



Town of Swampscott Department of Public Works

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Swampscott, Massachusetts 01907
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March 1, 2022

Ms. Elizabeth Kudarauskas
Water Compliance Unit
U.S. Environmental Protection Agency, Region 1
5 Post Office Square, Suite 100
Mail Code OES04-2
Boston, MA 02109-3912

**SUBJECT: Consent Decree Compliance Report
Period 8/1/2021 to 1/31/2022**

Dear Ms. Kudarauskas:

Pursuant to Paragraph 66 of the Consent Decree between the U.S. EPA and the Town of Swampscott, MA, I am providing the following certification statement with regard to the preparation and submittal of: **Compliance Reporting – Period 8/1/2021 to 1/31/2022**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Gino A. Cresta, Jr.
Director of Public Works

MEMORANDUM

TO: Elizabeth Kudarauskas | US EPA

FROM: David Peterson | Kleinfelder

DATE: March 1, 2022

CC: Gino Cresta | Town of Swampscott
Mark Thompson, Cecilia Carmona, Dan Scott | Kleinfelder

**SUBJECT: COMPLIANCE REPORTING - CASE 1:15-CV-13388-DJC
SWAMPSCOTT, MASSACHUSETTS**

Purpose:

This Compliance Report is provided pursuant to Paragraph 33 of the subject Consent Decree between the United States of America and the Town of Swampscott, MA. This report covers the reporting period noted below:

Reporting Period: August 1, 2021 through January 31, 2022
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Through this reporting period, activities primarily included:

- Construction of Phase 1C sewer rehabilitation improvements in Stacy's Brook.
- Phase 1C mid-construction stormwater quality sampling in Stacy's Brook.
- Phase 1B Post-Construction Activities
 - Follow-up warranty inspections of laterals included the Phase 1B construction scope.
 - House dye testing in targeted areas of the Phase 1B project area, and Humphrey Street.
- Initial planning activities regarding the use of available American Rescue Plan Act (ARPA) funds.

The following report summarizes the activities performed during the Reporting Period.

Phase 1C Construction Update

The Stacy's Brook Sewer System Rehabilitation Project Phase 1C includes comprehensive sewer rehabilitation in specific neighborhoods in the Stacy's Brook catchment, consisting of cured in place pipe (CIPP) lining of sewer mainlines and laterals, sewer manhole rehabilitation, and split-wall sewer manhole rehabilitation (Type 2 underdrain manholes).

The Phase 1C project scope includes the comprehensive rehabilitation of the sewer collection system in the remaining Phase 1 areas that were not completed in Phases 1A or 1B. These areas are primarily located in the southern part of the Stacy's Brook catchment that converge at the intersection of Paradise Road and Norfolk Avenue.

In addition to the Phase 1 area, the Phase 1C project scope includes CIPP lining of sewer mainlines on Puritan Road, adjacent to Fisherman's Beach. These mainlines were included as an additive bid item and were part of the original Areas Beyond Stacy's Brook (ABSB) design scope required by paragraph 19 of the Town's Consent Decree. The lining of these ABSB mainlines on Puritan Road is the first step in implementing a similar rehabilitation approach to the Phase 1 area, by sealing the sewer within the Fishman's Beach catchment that are in similar depth and proximity to the drainage system.

Kleinfelder awarded the Phase 1C contract to National Water Main Cleaning Co. (NWMCC) on December 28, 2020 for a total contract price of \$1,762,773. The Town issued the Notice to Proceed on February 9, 2021, and construction activities began shortly after in March 2021.

During the current reporting period, NWMCC completed CIPP rehabilitation of 11,000 linear feet (LF) of mainline and 87 laterals within the Phase 1C project scope. In addition, their subcontractor N&M Excavating completed open-cut repairs of 44 lateral defects. Open-cut repairs were completed at locations on sewer mainline and laterals where structural defects would prohibit the proper installation and jeopardize long term structural integrity of a CIPP liner. In addition, open-cut repairs were completed at locations where the sewer lateral connected to the chimney using a 90-degree bend. This connection angle would have made CIPP lining infeasible, and therefore, the 90-degree connection was replaced two (2) 45-degree bends. In the upcoming reporting period, National Water Main Cleaning Co. plans to complete the remaining rehabilitation of sewer manholes, mainlines and laterals within the phase 1C project scope.

Phase 1C Mid-Construction Stormwater Quality Sampling

In addition to the construction efforts, Kleinfelder completed one round of dry weather water quality monitoring within the Phase 1C project area in October 2021. To date, Kleinfelder has completed two (2) rounds of dry weather and zero (0) rounds of wet weather sampling during Phase 1C construction. The water quality monitoring performed was consistent with the Illicit Discharge Detection and Elimination (IDDE) procedure detailed in the Consent Decree between the Town and the US EPA. The sampling was conducted at ten (10) locations, including the drainage manhole near the southern extent of the Stacy's Brook Phase 1 project area, immediately upstream of the intersection of Paradise Road and Burrill Street and at the Stacy's Brook outfall during low tide. A map showing the water quality monitoring locations and the lab results from the one round of dry weather preconstruction water quality monitoring are included in **Appendix A**. After the completion of Phase 1C construction, two rounds of wet weather and two rounds of dry weather post construction water quality monitoring will be performed consistent with the IDDE procedures detailed in the Consent Decree between the Town and the US EPA.

Phase 1B Post-Construction Activities

Follow-up warranty inspections of all the sewer mainlines (over 17,000 linear feet) and sewer laterals (202) rehabilitated by Rapid Flow were completed during the prior reporting period (February 1, 2021 – July 31 2021). During the current reporting period, Rapid Flow completed

follow-up warranty CCTV inspections from inside the house of three (3) sewer laterals that were included in the Phase 1B project scope. These laterals were those that were unable to be fully inspected from the mainline due to obstacles. Per the contract specifications, the warranty inspections were completed at least 1 year after construction. Kleinfelder is working with Rapid Flow to review the warranty inspection videos and ensure all mainlines and laterals are in acceptable condition.

In addition, during the current reporting period, Kleinfelder completed IDDE dye testing investigations at two (2) properties within the Phase 1B project area on Banks Road, and four (4) properties on Humphrey Street/Eastern Ave near the Stacy's Brook outfall. The remaining properties were completed during the previous reporting period. A map of the properties included in the IDDE dye testing scope are included in **Appendix B**.

The properties on Banks Road were targeted for dye testing due to high concentrations of enterococcus identified during Phase 1B post-construction water quality sampling. Kleinfelder included the properties on Stetson Avenue in the scope due to prior drain smoke testing results that required a follow up investigation. The properties on Humphrey Street/Eastern Ave were included per the request of the Department of Conservation and Recreation (DCR), based on an independent IDDE investigation completed in May and June of 2019. The letter from DCR is included in **Appendix C**.

