



Town of Swampscott
Department of Public Works

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September 1, 2023

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 2/1/2023 to 7/31/2023

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 2/1/2023 to 7/31/2023**

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: September 1, 2023

CC: Gino Cresta, Aleena Alsaraby | Town of Swampscott
Mark Thompson, Cecilia Carmona, John Rahill | 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: February 1, 2023 through July 31, 2023

Through this reporting period, activities primarily included:

- Completed construction of Phase 1C sewer rehabilitation improvements in Stacy's Brook
- Continued post-construction water quality sampling for Phase 1C sewer rehabilitation program
- Furthered the recommendations from the published report a study on engineering alternatives to improve water quality at King's Beach

The following report summarizes the activities performed during the Reporting Period, as well as ongoing and future work in the Town to address water quality concerns.

Phase 1C Construction Update

The Stacy's Brook Sewer System Rehabilitation Project Phase 1C included 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, and sewer manhole rehabilitation.

The Phase 1C project scope included 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.

Outside the physical limits of the Phase 1 area, the Phase 1C project scope also includes CIPP lining of approximately 1,000 linear feet of sewer mainlines on Puritan Road, adjacent to Fisherman's Beach. These mainlines were included as an additive bid item and were considered priority repairs because of the high bacteria counts found on Puritan Road during the catchment investigations within the Fisherman's Beach area.

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. As of January 31, 2023 the project was substantially complete.

During this current reporting period, the contractor completed follow-up warranty CCTV inspections of all mainline and lateral CIPP that was installed at least a year prior. The warranty inspections are intended to ensure that no defects of structural concern have formed in the liner since it was installed. The one-year time frame is based on industry accepted best practices that any CIPP defects subsequent to installation will form within the first year.

In the upcoming reporting period, Kleinfelder expects to receive the final warranty CCTV inspection videos from NWMCC for review and acceptance. Once accepted, the project closeout paperwork will be finalized, and the record drawings issued to the Town.

Since Phase 1C construction is substantially complete, we have included a summary of anticipated final costs for the project in **Table 1**.

Table 1 - Phase 1C Construction Cost Summary

Item	Unit	Bid Quantity	Final Quantity	Bid Cost	Final Cost
Sewer Mainline CIPP Lining (all diameters)	LF	14,090	14,356	\$363,172.00	\$362,983.90
Mainline Spot Repairs	EA	10	12	\$68,625.00	\$96,750.00
Mainline Heavy Cleaning	LF	1,300	6,650	\$6,500.00	\$41,020.00
Lateral CCTV	LF	10,400	14,656	\$174,200.00	\$245,479.63
Lateral CIPP Lining (Avg of 60' each)	EA	255	239	\$862,080.00	\$819,308.32
Lateral Spot Repairs	EA	28	111	\$105,175.00	\$626,898.90
Lateral Heavy Cleaning	LF	1,100	2,962	\$44,000.00	\$118,480.00
Manhole Lining	EA	81	80	\$91,715.00	\$114,044.80
Other Misc. Items (Mobilization, Paving, MH F&C, etc.)	LS	1	1	\$14,906.00	\$14,800.00
TOTAL				\$ 1,762,773	\$ 2,439,766

As shown in **Table 1**, the final cost of the Phase 1C project exceeded the bid cost by approximately \$677,000. The increase was primarily due to the unanticipated quantity of open-cut lateral spot repairs that were required to repair significant structural defects in the existing laterals, such as joint offsets, size changes, and large breaks. In addition, open-cut repairs were completed at lateral chimneys that discharge at 90-degree bends into the mainline. The 90-degree bends were replaced with two (2) 45-degree fittings to accommodate the CIPP. In addition to the lateral spot repairs, the final costs for lateral inspection and heavy cleaning significantly exceeded the bid cost.

The increases in the contract price were not expected but were well communicated and understood by the Town throughout construction. The Town preferred to comprehensively address the lateral defects to ensure the CIPP included the full linear footage of the lateral and to mitigate risk of problems with the cured liner. The primary goal of the Town was to ensure that the sewer system within the project area was addressed as completely as possible to further the ongoing efforts at improving stormwater quality.

Phase 1 Construction Costs

With the conclusion of Phase 1C construction, the Town of Swampscott has now completed the Phase 1 comprehensive sewer rehabilitation program, as originally envisioned. **Table 2** shows the overall combined construction costs for all three construction phases.

Table 2 - Phase 1 Construction Cost Summary

Item	Unit	Bid Quantity	Final Quantity	Bid Cost	Final Cost
Sewer Mainline CIPP Lining (all diameters)	LF	31,500	31,400	\$ 811,300	\$ 796,000
Sewer Mainline Replacement (8")	LF	6,000	5,900	\$ 650,700	\$ 642,800
Mainline Spot Repairs	EA	43	23	\$ 85,100	\$ 102,300
Mainline Heavy Cleaning	LF	3,000	6,700	\$ 11,600	\$ 41,000
Lateral CCTV	LF	10,400	14,700	\$ 174,200	\$ 245,500
Lateral CIPP Lining (Avg of 60' each)	EA	470	470	\$ 1,630,100	\$ 1,507,900
Lateral Spot Repairs					
Phase 1B		23	1	\$ 11,500	\$ 500
Phase 1C		28	111	\$ 105,175	\$ 626,899
Lateral Heavy Cleaning	LF	2,300	8,100	\$ 50,400	\$ 147,200
Manhole Lining	EA	240	250	\$ 369,800	\$ 367,600
Underdrain Repairs/Rehabilitation	EA	65	41	\$ 74,700	\$ 42,300
Other Misc. Items (Mobilization, Paving, MH F&C, etc.)	LS	1	1	\$ 324,000	\$ 285,400
TOTAL				\$ 4,300,000	\$ 4,810,000

The three construction phases consisted of the following:

- Phase 1A – Open cut replacement of approximately 6,000 linear feet of 6-inch diameter mainline with 8-inch diameter PVC mainline. The work also included sealing of the sewer underdrain system in 25 manhole locations. Phase 1A was not focused on specific neighborhoods and work was completed in various locations throughout the Phase 1 tributary area.
- Phase 1B – CIPP rehabilitation of approximately 17,000 linear feet of mainline pipe (8” – 12” diameter), CIPP rehabilitation of approximately 226 private sewer laterals, and cementitious lining of approximately 181 sewer manholes and underdrains. The work also included 11 mainline point repairs and 1 lateral point repair. Phase 1B was focused on the northern (upstream) portions of the Phase 1 tributary area.
- Phase 1C – CIPP rehabilitation of approximately 14,000 linear feet of mainline pipe (8” – 12” diameter), CIPP rehabilitation of approximately 239 private sewer laterals, and cementitious lining of approximately 80 sewer manholes. The work also included 12 mainline point repairs and 111 lateral point repairs. Phase 1C was focused on the southern (downstream) portions of the Phase 1 tributary area.

