	13.7	13.2	13.0
pH		NA	7.95	7.63	7.82	7.51	6.67	6.44	6.91

NA= Not Applicable
ND= None Detected
NF= No Flow


SAMPLE OF-15A (DMH-50D023)
SAMPLE OF-15 (DMH-46D060)
SAMPLES OF-11 & OF-11A (DMH-41D045)
SAMPLE OF-13 (DMH-41D057)
SAMPLE OF-12 (DMH-41D037)
SAMPLE 10-1 (FROM CULVERT)
SAMPLE OF-9A (FROM OUTFALL)
SAMPLE OF-9 (DMH-39D019)
SAMPLE 8-2 (DMH-23D045)
SAMPLE OF-10 (FROM OUTFALL)
SAMPLE 8-4 (FROM CULVERT)
SAMPLE OF-8 (DMH-22D027)
SAMPLE 8-5 (DMH-30D040.1)
SAMPLE 8-3 (FROM CULVERT)
SAMPLE 8-1 (FROM CULVERT)
SAMPLE OF-6 (DMH-22D066)
SAMPLE 8-6 (CB-30D067)
SAMPLE OF-5 (DMH-21D055)
SAMPLE OF-4 (DMH-21D070)
SAMPLE OF-3 (DMH-21D074)
SAMPLE OF-2 (DMH-11D010)
SAMPLE OF-1 (CB-01D012)
OUTFALL 15
OUTFALL 13
OUTFALL 12
OUTFALL 11
OUTFALL 10
OUTFALL 14
OUTFALL 9A
OUTFALL 9
OUTFALL 8
OUTFALL 7
OUTFALL 6
OUTFALL 5
OUTFALL 4
OUTFALL 3
OUTFALL 2
OUTFALL 1
SPY POND
LITTLE POND
CLAYPIT POND
FRESH POND
PAYSON PARK RESERVOIR (COVERED)
N
BELMONT, MA
2016 Stormwater Sampling & Analysis Program
Figure 1
Sample Locations
1 inch = 300 feet
LEGEND
Outfall Points
Drainage Mainline Pipe
CB Lateral Pipe
Drain Manhole
Catch Basin (CB)
Drain Watersheds
Water
Parcels
Stantec