Kleinfelder completed the dye testing investigations over several days due to the availability of homeowners. The first set of investigations occurred during the previous reporting period on July 29, 2021 (see previous report for narrative). The additional two rounds of investigations were completed this reporting period on August 9 and September 24. In all, Kleinfelder completed tracer dye testing and building inspections at twelve (12) of the thirteen (13) selected properties. This included seven (7) of the seven (7) properties within the Phase 1B project area, and five (5) of the six (6) properties on Humphrey Street. The homeowner at 8 Humphrey Street refused to permit Kleinfelder, despite several attempts, to perform the dye test. The building is unoccupied, and the Town is working with the homeowner towards a resolution. The Humphrey Street investigations were conducted during low tide conditions due to the proximity to the King's Beach outfall.

The investigations completed on Humphrey Street did not identify any illicit connections to the storm drain. The tracer dye was identified exclusively in the sewer in all investigations in the Phase 1B project area aside from 34 Banks Road. During the investigation at 34 Banks Road, the tracer dye was immediately identified in the sewer and later identified in the storm drain approximately 30 minutes after the test began. Based on the results of the investigation, the Town and homeowner were immediately notified.

Within the following month, Kleinfelder completed follow up CCTV investigations of the upstream storm drain mainline and two (2) unknown PVC laterals that connected to the storm drain manhole where the tracer dye was observed during the testing at 34 Banks Road. The CCTV investigation of the two (2) unknown PVC laterals did not identify any items of concern related to IDDE, while the investigation of the upstream storm drain mainline identified structural defects (cracks, fractures, offset joints). Additionally, Kleinfelder reviewed the Phase 1B CIPP warranty CCTV inspection of the 34 Banks Road sewer lateral, and identified a joint offset near the connection between the home's cast iron plumbing and rehabilitated portion of the lateral. The defect likely allows a portion sanitary discharge exiting the building's plumbing to percolate into the underlying

soil. Kleinfelder suspects that sewage from 34 Banks Road is migrating through the soil and infiltrating into the storm drain through structural defects in the storm drain mainline pipeline or laterals. Rapid Flow was notified of the critical lateral defect and the repair was completed on 2/23/2022. A follow up dye test and storm water quality testing in accordance with the consent decree will be conducted after the repair is completed to confirm that the issue is resolved.

ARPA Funds

The American Rescue Plan Act included \$2.5 Million in funding to the Town of Swampscott to be expended for projects that improve the water quality at King's Beach and in Nahant Bay. During this reporting period, Kleinfelder and the Town held initial discussions about the potential uses of these funds. Further discussions and evaluations regarding optimization of the funds are anticipated in the upcoming reporting period.

Tracking Data Tables:

In accordance with Paragraph 33 of the Consent Decree, a series of tracking tables are presented furnishing the information requested.

- a) Chronology of SSO Events Occurring during Reporting Period
- b) Catchment Area Inspections Completed during Reporting Period
- c) Percentage of Catchment Area Investigated and Addressed
- d) Listing of Illicit Discharges Verified during Reporting Period
 - i) Illicit Connections
 - ii) Sanitary Sewer Defects
- e) Map of Location of Each Illicit Discharge Verified during Reporting Period
- f) Chart of Inspections Completed and Enforcement Actions Taken during Reporting Period
- g) List of Plans, Reports and other Submissions Required by this Consent Decree made during the Reporting Period
- h) Copies of Sampling Results Received during Reporting Period
- i) Planned Activities during the 6 Months Following the Reporting Period
- j) Summary of Non-Compliance with this Consent Decree during the Reporting Period

a) Chronology of SSO Events Occurring during Reporting Period

A map displaying the location of the SSO events that occurred during the current reporting period is included in **Appendix D**.

i.	i.	i.	ii.	iii.	iii.	iii.	iv.	iv.	v.	vi.	vii.	vii.	viii.	ix.	ix.	xi.	xii.
Date/Time Reported	Date/Time Event Stopped	Date Reported to EPA and DEP	Location	Final Disposition	Property Backup (address)	Receiving Drainage Structure	Receiving Surface Water	Location Release Reached Surface Water	Source of Notification	Cause(s) of Release	Cause = Blockage	Cause = Capacity Issue	Measures Taken to Stop Discharge	Volume of Release (Gallons)	Basis of Estimate	Measures Taken to Prevent Future SSOs	Date of Last SSO at this Location
9/2/2021 8:00	9/2/2021 13:00	9/2/2021	Intersection of Ocean Ave and Shepard Ave	Overflow from sanitary sewer manhole in street.	None	Catch Basin	Palmer Pond	Yes	Public Works Staff	Rain Event	N/A	N/A	Closed off impacted area with sawhorses. Disinfected and pressure washed street.	1,500	Visual Estimate	None required.	None Known
9/2/2021 12:00	9/2/2021 20:00	9/2/2021	116 Windsor Ave	Pump station failure led to SSO discharge.	None	Catch Basin	Fosters Pond	Yes	Resident	Rain Event and Pump Station Failure	N/A	N/A	Called in Town's lift station O/M contractor to investigate issue. Disinfected and pressure washed street.	500	Visual Estimate	None required.	None Known

b) Catchment Area Inspections completed during Reporting Period

c) Percentage of Catchment Area Investigated and Addressed

Note that this reporting is in relation to meeting the Remedial Measures stipulated in Section VII of the consent decree. In order to meet the objectives of the consent decree, the Town's scope of work is not specifically following an IDDE Plan, but rather, is directly following the Remedial Measures themselves, and the Scope of Work for the Stacy's Brook drainage area that was submitted to the EPA on 10/26/2015.

33.b.i, ii	Sub-Catchment Area ID	Number of Drain Manholes in Sub-Catchment	Number of Drain Manholes Inspected						Number of Drain Manholes Addressed					
			Previous Reporting Periods		This Reporting Period		To-Date		Previous Reporting Periods		This Reporting Period		To-Date	
			QTY	%	QTY	%	QTY	%	QTY	%	QTY	%	QTY	%
1	Stacey's Brook	236	21	9%	0	0%	21	9%	6	3%	0	0%	6	3%
2	Other	372	78	21%	0	0%	78	21%	0	0%	0	0%	0	0%
		TOTAL	99	16%	0	0%	99	16%	6	1%	0	0%	6	1%

33.b.iii, 33.c	Sub-Catchment Area ID	Length of Drain in Sub-Catchment	Length of Drain Inspected						Length of Drain Addressed					
			Previous Reporting Periods		This Reporting Period		To-Date		Previous Reporting Periods		This Reporting Period		To-Date	
			FT	%	FT	%	FT	%	FT	%	FT	%	FT	%
1	Stacey's Brook	55,600	21,000	38%	100	.1%	21,100	38 %	650	1%	0	0%	650	1%
2	Other	95,000	3,263	3%	0	0%	3,263	3%	0	0%	0	0%	0	0%
		TOTAL	24,263	16%	100	.07%	24,363	16%	650	.4%	0	0%	650	.4%

d) Listing of Illicit Discharges Verified during Reporting Period

									Total Volume Removed (Gallons)							
									Prior Reporting Periods	269,376						
									This Reporting Period	2,000						
									Cumulative To Date	271,376						
Discharge Type	Date Verified	Location / Address	SOURCE if: Building Type	SOURCE if: Sewer Exfiltration	Estimated Flow (GPM)	Actions Taken to Remove	Date Removed	Cost to Remove	Volume Removed (Gallons) (Reporting Period)	Actively Discharging > 60 Days	Explanation	Schedule for Removal	Private Discharges Persisting > 90 days	Town's Legal Enforcement Actions	Reasons for Delay	
Paragraph -->	i.	i.	i.	i.	ii.	iii.	iv.	v.	vi.	vii.	vii.	viii.	ix.	ix.	x.	
Sewer Defect	12/16/2021	100 Puritan Ln	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	12/16/2021	unknown	unknown	No	n/a	completed	No	None	n/a	
Sewer Defect	12/7/2021	14 New Ocean St	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	12/7/2021	unknown	unknown	No	n/a	completed	No	None	n/a	
Sewer Defect	12/7/2021	20 Sutton Pl	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	12/7/2021	unknown	unknown	No	n/a	completed	No	None	n/a	
Sewer Defect	10/6/2021	11 Plymouth Ave	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	10/6/2021	unknown	unknown	No	n/a	completed	No	None	n/a	