As shown in **Table 2**, the overall difference in construction costs compared with bid costs was approximately \$500,000. As described in the previous section, the difference was largely due to the unexpected quantity of lateral point repairs that were required in Phase 1C, underscoring the relatively poor condition of sewer laterals discovered so far during this program. Lateral inspection and cleaning also contributed to the overage.

The difference in lateral point repair quantities and costs between Phase 1B and Phase 1C are dramatic. While there are multiple reasons for this, such as older pipes, heavier traffic, and greater ground disturbance, the most important was the difference in contractors between the two phases. The Phase 1B contractor had a much higher risk tolerance for CIPP rehabilitation and lined through many structural defects (offsets, size changes, chimneys, etc.) that the Phase 1C contractor insisted on repairing. Overall, while the Phase 1C cost was higher due to the number of repairs, the quality of the completed liners was significantly better than Phase 1B. Note that the follow-up 1-year inspections for Phase 1B showed several quality concerns with the CIPP laterals, and these were repaired in coordination with the Contractor and the Town.

Phase 1 Monitoring Results

As part of the Phase 1 program, Kleinfelder completed water quality monitoring within the project area at critical junctures within the program timeline. The purpose of the sampling was to track water quality prior to, during, and after construction activities to evaluate the impact of the work. A GIS map of the locations of the sampling locations during the Phase 1 project, as well as preliminary Phase 2 IDDE is attached in **Appendix A**. A table with the compiled water quality results for each site is also included in **Appendix A**.

The first samples were taken during the Illicit Discharge Detection and Elimination (IDDE) and design stage for Phase 1 during the period between 2015 to 2016 to establish baseline conditions. This effort also include some preliminary Phase 2 locations.

No samples were taken during Phase 1A construction as the sewer replacement work was not comprehensive in nature and not expected to make water quality improvements.

Samples were taken prior to, during, and after the Phase 1B construction project from 2018 – 2020, and the Phase 1C construction project from 2021 – 2023. The samples taken prior to and during Phase 1B construction were only tested for bacteria.

Kleinfelder collected dry weather samples at all of these junctures. In addition, wet weather samples were taken during the IDDE and design stage as well as post construction for Phase 1B and Phase 1C.

Dry weather samples are considered more informative for isolating illicit discharges since the influence from surface wash off is absent from dry weather samples. In contrast, wet weather samples could include non-stormwater discharge from both illicit connections and from surface wash off. Therefore, dry weather sample results are more meaningful for tracking progress towards eliminating illicit connections.

Figure 1 displays the dry weather sampling results for bacteria (Enterococcus) for six (6) Phase 1 tributary area locations that were sampled at multiple dates between 2015 and 2023.

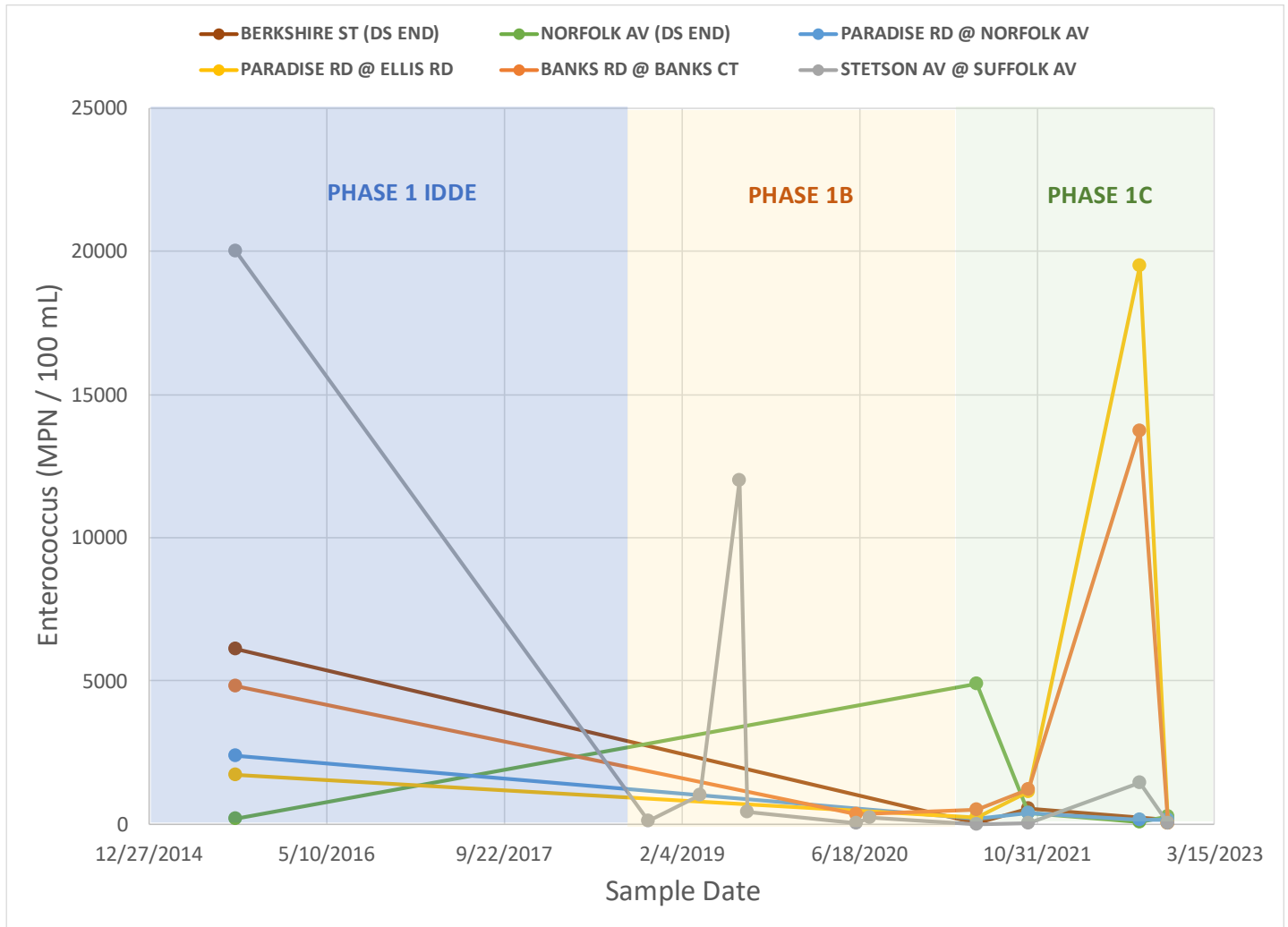


Figure 1 - Phase 1 Enterococcus Results (2015-2023)

As noted above, a complete table of results from the sampling program from 2015 through 2023, as well as a map showing all testing sites is included in **Appendix A**.