Discharge Type	Date Verified	Location / Address	SOURCE if: Building Type	SOURCE if: Sewer Exfiltration	Estimated Flow (GPM)	Actions Taken to Remove	Date Removed	Cost to Remove	Volume Removed (Gallons) (Reporting Period)	Actively Discharging > 60 Days	Explanation	Schedule for Removal	Private Discharges Persisting > 90 days	Town's Legal Enforcement Actions	Reasons for Delay
Paragraph -->	i.	i.	i.	i.	ii.	iii.	iv.	v.	vi.	vii.	vii.	viii.	ix.	ix.	x.
Sewer Defect	9/2/2021	Intersection of Ocean Ave and Shepard Ave	Public - Sewer Manhole	Overflow from sanitary sewer manhole due to large rain event	not estimated	Town closed off impacted area with sawhorses, and disinfected and pressure washed street.	9/2/2021	unknown	1,500	No	n/a	completed	No	None	n/a
Sewer Defect	9/2/2021	116 Windsor Ave	Public - Pump Station	Overflow from pump station failure due to large rain event	not estimated	Town called in lift station O/M contractor to investigate issue, and disinfected and pressure washed street.	9/2/2021	unknown	500	No	n/a	completed	No	None	n/a
Sewer Defect	8/13/2021	179R Burrill Street	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	8/13/2021	unknown	unknown	No	n/a	completed	No	None	n/a
Sewer Defect	8/9/2021	34 Banks Rd	Residential	Exfiltration from Sewer Lateral Defect - Confirmed by IDDE Dye Test	not estimated	None	N/A	N/A	N/A	Yes	Scheduling conflicts between homeowner and contractor.	2/23/22	Yes	None	Scheduling conflicts between homeowner and contractor.

Discharge Type	Date Verified	Location / Address	SOURCE if: Building Type	SOURCE if: Sewer Exfiltration	Estimated Flow (GPM)	Actions Taken to Remove	Date Removed	Cost to Remove	Volume Removed (Gallons) (Reporting Period)	Actively Discharging > 60 Days	Explanation	Schedule for Removal	Private Discharges Persisting > 90 days	Town's Legal Enforcement Actions	Reasons for Delay
Paragraph -->	i.	i.	i.	i.	ii.	iii.	iv.	v.	vi.	vii.	vii.	viii.	ix.	ix.	x.
Sewer Defect	8/3/2021	71 Franklin Ave	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	8/3/2021	unknown	unknown	No	n/a	completed	No	None	n/a

e) Map of Location of Each Illicit Discharge Verified during Reporting Period

A map showing the locations of all illicit discharges and SSOs is included in **Appendix D**.

f) Chart of Inspections Completed and Enforcement Actions Taken during Reporting Period

Due to a change of Town staff members during this reporting period, these items were accidentally not tracked and therefore cannot be reported. The items are currently being tracked once again and will be included in the next bi-annual report.

g) List of Plans, Reports and other Submissions Required by this Consent Decree made during the Reporting Period

Submission Description	Date Completed	Consent Decree Paragraph Reference
Bi-Annual Progress Report	9/1/2021	18

h) Copies of Sampling Results Received during Reporting Period

Results from one dry weather round of Phase 1C mid-construction water quality monitoring are provided in **Appendix A**.

i) Planned Activities during the 6 Months Following the Reporting Period

During the period February 1, 2022 through July 31, 2022 the following activities are anticipated:

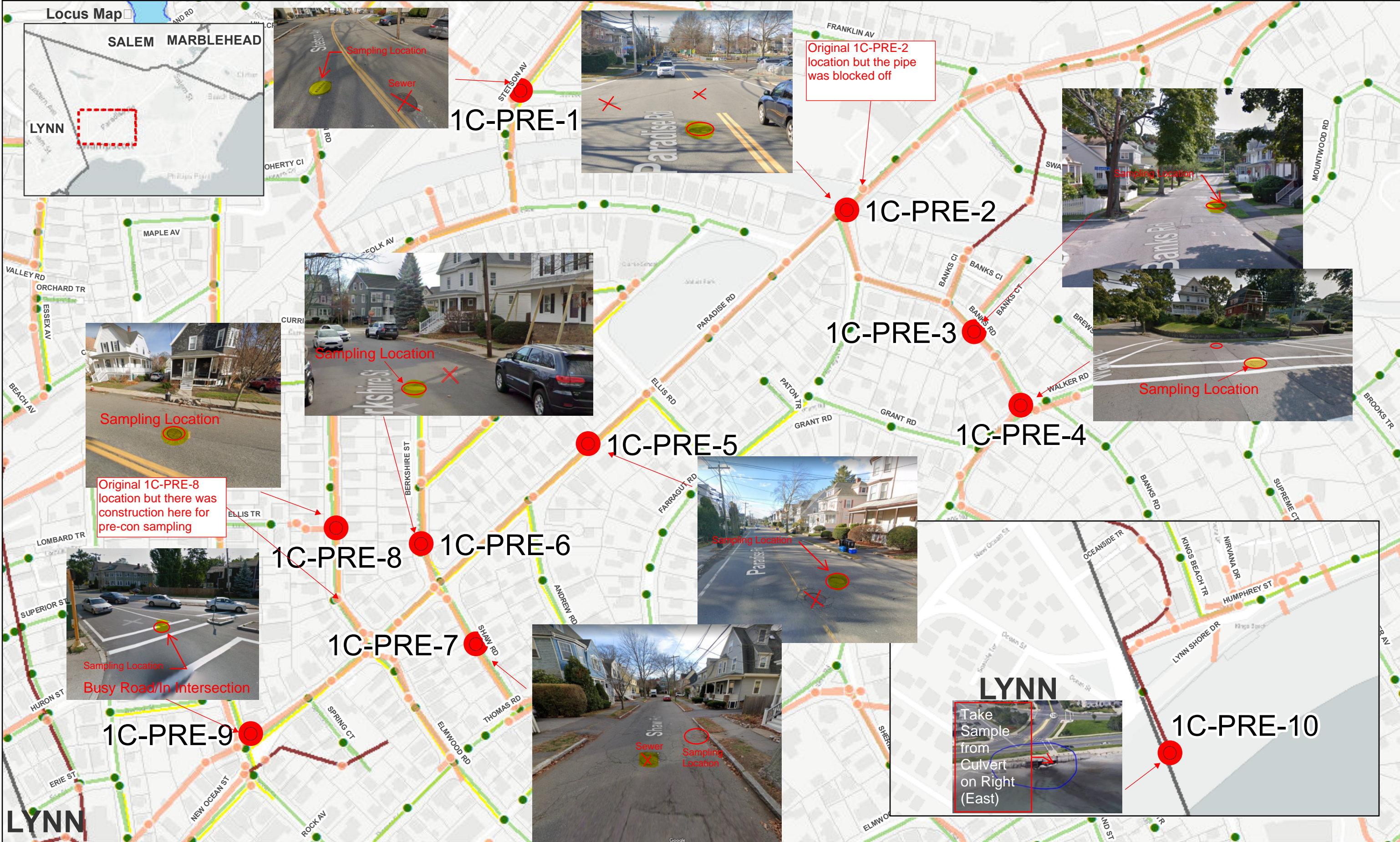
- Complete the construction of Phase 1C sewer rehabilitation improvements in the Stacy's Brook area.
- Complete review of Phase 1B warranty inspections and issue retainage to Rapid Flow to finalize contract.
- Complete Phase 1B house dye testing investigations and submit memorandum of findings to the Town.
- Continue discussions about the use of ARPA funds.

j) Summary of Non-Compliance with this Consent Decree during the Reporting Period

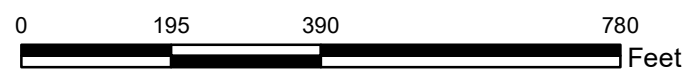
There has been no non-compliance during this report period.

Appendix A

Laboratory Results for Phase 1C Mid-Construction Dry Weather Monitoring



- Legend**
- Sampling_Locations_1C
 - Drain MH (MS4)
 - Gravity Sewer Pipelines
 - Drain Gravity Pipe
 - Sewer MH
 - Drain Culvert
 - Sewer Underdrain



PROJECT NO.	20211277
DRAWN:	4/12/2021
DRAWN BY:	EON
CHECKED BY:	DTP
FILE NAME:	Phase 1C Water Quality Test Sites PreC

**Pre Construction
Water Quality
Test Locations
Phase 1C
Town of Swampscott, MA**



ANALYTICAL REPORT

Lab Number:	L2154962
Client:	Kleinfelder One Beacon Street Suite 8100 Boston, MA 02108
ATTN:	Elyse Noll
Phone:	(617) 498-4681
Project Name:	SWAMPSCOTT PHASE 1C
Project Number:	20220949
Report Date:	10/22/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2154962-01	IC-MID-10	WATER	SWAMPSCOTT, MA	10/08/21 07:54	10/08/21
L2154962-02	IC-MID-01	WATER	SWAMPSCOTT, MA	10/08/21 09:38	10/08/21
L2154962-03	IC-MID-3	WATER	SWAMPSCOTT, MA	10/08/21 08:44	10/08/21
L2154962-04	IC-MID-4	WATER	SWAMPSCOTT, MA	10/08/21 09:06	10/08/21
L2154962-05	IC-MID-8	WATER	SWAMPSCOTT, MA	10/08/21 10:20	10/08/21

Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

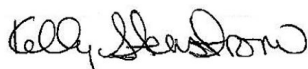
Case Narrative (continued)

Sample Receipt

L2154962-04: The collection date and time on the chain of custody was 08-OCT-21 09:05; however, the collection date/time on the container label was 08-OCT-21 09:06. At the client's request, the collection date/time is reported as 08-OCT-21 09:06.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 10/22/21

INORGANICS & MISCELLANEOUS

Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2154962-01
Client ID: IC-MID-10
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 07:54
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	1119.87		MPN/100ml	1	NA	1	-	10/08/21 15:13	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2154962-02
Client ID: IC-MID-01
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 09:38
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	25.3		MPN/100ml	1	NA	1	-	10/08/21 15:13	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2154962-03
Client ID: IC-MID-3
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 08:44
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	1203.33		MPN/100ml	1	NA	1	-	10/08/21 15:13	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2154962-04
Client ID: IC-MID-4
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 09:06
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	265.58		MPN/100ml	1	NA	1	-	10/08/21 15:13	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2154962-05
Client ID: IC-MID-8
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 10:20
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	365.4		MPN/100ml	1	NA	1	-	10/08/21 15:13	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C

Lab Number: L2154962

Project Number: 20220949

Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab for sample(s): 01-05 Batch: WG1556340-1										
ENTEROCOCCUS	<1		MPN/100ml	1	NA	1	-	10/08/21 15:13	102,ENTEROLER T	JW

Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Serial_No:10222113:49
Lab Number: L2154962
Report Date: 10/22/21

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler **Custody Seal**
A Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2154962-01A	Bacteria Cup Na2S2O3 preserved	A	NA		6.0	Y	Absent		ENTRO-QT(.33)
L2154962-01B	Bacteria Cup Na2S2O3 preserved	A	NA		6.0	Y	Absent		ENTRO-QT(.33)
L2154962-02A	Bacteria Cup Na2S2O3 preserved	A	NA		6.0	Y	Absent		ENTRO-QT(.33)
L2154962-02B	Bacteria Cup Na2S2O3 preserved	A	NA		6.0	Y	Absent		ENTRO-QT(.33)
L2154962-03A	Bacteria Cup Na2S2O3 preserved	A	NA		6.0	Y	Absent		ENTRO-QT(.33)
L2154962-03B	Bacteria Cup Na2S2O3 preserved	A	NA		6.0	Y	Absent		ENTRO-QT(.33)
L2154962-04A	Bacteria Cup Na2S2O3 preserved	A	NA		6.0	Y	Absent		ENTRO-QT(.33)
L2154962-04B	Bacteria Cup Na2S2O3 preserved	A	NA		6.0	Y	Absent		ENTRO-QT(.33)
L2154962-05A	Bacteria Cup Na2S2O3 preserved	A	NA		6.0	Y	Absent		ENTRO-QT(.33)
L2154962-05B	Bacteria Cup Na2S2O3 preserved	A	NA		6.0	Y	Absent		ENTRO-QT(.33)

*Values in parentheses indicate holding time in days



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: Data Usability Report



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2154962
Report Date: 10/22/21

Data Qualifiers

the identification is based on a mass spectral library search.

- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

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REFERENCES

- 102 Standard Test Method for Enterococci in Water Using Enterolert (IDEXX Defined Substrate Technology), American Society of Testing & Materials, ASTM D6503-99.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

EPA 522, EPA 537.1.