Figure 1 illustrates that, while general progress has been made in improving the water quality of drainage in the project areas, there are occasional spikes in the data suggesting intermittent sources of non-stormwater discharges remain in the project areas. It's also important to point out that although the bacteria counts appear lower, the reduced concentrations may still exceed the regulatory requirement at King's beach.

That said, it's worth noting that the most downstream testing location in Phase 1 on Paradise Road at Burrill Street has shown significant improvement in bacteria counts between 2015 and 2023. This site is referred to as P1-14 in **Appendix A** and encompasses all rehabilitated areas within Phase 1 as well as a portion of Phase 2 from Shaw Road. As shown in **Table 3**, the post-construction dry weather results are consistently low (135, 144 MPN / 100 mL) compared to the pre-construction results (2,400 MPN / 100 mL).

Table 3 - Dry Weather Sampling Results for Paradise Road at Burrill Street (from Appendix A)

Location	Phase 1 Sub-Phase	Construction Stage	Dry/Wet	Sample Date	Flow	pH	Ammonia (mg /L)	Surfactants (mg/ L)	Total Chlorine	Temperature (C)	Enterococcus (MPN / 100 mL)
P1-14 Paradise Rd @ Burrill St	Phase 1 IDDE	Pre	dry	8/27/2015	yes	8.4	0	0	0.05	21.02	2,400
	Phase 1C	Pre	dry	5/13/2021	yes	7.73	0-0.25	0.06	0.09	15.7	170
	Phase 1C	During	dry	10/8/2021	yes	7.44	0-0.25	0.06	0.04	18.0	365
	Phase 1C	Post	dry	8/17/2022	yes	7.99	0	0.06	0.9	20.5	135
	Phase 1C	Post	dry	11/3/2022	yes	7.22	0	0.05	0.34	16.3	144

Next Steps for Source Elimination

Looking ahead, there are several efforts that the Town is planning to move forward with to further their source elimination efforts. A schedule of proposed next steps is included at the end of this summary report for reference.

Phase 2 IDDE and Design

While the post-construction monitoring data from Phase 1 supports that the program has improved the water quality within the project area (as shown in **Figure 1**), it is also evident based Phase 1C post-construction water quality results that contamination persists. As such, the Town is committed to pursuing elimination of non-stormwater discharges within the “Phase 2” area which incorporates all catchment area upstream of King’s Beach that was not addressed as part of Phase 1.

During the next reporting period, Kleinfelder intends to work with the Town to develop a scope and a funding approach for IDDE and sewer rehabilitation design within the Phase 2 area.

Fisherman’s Beach

Pursuant to Paragraph 19 of the 2015 Consent Decree with EPA, the Town of Swampscott hired Kleinfelder in 2019-2020 to perform IDDE investigations for sewer improvements in the catchment

area upstream of Fisherman's Beach. Fisherman's Beach has a smaller tributary area and is just to the east of Stacy's Brook catchment outlet to King's Beach. Water quality sampling obtained through the IDDE has demonstrated elevated bacteria levels.

Subsequent to the IDDE sampling program, Kleinfelder completed bid-ready construction documents for comprehensive sewer rehabilitation within the Fisherman's Beach area. Construction in this area has not progressed since the Town has largely prioritized its limited funding to address contamination at King's Beach.

The Town intends to move forward with constructing improvements at Fisherman's Beach in tandem with the Phase 2 program.

Banks Road

The post-construction sampling data obtained through the Phase 1 program has shown that elevated bacteria concentrations persist on Banks Road between Walker Road and Paradise Road. As part of Phase 1B sewer rehabilitation, in 2021, Kleinfelder completed dye testing at several homes on Banks Road to identify suspected illicit connections. Kleinfelder confirmed that one address had tracer dye show up in both the sewer (immediately) and the storm drain (after a period of approximately 1 hour), suggesting an indirect pathway for the house discharge to end up in the drain. Upon further investigation, it was discovered that while the Phase 1B contractor had rehabilitated the lateral with CIPP, there remained a large joint offset between the lateral and the cast iron connection at the basement. Kleinfelder reported this finding to the Phase 1B contractor and since they were still under contract under the warranty period, they performed a trenchless repair of the connection to at no additional cost.

Despite the additional repair made, Kleinfelder continued to observe high bacteria results on Banks Road during Phase 1C post-construction sampling. The drain manhole at the intersection Walker Road and Banks Road, which is two (2) manholes upstream was sampled each time as well and returned much lower bacteria levels. As such, it is evident that there still outstanding contamination issues on Banks Road that should be addressed.

As next steps, Kleinfelder will work with the Town to develop a comprehensive plan to search for remaining non-stormwater discharges entering the stormwater system on Banks Road between Walker Road and Paradise Road. This will likely include the following:

- Another round of dye testing of the homes on Banks Road
- CCTV inspection of the storm drain and storm drain laterals during dry weather
- Follow-up CCTV inspection of the rehabilitated sewer and sewer laterals

Efforts to Accelerate Opening King's Beach

In 2022, the Town of Swampscott initiated a study to identify potential alternative approaches to accelerate progress towards making King's Beach open to the public more frequently. The Town hired Kleinfelder to facilitate the study. The study included an analysis of six (6) alternative approaches to alleviate bacteria loading at King's Beach from two (2) large stormwater outfalls from both Lynn and Swampscott near the vicinity of Eastern Avenue and Lynn Shore Drive.

The Town formed a broad coalition of stakeholders to help steer and inform the direction of the study. It was important that the project identify a solution that had broad support and consensus from the stakeholder team. The stakeholder team included representatives from the following entities:

1. City of Lynn
2. Lynn Water and Sewer Commission (LWSC)
3. Town of Swampscott
4. Massachusetts Department of Environmental Protection (MassDEP)
5. Save the Harbor / Save the Bay
6. Selected consultants

During the project, the US Environmental Protection Agency (US EPA) declined direct involvement in the steering committee. However, US EPA personnel were available to answer specific questions about the alternatives considered with respect to their ability to be permitted.

The stakeholder team also maintained ongoing discussions with the state delegation for the region with representation from Senator Crighton and Representatives Cahill, Armini, and Capano.

During this previous reporting period, the stakeholder team completed its evaluation of the initial six (6) alternatives and arrived at a subset of three (3) alternatives to investigate further. These alternatives included:

1. Disinfection with chemical addition (e.g. chlorination / dechlorination)
2. Disinfection with ultraviolet (UV) light
3. Extend the outfall further from the shoreline

Kleinfelder performed a more detailed alternatives analysis of the remaining (3) alternatives and presented its recommendations to the steering committee on September 15, 2022. Based on stakeholder input, the group favored UV disinfection alternative as this was considered the most cost effective solution that could be implemented in a relatively short timeframe. In addition, the team elected to continue IDDE investigations and source elimination. Finally, the team also recognized the potential for the outfall extension to potentially serve as the ultimate long term solution and agreed to take preliminary steps to refine the cost of this alternative.