Non-Potable Water


EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



CHAIN OF CUSTODY

PAGE OF

Westborough, MA Mansfield, MA
 TEL: 508-898-9220 TEL: 508-822-8300
 FAX: 508-898-9193 FAX: 508-822-3288

Project Information

Project Name: Swampscott Phase 1C

Project Location: Swampscott, MA

Project #:

Project Manager:

ALPHA Quote #:

Date Rec'd in Lab: 10/8/21

ALPHA Job #: L2154962

Client Information

Client: Kleinfelder - Elyse Noll

Address: 1 Beacon St. Suite 8100
Boston, MA 02108

Phone: 570-975-9111

Fax:

Email: ENoll@Kleinfelder.com

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Report Information

FAX EMAIL

ADEx Add'l Deliverables

Regulatory Requirements/Report Limits

State/Fed Program: Criteria:

Billing Information

Same as Client info PO #:

Turn-Around Time

Standard Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials	Enterococcus											Sample Specific Comments					
		Date	Time																			
<u>54962-01</u>	<u>1C-Mid-10</u>	<u>10/8/21</u>	<u>7:54</u>		<u>EN</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<u>-02</u>	<u>1C-Mid-01</u>	<u>10/8/21</u>	<u>9:38</u>		<u>EN</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<u>-03</u>	<u>1C-Mid-3</u>	<u>10/8/21</u>	<u>8:44</u>		<u>EN</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<u>-04</u>	<u>1C-Mid-4</u>	<u>10/8/21</u>	<u>9:05</u>		<u>EN</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<u>-05</u>	<u>1C-Mid-8</u>	<u>10/8/21</u>	<u>10:20</u>		<u>EN</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
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SAMPLE HANDLING

Filtration

Done

Not Needed

Lab to do

Preservation

Lab to do
(Please specify below)

Container Type: Preservative:

Relinquished By: Jon Rolis Date/Time: 10/8/21 10:40

Received By: David D'Amico Date/Time: 10-8-21 10:40

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-010-101 (Rev. 5-200-12)

TOTAL # BOTTLES



ANALYTICAL REPORT

Lab Number:	L2155075
Client:	Kleinfelder One Beacon Street Suite 8100 Boston, MA 02108
ATTN:	Elyse Noll
Phone:	(617) 498-4681
Project Name:	SWAMPSCOTT PHASE 1C
Project Number:	20220949
Report Date:	10/22/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2155075-01	IC-MID-02	WATER	SWAMPSCOTT, MA	10/08/21 11:20	10/08/21
L2155075-02	IC-MID-05	WATER	SWAMPSCOTT, MA	10/08/21 11:48	10/08/21
L2155075-03	IC-MID-09	WATER	SWAMPSCOTT, MA	10/08/21 12:15	10/08/21
L2155075-04	IC-MID-07	WATER	SWAMPSCOTT, MA	10/08/21 12:40	10/08/21
L2155075-05	IC-MID-06	WATER	SWAMPSCOTT, MA	10/08/21 13:02	10/08/21
L2155075-06	IC-MID-11	WATER	SWAMPSCOTT, MA	10/08/21 13:30	10/08/21

Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.


When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative

Date: 10/22/21

INORGANICS & MISCELLANEOUS

Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2155075-01
Client ID: IC-MID-02
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 11:20
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	191.79		MPN/100ml	1	NA	1	-	10/08/21 16:52	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2155075-02
Client ID: IC-MID-05
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 11:48
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	1119.87		MPN/100ml	1	NA	1	-	10/08/21 16:52	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2155075-03
Client ID: IC-MID-09
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 12:15
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	365.4		MPN/100ml	1	NA	1	-	10/08/21 16:52	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2155075-04
Client ID: IC-MID-07
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 12:40
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	30.51		MPN/100ml	1	NA	1	-	10/08/21 16:52	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2155075-05
Client ID: IC-MID-06
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 13:02
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	547.5		MPN/100ml	1	NA	1	-	10/08/21 16:52	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

SAMPLE RESULTS

Lab ID: L2155075-06
Client ID: IC-MID-11
Sample Location: SWAMPSCOTT, MA

Date Collected: 10/08/21 13:30
Date Received: 10/08/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab										
ENTEROCOCCUS	866.44		MPN/100ml	1	NA	1	-	10/08/21 16:52	102,ENTEROLER	JW



Project Name: SWAMPSCOTT PHASE 1C

Lab Number: L2155075

Project Number: 20220949

Report Date: 10/22/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Microbiological Analysis - Westborough Lab for sample(s): 01-06 Batch: WG1556388-1										
ENTEROCOCCUS	<1		MPN/100ml	1	NA	1	-	10/08/21 16:52	102,ENTEROLER T	JW

Project Name: SWAMPSCOTT PHASE 1C**Lab Number:** L2155075**Project Number:** 20220949**Report Date:** 10/22/21**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2155075-01A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-01B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-02A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-02B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-03A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-03B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-04A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-04B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-05A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-05B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-06A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2155075-06B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)

Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report



Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: Data Usability Report



Project Name: SWAMPSCOTT PHASE 1C
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Data Qualifiers

the identification is based on a mass spectral library search.

- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: SWAMPSCOTT PHASE 1C
Project Number: 20220949

Lab Number: L2155075
Report Date: 10/22/21

REFERENCES

- 102 Standard Test Method for Enterococci in Water Using Enterolert (IDEXX Defined Substrate Technology), American Society of Testing & Materials, ASTM D6503-99.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.





SM2340B

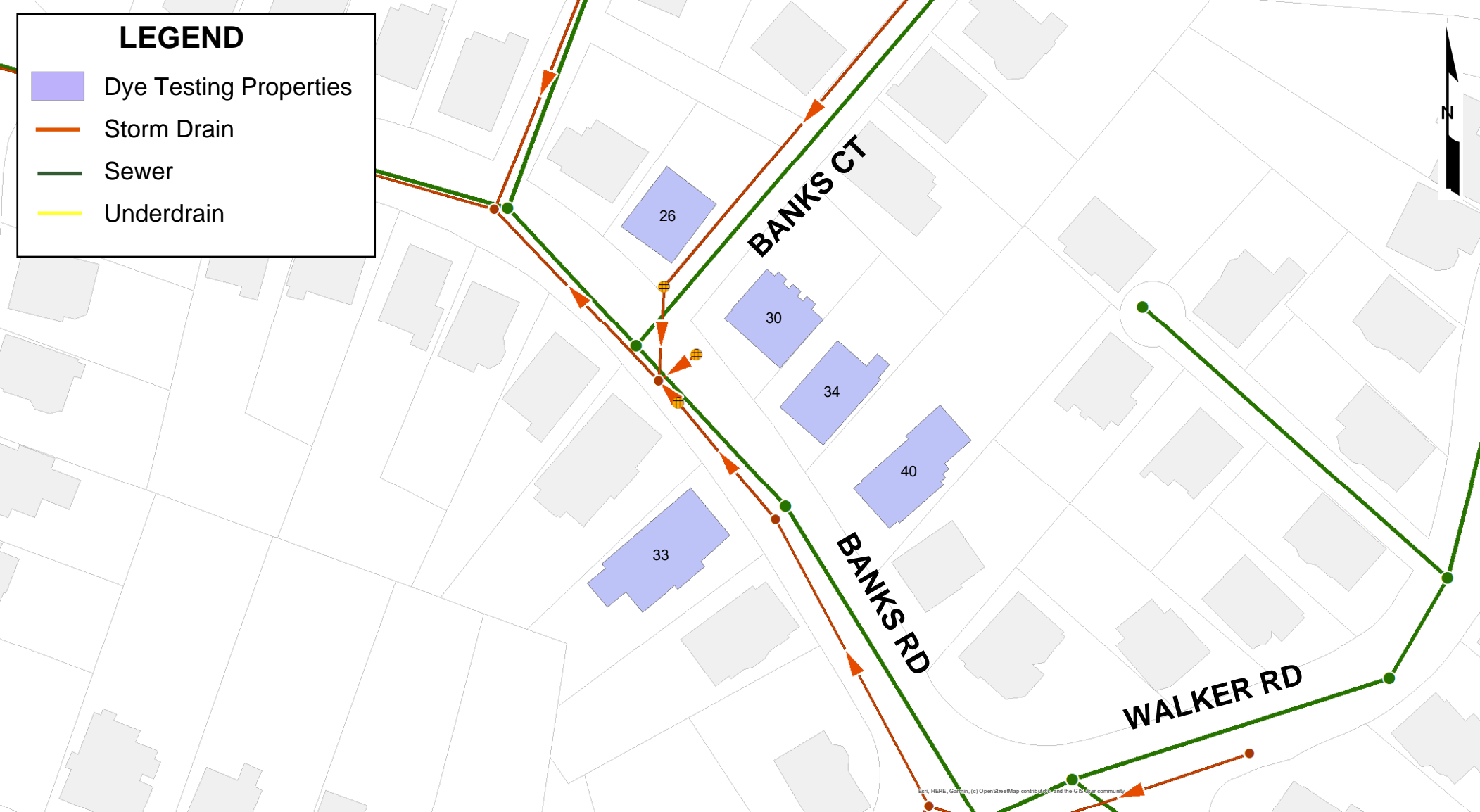
For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Appendix B





Stacy's Brook Phase 1B House Dye Testing Locations

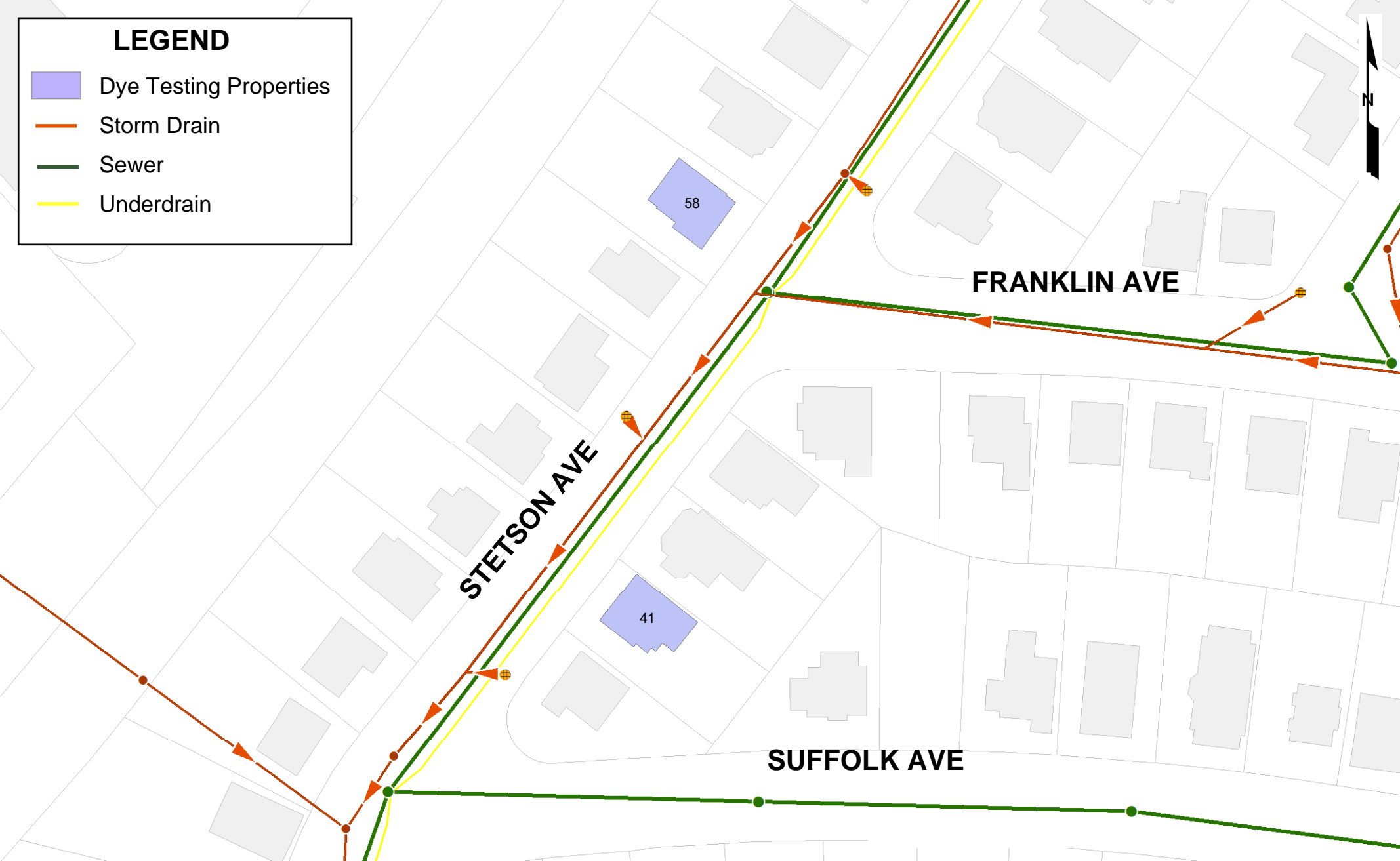
LEGEND

-  Dye Testing Properties
-  Storm Drain
-  Sewer
-  Underdrain







LEGEND

-  Dye Testing Properties
-  Storm Drain
-  Sewer
-  Underdrain



LEGEND

-  Dye Testing Properties
-  Storm Drain
-  Sewer
-  Underdrain



Appendix C

Department of Conservation and Recreation IDDE Memo



November 20, 2019
Mr. Gino A. Cresta, Jr.
Director of Public Works
Town of Swampscott
22 Monument Avenue
Swampscott, MA 01907

Re: DCR 2019 Illicit Discharge Detection & Elimination (IDDE) – Stacey Brook Screening Results

Under its National Pollutant Discharge Elimination System (NPDES) municipal separate storm sewer systems (MS4) permit, DCR is required to investigate stormwater outfalls with sampling results indicating potential illicit discharges. In May and June of 2019, DCR investigated the Stacey Brook storm drainage area which drains to Nahant Bay. This letter provides you with the results of DCR's 2019 screening and the recommended next steps.

As shown on the attached **Figure 1**, the storm drainage area is located around Stacey Brook in Lynn and Swampscott, MA (the Project Site). DCR's drainage network to these outfalls is mostly limited to Lynn Shore Drive, Red Rock Beach, and the landscaped areas between the roadway and beach; it also includes a portion of Eastern Ave and Humphrey Street. Before the spring 2019 investigation, DCR had previously identified these outfalls as having potential illicit connections due to dry weather flows.

DCR conducted the dry-weather investigation over several days. Initial site investigation and sampling was conducted on May 22, 2019. Within the previous 24 hours, 0 inches of rain fell¹ which qualified sampling as a dry weather survey according to the MS4 permit definition. The field crew investigated DCR's drainage system leading to Outfall 37114.10 in Lynn and Outfall 38017.00 in Swampscott by opening each manhole and taking a water sample if there was dry weather flow in a particular pipe.