Based on these conclusions, Kleinfelder proceeded to draft a final Basis of Design Report (BODR) detailing the results of the study and the next steps for implementation. The draft BODR was submitted on February 10, 2023 for review by the Town of Swampscott.

During this reporting period, the stakeholder team initiated outreach to MassDEP and EPA to obtain support for the recommendations made in the BODR, with a specific objective to obtain assistance with accelerating permitting and to provide support in seeking funds to pay for the project. These discussions revealed some concerns held by MassDEP and EPA about the suitability of UV treatment as an appropriate solution given it is not widely used to treat stormwater. Instead, MassDEP and EPA expressed support for the communities to accelerate source elimination work and to pursue the outfall extension alternative.

With this feedback, the Town intends to develop a scope of work and move forward with pre-design investigations into the outfall extension alternative to further assess the cost and impact of the project. The Town also intends to continue to work with MassDEP and EPA for assistance in accelerating permit timeframes and seek funding for this project. The Town also intends to swiftly move into Phase 2 of its IDDE program.

The Town and the City of Lynn have held discussions about performing additional sampling and/or conducting a pilot test program of UV disinfection, although no specific commitment to this has been made at this time.

Schedule of Next Steps

Based on the information laid out in this report, the following implementation schedule for continuing to pursue source elimination and the outfall extension is shown in **Figure 2**. Design and permitting of the outfall extension is not shown on the schedule, but would be presumed to follow directly after the pre-design investigations and modeling, should those efforts continue to show the outfall extension as a viable approach.

Project	7/1/23 - 12/31/23	1/1/24 - 6/30/24	7/1/24 - 12/31/24	1/1/25 - 6/30/25	7/1/25 - 12/31/25	1/1/26 - 6/30/26
Source Elimination Tasks						
Phase 1C Construction Closeout						
Phase 2 IDDE and Design, Banks Road Follow Up Investigations						
Phase 2A and ABSB Construction						
King's Beach Water Quality Engineering						
Outfall Extension Pre-Design Investigations and Modeling						

Figure 2 - Proposed 3-Year Implementation Schedule

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

There were no reported SSO events during the current reporting period.

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%	8	3%	29	12%	6	3%	0	0%	6	3%
2	Other	372	78	21%	0	0%	78	21%	0	0%	0	0%	0	0%
		TOTAL	99	16%	8	0%	107	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	21,100	38%	0	0%	21,100	38%	650	1%	0	0%	650	1%
2	Other	95,000	3,263	3%	0	0%	3,263	3%	85	0%	0	0%	85	0%
		TOTAL	24,363	16%	0	0%	24,363	16%	735	0%	0	0%	735	0%

d) Listing of Illicit Discharges Verified during Reporting Period

										Total Volume Removed (Gallons)							
										Prior Reporting Periods	271,776						
										This Reporting Period	0						
										Cumulative To Date	271,776						
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	7/8/2023	391 Humphrey St	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	7/8/2023	unknown	unknown	No	n/a	completed	No	None	n/a		
Sewer Defect	5/8/2023	11 Brooks Tr	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	5/8/2023	unknown	unknown	No	n/a	completed	No	None	n/a		
Sewer Defect	4/20/2023	16 Elm Pl	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	4/20/2023	unknown	unknown	No	n/a	completed	No	None	n/a		
Sewer Defect	4/17/2023	8 Pine St	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	4/17/2023	unknown	unknown	No	n/a	completed	No	None	n/a		
Sewer Defect	4/4/2023	24 Walnut Rd	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	4/4/2023	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	3/24/2023	37 Atlantic Ave - rear	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	3/24/2023	unknown	unknown	No	n/a	completed	No	None	n/a
Sewer Defect	3/24/2023	35 Atlantic Ave - rear	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	3/24/2023	unknown	unknown	No	n/a	completed	No	None	n/a
Sewer Defect	3/12/2023	8 Pine St	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	3/12/2023	unknown	unknown	No	n/a	completed	No	None	n/a
Sewer Defect	2/27/2023	21 Elm Pl	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	2/27/2023	unknown	unknown	No	n/a	completed	No	None	n/a
Sewer Defect	2/6/2023	21 Elm Pl	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	2/6/2023	unknown	unknown	No	n/a	completed	No	None	n/a
Sewer Defect	2/6/2023	62 Thomas Rd	Residential	Sewer Service Repair	not estimated	Private contractor performed repair	2/6/2023	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 is included in **Appendix B**.

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

Town staff members reported no inspections or enforcement actions taken during this reporting period.

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	3/1/2023	18
Annual GIS Mapping Update	2/1/2023	26

h) Copies of Sampling Results Received during Reporting Period

Sampling was completed as part of the Stacy’s Brook Phase 1C construction project during this reporting period. The lab results for bacteria are included in **Appendix C**. Tabulated results for Phase 1C sampling, as well as the results for the entire Phase 1 program are included in **Appendix A**.

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

During the period August 1, 2023 through January 31, 2024 the following activities are anticipated:

- Complete the contract closeout of the Stacy’s Brook Phase 1C sewer rehabilitation project.
- Initiate the next steps with the Town of Swampscott in investigating and modeling a stormwater outfall extension at King’s Beach.
- Begin IDDE and design within the Phase 2 area of Stacy’s Brook.