During the investigation, several pipes were dry; the field crew did not place sand bags² at that time due to forecasted rain in the following days. The field crew went back to the site to place sandbags on June 18, 2019 and returned on June 20, 2019 to pick-up the sandbags and sample pipes with flow. Within the previous 24 hours of June 18, 2019, 0 inches of rain fell and no runoff producing rain fell while the sandbags were in place.

The following parameters were tested for in the field, in accordance with DCR's IDDE Plan: temperature, conductivity, pH, salinity, ammonia, chlorine, and surfactants. In areas where these parameters which can be tested using field kits indicated potential contamination, the field crew took lab samples to test for *Enterococcus* bacteria (see **Table 1** below) to provide additional information on the dry weather flows.

¹ Rainfall data based on weather station KMALYNN12. <https://www.wunderground.com/dashboard/pws/KMALYNN12>.

² Sand bags are placed in pipes with no visible flow to determine if flow would collect behind the bag over a 48-hour dry weather period in an attempt to find sporadic dry weather discharges of non-stormwater flows.



DCR performed CCTV of the system and did not identify potential illicit connection in our part of the system. Review of the DCR system during dry weather flow narrowed down the area of interest to infrastructure located in Swampscott (as indicated on **Figure 1**), specifically the system portion from Manhole 666667001.00 and 25417.00 to Manhole 25415.00. DCR also reviewed publicly available sampling data in the surrounding Nahant Bay; sampling results in the bay were much lower than the concentrations observed in DCR's system and therefore it is unlikely that the contamination is due to the tidal influence on the system.

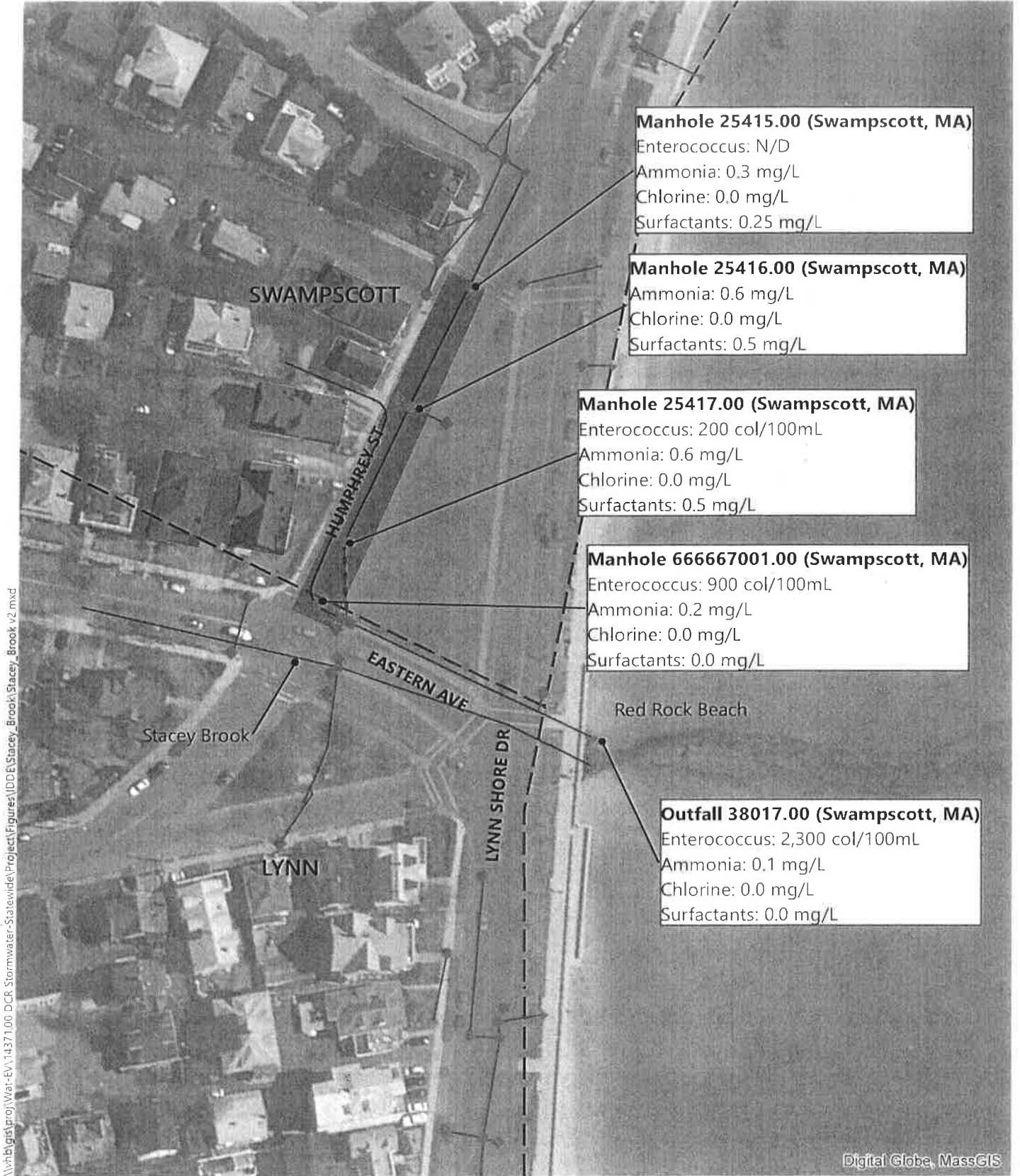
Therefore, DCR recommends that the Town of Swampscott conduct follow-up dye testing of the six residences indicated on **Figure 1** to help determine if the source(s) of the elevated water quality parameters are from illicit connections at these residences.

Please review the attached sampling results and provide us with the results of your investigation once complete. If you have any questions or comments regarding DCR's screening, please feel free to contact me at (339) 368-2930 / thomas.valton@mass.gov.

Sincerely,

A handwritten signature in black ink that reads "Thomas Valton". The signature is written in a cursive, flowing style.

Thomas Valton
Director, Stormwater & Environmental Section
MA Department of Conservation & Recreation



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Digital Globe, MassGIS



Stacey Brook IDDE Problem Outfall Investigation | Lynn and Swampscott, MA

- | | | |
|------------------------------------|---------------|---------------------|
| DCR Owned | DCR Inlet | DCR Linear Features |
| Houses recommended for dye testing | DCR Outlet | Flow observed |
| Area of Interest | DCR Manhole | Suspected flow |
| | DCR Vault Box | Town Boundary |

Table 1. Stacey Brook IDDE Investigation Sampling Results

Location	Date	Color/ Clarity of Flow	Floatables	Odor	Sewage/ Sheens/ Scum	Tempe (C)
<i>Swampscott, MA</i>						
Outfall 38017.00	5/22/19	Clear/Clear	No	Musty	No	18.5
MH 666667001.00	5/22/19	Clear/Clear	No	Musty	No	13.2
MH 25417.00	5/22/19	Clear/Clear	No	Musty	No	13.5
MH 25416.00	5/22/19	Clear/Clear	No	Musty	No	16.8
MH 25415.00	6/20/19	Sampled after placing sand bags ⁵		Musty	No	17.4
MH 25414.00	6/20/19	No flow detected after placing sand bags ⁵	NS	NS	NS	NS
MH 25413.00	6/20/19	No flow detected after placing sand bags ⁵	NS	NS	NS	NS

Note: Cells in **bold** exceed sewer input indicators outlined in the MS4 permit. NS = not sampled. ND = non-detect.