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

Phase 1 Water Quality Sampling Results Table and Map

STACY'S BROOK WATER QUALITY SAMPLING RESULTS
POST PHASE 1 CONSTRUCTION
SEPTEMBER 1, 2023

Location	Phase 1 Sub-Phase	Construction Stage	Dry/Wet	Sample Date	Flow	Odor	Floatables	pH	Ammonia (mg/L)	Surfactants (mg/L)	Total Chlorine	Temperature (C)	Conductivity (µmhos/cm)	Enterococcus (MPN / 100 mL)	Comments	
P1-1 Devens Rd	Phase 1 IDDE	Pre	dry	8/27/2015	yes	no	no	8.82	0	0	0	20.04		1,400	Location is upstream in system, was not sampled subsequently as part of Phase 1B or Phase 1C construction	
	Phase 1 IDDE	Pre	wet	9/11/2015	yes	no	no	8.21	0	0	0	19.62	0.22	33		
P1-2 Essex St @ Delisio Dr	Phase 1B	During	dry	11/1/2018	no	no	no							900	Bacteria only; Standing Water in Invert (not sandbagged)	
	Phase 1B	During	dry	3/27/2019	no	no	no							130	Bacteria only; Standing Water in Invert (not sandbagged)	
	Phase 1B	During	dry	7/16/2019	yes	no	no							14,000	Bacteria only; Moderate Flow From Upstream (not sandbagged)	
	Phase 1B	During	dry	8/7/2019	yes	no	no							5,000	Bacteria only; Low Flow From Upstream (sandbagged)	
	Phase 1B	Post	dry	6/9/2020	no	no	no								DRY (sandbagged)	
	Phase 1B	Post	wet	9/30/2020	yes	no	no	7.23	0	0.5	0.12	0.12	22.37	1	45,636	
	Phase 1B	Post	wet	10/13/2020	yes	no	no	7.94	0	0.25	0.08	0.08	14.76	1	6,722	
P1-3 Barnstable St @ Nantucket Ave	Phase 1B	Pre	dry	8/28/2015	no	no	no								DRY	
	Phase 1B	During	dry	11/1/2018	yes	no	no							530	Bacteria only; Significant Flow From Upstream (not sandbagged)	
	Phase 1B	During	dry	3/27/2019	yes	no	no							3,100	Bacteria only; Significant Flow From Upstream (not sandbagged)	
	Phase 1B	During	dry	8/7/2019	no	no	no								DRY No Flow in System (sandbagged)	
	Phase 1B	Post	dry	6/9/2020	no	no	no								mostly DRY, a trickle from the inlet but not enough to sample (sandbagged)	
	Phase 1B	Post	wet	9/30/2020	no	no	no								DRY - wet weather event ended, no flow present	
	Phase 1B	Post	wet	10/13/2020	yes	no	no	8.13	0	< 0.25	0.07	0.07	14.87	1	4,022	
P1-4 Stetson Ave @ Franklin Ave	Phase 1 IDDE	Pre	dry	8/28/2015		yes	no	8.03	3	3	0	21.85		510		
	Phase 1 IDDE	Pre	wet	9/11/2015	yes	no	no	7.51	0.25	0	0.06	20.13	0.117	77,000		
	Phase 1B	Post	dry	6/9/2020	no	no	no								DRY	
	Phase 1B	Post	dry	7/16/2020	yes	no	no	7.46	0	1	0.65	0.65	23.89	101	1,500	
	Phase 1B	Post	wet	9/30/2020	yes	no	no	7.72	0.25	0.25	0.03	0.03	22.92	47	65,108	
	Phase 1B	Post	wet	10/13/2020	yes	no	no	8.41	0		0.04	0.04	14.64	31	10,242	Surfactants test skipped at this location
P1-5 Stetson Ave @ Suffolk Ave	Phase 1 IDDE	Pre	dry	8/28/2015	yes	YES	NO	7.63	0.25	0.75	0.02	21.32		20,000		
	Phase 1 IDDE	Pre	wet	9/11/2015	yes	no	no	7.07	1	0.25	0.05	20.06	0.866	210,000		
	Phase 1B	During	dry	11/1/2018	yes	no	no							100	Bacteria only; Significant Flow From Upstream (diluted from groundwater)	
	Phase 1B	During	dry	3/27/2019	yes	no	no							1,000	Bacteria only; Significant Flow From Upstream (not sandbagged)	
	Phase 1B	During	dry	7/16/2019	yes	no	no							12,000	Bacteria only; Moderate Flow From Upstream (not sandbagged)	
	Phase 1B	During	dry	8/7/2019	yes	no	no							420	Bacteria only; Moderate Flow From Upstream (sandbagged)	
	Phase 1B	Post	dry	6/9/2020	yes	no	no	7.86	0	0.25		18.21	1106	16		
	Phase 1B	Post	dry	7/16/2020	yes	no	no	7.54	0	< 0.25	0.41	0.41	24.04	878	210	
	Phase 1B	Post	wet	9/30/2020	yes	no	no	7.97	0	0.25	0.03	0.03	22.42	5	58,186	
	Phase 1B	Post	wet	10/13/2020	yes	no	no	9.09	0.25	0.25	0.12	0.12	14.45	27	13,936	
	Phase 1C	Pre	dry	5/13/2021	yes	no	no	7.71	0	0.15	0.04	0.04	14.4	1017	5	
	Phase 1C	During	dry	10/8/2021	yes	no	no	6.86	0-0.25	0.10	0.02	0.02	17.0	18.7	25	
	Phase 1C	Post	dry	8/17/2022	yes	no	no	6.94	0.25	0.07	0	0	22.7	1121	1,449	
	Phase 1C	Post	wet	10/5/2022	yes	no	no	7.48	0.25	0.23	0.31	0.31	14.2	62.0	4,500	
Phase 1C	Post	dry	11/3/2022	yes	no	no	6.74*	0.25	0.25	0.04	0.04	14.2*	984*	18	*Readings taken at 9:45-10:00 after sample had been sitting	

STACY'S BROOK WATER QUALITY SAMPLING RESULTS
POST PHASE 1 CONSTRUCTION
SEPTEMBER 1, 2023

Location	Phase 1 Sub-Phase	Construction Stage	Dry/Wet	Sample Date	Flow	Odor	Floatables	pH	Ammonia (mg/L)	Surfactants (mg/L)	Total Chlorine	Temperature (C)	Conductivity (µmhos/cm)	Enterococcus (MPN / 100 mL)	Comments
	Phase 1C	Post	wet	8/8/2023	yes	no	no	7.48	0.25	0.07	0.01	21.5	712	724	
P1-6 Banks Rd @ Farragut Rd	Phase 1 IDDE	Pre	dry	8/27/2015	yes	no	no	7.3	0	0.25	0.06	18.34		1	
	Phase 1B	Pre	dry	8/27/2015	yes	no	no	7.3	0	0.25		18.34		1	
	Phase 1B	Post	dry	6/9/2020	yes	no	no	7.28	0.25	<0.25		17.49	337	410	
	Phase 1B	Post	dry	7/16/2020	yes	no	no	7.12	3	0.25	0.17	20.2	551	32,000	
	Phase 1B	Post	wet	9/30/2020	yes	no	no	6.87	3	0.5	0.07	21.68	1	42,832	
	Phase 1B	Post	wet	10/13/2020	yes	no	no	7.6	0.25		0.05	15.13	47	43,744	Surfactants test skipped at this location
P1-7 Banks Rd @ Banks Ct	Phase 1 IDDE	Pre	dry	8/27/2015	yes	NO	NO	8.23	0	0.25	0.05	21.07		4,800	
	Phase 1 IDDE	Pre	wet	9/11/2015	yes	no	no	7.27	0	0.25	0.07	19.2	0.402	23,000	
	Phase 1B	Pre	dry	8/27/2015	yes	no	no	8.23	0	0.25		21.07		4,800	
	Phase 1B	Post	dry	6/9/2020	yes	no	no	7.26	0.25	0.25		18.75	415	350	
	Phase 1B	Post	dry	7/16/2020	yes	yes	no	6.91	6	0.5	0.33	21.15	698	90,000	
	Phase 1B	Post	wet	9/30/2020	yes	no	no	6.65	6	0.25	0.28	22.77	1	82,116	
	Phase 1B	Post	wet	10/13/2020	yes	no	no	7.4	0.25	0.25	0.13	15.1	28	11,110	
	Phase 1C	Pre	dry	5/13/2021	yes	no	no	7.26	0.5-1	0.12	0.09	15.2	565	490	
	Phase 1C	During	dry	10/8/2021	yes	no	no	7.2	0.25	0.13	0.05	16.0	417.3	1,203	
	Phase 1C	Post	dry	8/17/2022	yes	no	no	7.19*	6	0.28	0.2	21.3*	79.0*	13,735	*Probe may not have been fully submerged
	Phase 1C	Post	wet	10/5/2022	yes	no	no	7.40	0	0.23	0.12	14.6	168.7	6,015	
	Phase 1C	Post	dry	11/3/2022	yes	no	no	7.02*	0.5	0.11	0.12	12.3*	385.2*	10	*Readings taken at 9:45-10:00 after sample had been sitting
P1-8 Paradise Rd @ Farragut Rd	Phase 1C	Pre	dry	5/13/2021	yes	no	no	7.35	0-0.25	0.11	0.12	15.9	992	140	
	Phase 1C	During	dry	10/8/2021	yes	no	no	7.12	0	0.09	0.06	17.7	752	192	
	Phase 1C	Post	dry	8/17/2022	yes	no	no	7.08	0	0.26	0.1	19.1	1260	738	
	Phase 1C	Post	wet	10/5/2022	yes	no	no	7.11	0	0.31	0.04	15.8	962	1,986	
	Phase 1C	Post	dry	11/3/2022	yes	no	no	6.79	0.25	0.08	0.08	17.1	1247	1,203	
	Phase 1C	Post	wet	8/8/2023	yes	no	no	7.11	0	0.06	0.01	21.2	908		Lab error for bacteria results
P1-9 Walker Rd @ Banks Rd	Phase 1C	Pre	dry	5/13/2021	yes	no	no	7.54	0.5-1	0.10	0	15.0	424.5	28	
	Phase 1C	During	dry	10/8/2021	yes	no	no	7.26	0-0.25	0.08	0.09	15.8	490	266	
	Phase 1C	Post	dry	8/17/2022	yes	no	no	7.76*	0	0.21	0.3	22.7*	1400*	54	*Probe may not have been fully submerged
	Phase 1C	Post	wet	10/5/2022	yes	no	no	7.41	0	0.21	0.17	14.2	111.8	17,853	
	Phase 1C	Post	dry	11/3/2022	yes	no	no	7.15*	0.25	0.25	0.46	12.2*	299.9*	172	*Readings taken at 9:45-10:00 after sample had been sitting
	Phase 1C	Post	wet	8/8/2023	yes	no	no	7.14	0	0.07	0.02	20.4	724	204	
P1-10 Paradise Rd @ Ellis Rd	Phase 1 IDDE	Pre	dry	8/27/2015	yes	no	no	7.98	0	0	0	20.83		1,700	
	Phase 1 IDDE	Pre	wet	9/11/2015	yes	no	no	7.15	0	0	0.04	18.56	0.823	7,900	
	Phase 1C	Pre	dry	5/13/2021	yes	no	no	7.56	0	0.10	0.01	15.8	637	220	
	Phase 1C	During	dry	10/8/2021	yes	no	no	7.3	0-0.25	0.08	0.09	18.3	432.4	1,120	
	Phase 1C	Post	dry	8/17/2022	yes	no	no	7.66	0	0.16	0.2	21.7	1494	19,510	

STACY'S BROOK WATER QUALITY SAMPLING RESULTS
POST PHASE 1 CONSTRUCTION
SEPTEMBER 1, 2023

Location	Phase 1 Sub-Phase	Construction Stage	Dry/Wet	Sample Date	Flow	Odor	Floatables	pH	Ammonia (mg /L)	Surfactants (mg/L)	Total Chlorine	Temperature (C)	Conductivity (µmhos/cm)	Enterococcus (MPN / 100 mL)	Comments	
	Phase 1C	Post	wet	10/5/2022	yes	no	no	7.38	0.25	0.31	0.07	15.7	831	2,420		
	Phase 1C	Post	dry	11/3/2022	yes	no	no	7.05	0	0.08	0.05	16.7	1274	11		
	Phase 1C	Post	wet	8/8/2023	yes	no	no	7.27	0.25	0.06	0.03	21.7	817		Lab error for bacteria results	
P1-11 Paradise Rd @ Andrew Rd	Phase 1 IDDE	Pre	dry	8/27/2015	yes	no	no	8.03	0	0	0	21.45		1,100		
	Phase 1 IDDE	Pre	wet	9/11/2015	yes	no	no	7.3	0	0.25	0.06	18.8	0.82	5,200		
P1-12 Berkshire Rd @ Paradise Rd	Phase 1 IDDE	Pre	dry	8/27/2015	yes	no	no	7.9	0	0.25	0	21.9		6,100		
	Phase 1 IDDE	Pre	wet	9/11/2015	yes	no	no	7.69	0	0	0.04	19.25	0.065	30,000		
	Phase 1C	Pre	dry	5/13/2021	yes	no	no	7.22	0.25	0.28	0.10	15.6	2638	23		
	Phase 1C	During	dry	10/8/2021	yes	no	no	7.05	0-0.25	0.24	0.49	20.5	1247	548		
	Phase 1C	Post	dry	8/17/2022	no	no	no	-	-	-	-	-	-	-	-	DRY - Unable to be sampled
	Phase 1C	Post	wet	10/5/2022	yes	no	no	7.48	0	0.20	0.08	15.5	64.9	9,331		
	Phase 1C	Post	dry	11/3/2022	yes	no	no	6.54	0	0.25	0.20	15.0	1529	162		
	Phase 1C	Post	wet	8/8/2023	yes	no	no	6.85	0	0.24	0.04	22.4	1590	1,480		
P1-13 Norfolk Ave @ Paradise Rd	Phase 1 IDDE	Pre	dry	8/27/2015	yes	no	no	7.94	0	0	0.04	18.9		200		
	Phase 1 IDDE	Pre	wet	9/11/2015	yes	no	no	7.24	0	0.25	0.02	17.79	0.909	610		
	Phase 1C	Pre	dry	5/13/2021	yes	no	no	7.63	0	0.1	0.04	16.3	1020	4,900		
	Phase 1C	During	dry	10/8/2021	yes	no	no	7.25	0-0.25	0.09	0.00	18.2	923	365		
	Phase 1C	Post	dry	8/17/2022	yes	no	no	7.42	0	0.07	0.00	18.6	1065	73		
	Phase 1C	Post	wet	10/5/2022	yes	no	no	7.19	0	0.2	0.20	14.4	165.5	5,806		
	Phase 1C	Post	dry	11/3/2022	yes	no	no	6.88	0.5	0.17	0.03	14.3	1060	261		
	Phase 1C	Post	wet	8/8/2023	yes	no	no	7.07	0.25	0.10	0.03	18.6	1001	1,297		
P1-14 Paradise Rd @ Burill St	Phase 1 IDDE	Pre	dry	8/27/2015	yes	no	no	8.4	0	0	0.05	21.02		2,400		
	Phase 1 IDDE	Pre	wet	9/11/2015	yes	no	no	7.43	0	0	0.02	18.73	0.573	1,200		
	Phase 1C	Pre	dry	5/13/2021	yes	no	no	7.73	0-0.25	0.06	0.09	15.7	785	170		
	Phase 1C	During	dry	10/8/2021	yes	no	no	7.44	0-0.25	0.06	0.04	18.0	700	365		
	Phase 1C	Post	dry	8/17/2022	yes	no	no	7.99	0	0.06	0.9	20.5	628	135		
	Phase 1C	Post	wet	10/5/2022	yes	no	no	7.61	0.25	0.23	0.30	16.1	452.8	1,120		
	Phase 1C	Post	dry	11/3/2022	yes	no	no	7.22	0	0.05	0.34	16.3	627	144		
	Phase 1C	Post	wet	8/8/2023	yes	no	no	7.41	0.25	0.05	0.07*	21.9	744		Added chlorine packet and read at 14:00; Lab error for bacteria results	
P2-1 Redington St	Phase 2 IDDE	Pre	dry	8/27/2015	yes	no	no	8.29	0	0	0	21.2		0		
	Phase 2 IDDE	Pre	wet	P1-15	yes	no	no	7.74	0	0	0.03	19.46	0.204	3,500		
P2-2 Mapledale Rd	Phase 2 IDDE	Pre	dry	8/27/2015	yes	no	no	8.25	0	0	0.1	20.42		580		
	Phase 2 IDDE	Pre	wet	9/11/2015	yes	no	no	7.57	0	0	0.03	19.35	0.207	2,200		
P2-3 Sheridan Rd.	Phase 2 IDDE	Pre	dry	8/27/2015	yes	no	no	8.3	0	0	0.05	20.07		75		
	Phase 2 IDDE	Pre	wet	9/11/2015	yes	no	no	7.48	0	0	0.05	18.98	0.332	2,400		
	Phase 2 IDDE	Pre	dry	8/27/2015	yes	no	no	8.05	0	0	0.02	21.12		32		
	Phase 2 IDDE	Pre	wet	9/11/2015	yes	no	no	7.51	0	0	0.05	18.83	0.299	1,700		