¹ According to the MS4 permit Part 2.3.4.7c.ii likely sewer input indicators are any of the following:

- Olfactory or visual evidence of sewage,
- Ammonia \geq 0.5 mg/L, surfactants \geq 0.25 mg/L, and bacteria levels greater than the water quality criteria applicable to the receiving water, or
- Ammonia \geq 0.5 mg/L, surfactants \geq 0.25 mg/L, and detectable levels of chlorine.

Conductivity ($\mu\text{S}/\text{cm}$)	pH	Salinity (ppt)	Ammonia (mg/L)	Chlorine (mg/L)	Surfactants (mg/L)	<i>Enterococcus</i> (col/100mL)	Meets MS4 sewer input indicators ¹
1,233.0	7.21	0.6	0.1	0.0	0.0	2,300	No
1,113.0	7.73	0.5	0.2	0.0	0.0	900	No
Outside Range ²	7.65	Outside Range ³	0.6	0.0	0.5	200	Yes
Outside Range ²	7.02	Outside Range ³	0.6	0.0	0.5	NS ⁴	Probable
Outside Range ²	7.42	Outside Range ³	0.3	0.0	0.25	ND	No
NS	NS	NS	NS	NS	NS	NS	No
NS	NS	NS	NS	NS	NS	NS	No

² Conductivity was $>20,000 \mu\text{S}/\text{cm}$, which is outside the range of sampling equipment.

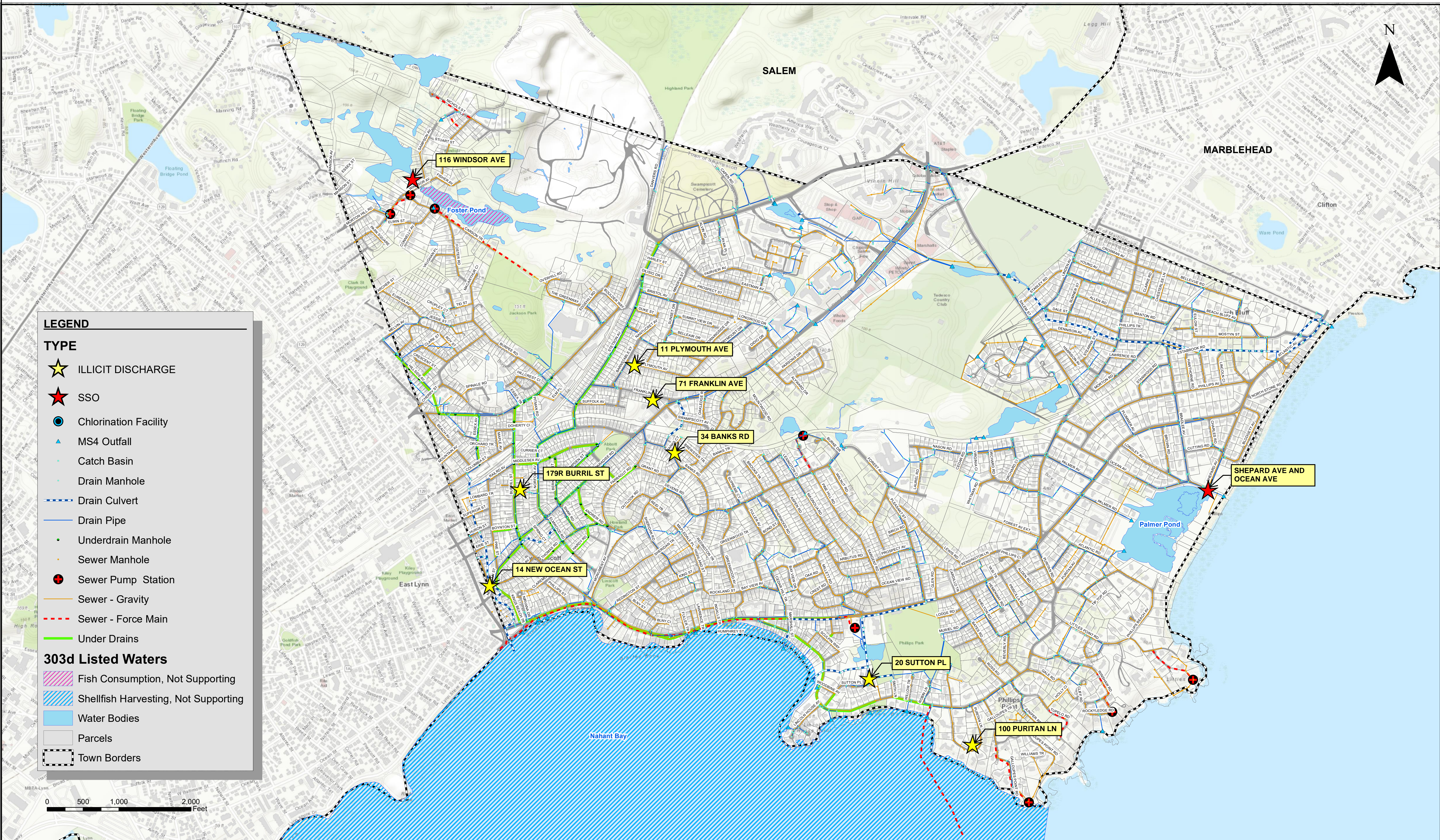
³ Salinity was $>20 \text{ ppt}$, which is outside the range of sampling equipment.

⁴ A bacteria sample was not taken at MH 25416.00 due to its close proximity to MH 25417.00.

⁵ Sandbags were in place for 48 hours

Appendix D

SSO and Illicit Discharge Map



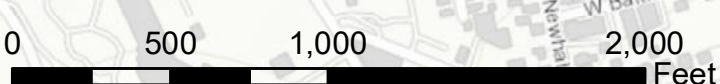
LEGEND

TYPE

- ★ ILLICIT DISCHARGE
- ★ SSO
- Chlorination Facility
- ▲ MS4 Outfall
- Catch Basin
- Drain Manhole
- Drain Culvert
- Drain Pipe
- Underdrain Manhole
- Sewer Manhole
- Sewer Pump Station
- Sewer - Gravity
- Sewer - Force Main
- Under Drains

303d Listed Waters

- ▨ Fish Consumption, Not Supporting
- ▨ Shellfish Harvesting, Not Supporting
- Water Bodies
- Parcels
- Town Borders



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PROJECT NO.	20192126
DRAWN:	3/1/2022
DRAWN BY:	JVR
CHECKED BY:	DFS
FILE NAME:	Compliance Reporting

APPENDIX D
ILLICIT DISCHARGE & SSO LOCATIONS
REPORTING PERIOD: 8/1/21 to 1/31/22
EPA Consent Decree Swampscott, Massachusetts