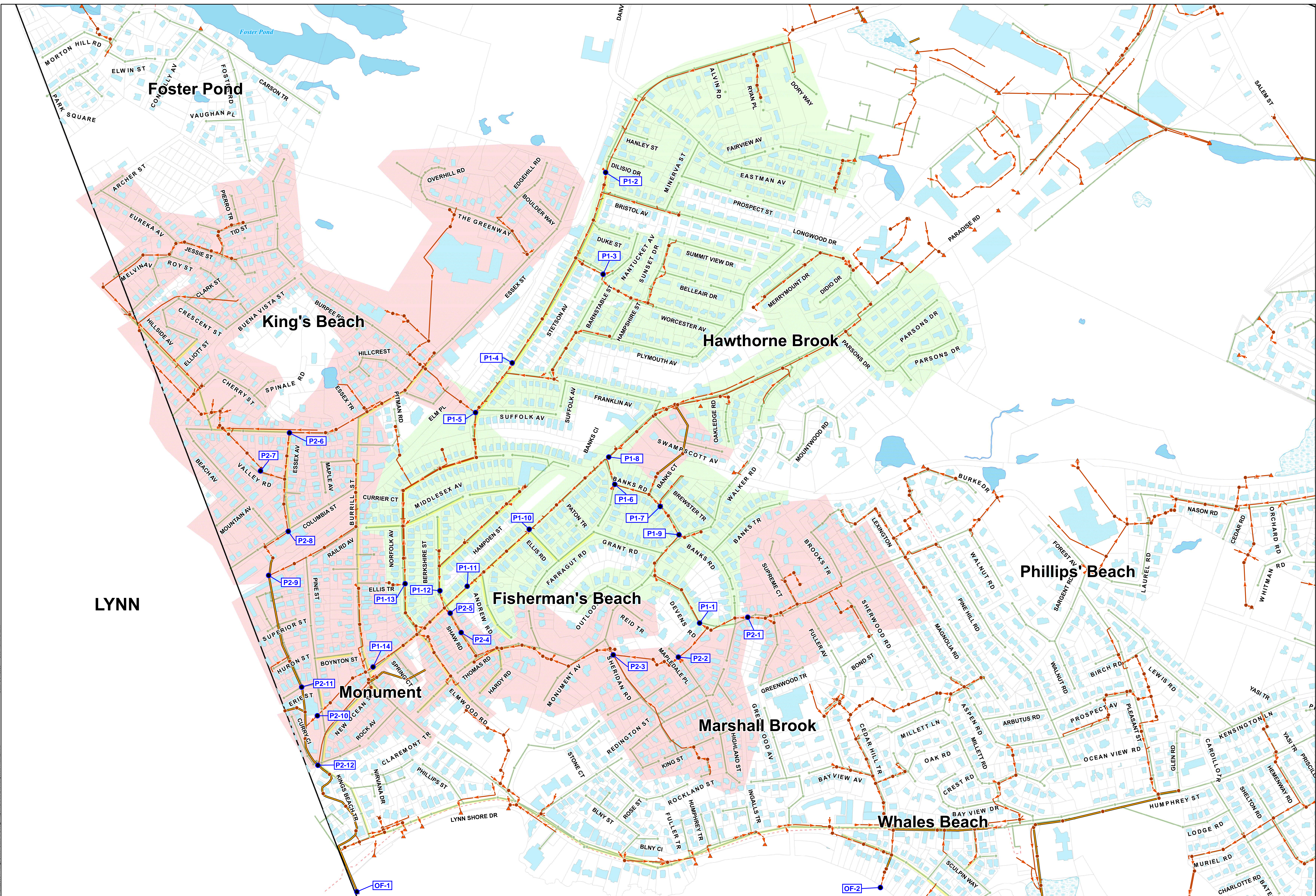
STACY'S BROOK WATER QUALITY SAMPLING RESULTS
POST PHASE 1 CONSTRUCTION
SEPTEMBER 1, 2023

Location	Phase 1 Sub-Phase	Construction Stage	Dry/Wet	Sample Date	Flow	Odor	Floatables	pH	Ammonia (mg/L)	Surfactants (mg/L)	Total Chlorine	Temperature (C)	Conductivity (µmhos/cm)	Enterococcus (MPN / 100 mL)	Comments
P2-4 Shaw Rd @ Paradise Rd	Phase 2 IDDE	Pre	dry	5/13/2021	yes	no	no	7.74	0.25	0 (Lo reading)	0.44	15.6	418.4	2	Water service running through MH, stagnant water in sump, no flow in MH
	Phase 2 IDDE	Pre	dry	10/8/2021	yes	no	no	7.29	0-0.25	0.04	0.12	18.2	438	31	
	Phase 2 IDDE	Pre	dry	8/17/2022	no	no	no	7.85	0.25	0.11	0	21.7	487	41	Stagnant water in sump, no flow in MH
	Phase 2 IDDE	Pre	wet	10/5/2022	yes	no	no	7.57	0	0.24	0.05	16.1	302.6	83	
	Phase 2 IDDE	Pre	dry	11/3/2022	yes	no	no	6.94	1.0	0.47	0.10	15.6	386.8	1,272	
	Phase 2 IDDE	Pre	wet	8/8/2023	yes	no	no	7.42	0.25	0.05	0.04	20.0	517.2	10,426	
P2-5 Shaw Rd @ Paradise Rd, closer to Paradise than 07	Phase 2 IDDE	Pre	dry	8/17/2022	yes	no	no	7.09	0	0.04	0	20.9	306	73	
	Phase 2 IDDE	Pre	wet	10/5/2022	yes	no	no	7.52	0	0.17	0.05	15.9	298.2	172	
	Phase 2 IDDE	Pre	dry	11/3/2022	yes	no	no	6.87	1.0	0.48	0.09	15.5	385.6	1,406	
	Phase 2 IDDE	Pre	wet	8/8/2023	yes	no	no	7.44	0	0.05	0.04	20.7	517.6	2,420	
P2-6 Essex Rd	Phase 2 IDDE	Pre	dry	8/28/2015	yes	no	no	8.12	0	0	0	20.23		330	
	Phase 2 IDDE	Pre	wet	9/11/2015	yes	no	no	7.48	0	0	0.09	18.9	0	980	
P2-7 Cross Country 1	Phase 2 IDDE	Pre	dry	8/28/2015	yes	no	no	7.85	0	0	0.06	19.25		1,700	
	Phase 2 IDDE	Pre	wet	9/11/2015	yes	no	no	7.18	0	0	0.01	18.86	0.53	4,600	
P2-8 Columbia Rd	Phase 2 IDDE	Pre	dry	5/13/2021	yes	no	no	7.42	0.5	0.11	0.05	15.6	943	350	
	Phase 2 IDDE	Pre	dry	10/8/2021	yes	no	no	7.17	0-0.25	0.07	0.02	18.6	654	866	
	Phase 2 IDDE	Pre	dry	8/17/2022	yes	no	no	6.78	0.25	0.12	0.3	20.4	988	4,568	
	Phase 2 IDDE	Pre	wet	10/5/2022	yes	no	no	7.15	0.25	0.32	0.03	15.9	790	1,733	
	Phase 2 IDDE	Pre	dry	11/3/2022	yes	no	no	6.63	0.25	0.12	0.01	15.8	898	31	
	Phase 2 IDDE	Pre	wet	8/8/2023	yes	no	no	7.38	0	0.05	0.01*	24.8	803		Added chlorine packet and read at 14:00; Lab error for bacteria results
P2-9 Cross Country 4	Phase 2 IDDE	Pre	dry	8/28/2015	yes	no	no	7.99	0	0.25	0	17.52		190	
	Phase 2 IDDE	Pre	wet	9/11/2015	yes	no	no	7.32	0	0	0.02	19.33	1.27	2,400	
P2-10 Cross Country 2	Phase 2 IDDE	Pre	dry	8/27/2015	yes	no	no	7.99	0	0	0.02	21.03		1,400	
	Phase 2 IDDE	Pre	wet	9/11/2015	yes	no	no	7.44	0	0	0.03	19.48	0.751	1,700	
P2-11 Erie St	Phase 2 IDDE	Pre	dry	8/27/2015	yes	no	no	7.81	0	0	0.01	20.75		1,500	
	Phase 2 IDDE	Pre	wet	9/11/2015	yes	no	no	7.37	0	0	0.02	19.34	1.16	7,400	
P2-12 Cross Country 3	Phase 2 IDDE	Pre	dry	8/27/2015	yes	no	no	7.95	0	0	0.03	20.79		1,500	
	Phase 2 IDDE	Pre	wet	9/11/2015	yes	no	no	7.09	0	0.5	0.03	19.67	3.68	2,900	
OF-1 Swampscott Kings Beach Outfall	Phase 1 IDDE	Pre	wet	6/21/2017	yes	no	no							146	
	Phase 1 IDDE	Pre	dry	6/24/2017	yes	no	no							226	
	Phase 1 IDDE	Pre	wet	6/25/2017	yes	no	no							617	
	Phase 1 IDDE	Pre	wet	6/26/2017	yes	no	no							1,420	
	Phase 1 IDDE	Pre	dry	6/27/2017	yes	no	no							1,420	
	Phase 1 IDDE	Pre	wet	6/28/2017	yes	no	no							1,050	
	Phase 1 IDDE	Pre	wet	7/8/2017	yes	no	no							441	
	Phase 1 IDDE	Pre	dry	7/10/2017	yes	no	no							189	
	Phase 1 IDDE	Pre	wet	7/11/2017	yes	no	no							24,200	

Bacteria results only - obtained in 2017 King's Beach study

STACY'S BROOK WATER QUALITY SAMPLING RESULTS
POST PHASE 1 CONSTRUCTION
SEPTEMBER 1, 2023

Location	Phase 1 Sub-Phase	Construction Stage	Dry/Wet	Sample Date	Flow	Odor	Floatables	pH	Ammonia (mg/L)	Surfactants (mg/L)	Total Chlorine	Temperature (C)	Conductivity (µmhos/cm)	Enterococcus (MPN / 100 mL)	Comments	
	Phase 1 IDDE	Pre	wet	7/12/2017	yes	no	no							5,100		
	Phase 1 IDDE	Pre	dry	7/24/2017	yes	no	no							189		
	Phase 1 IDDE	Pre	wet	7/25/2017	yes	no	no							5,480		
	Phase 1 IDDE	Pre	wet	7/26/2017	yes	no	no							1,270		
	Phase 1 IDDE	Pre	dry	7/29/2017	yes	no	no							3,260		
	Phase 1 IDDE	Pre	dry	7/31/2017	yes	no	no							480		
	Phase 1B	Post	dry	6/9/2020	yes	no	no	7.92	0	0.25			17.96	2085	560	
	Phase 1B	Post	dry	7/16/2020	yes	no	no	7.15	0	0.25	0.14		20.83	3861	960	
	Phase 1B	Post	wet	9/30/2020	yes	no	no	7.48	0.5	1.5	0.01		21.41	17	23,748	
	Phase 1B	Post	wet	10/13/2020	yes	no	no	7.07	1	0.5	0.03		14.83	554	16,252	
	Phase 1C	Pre	dry	5/13/2021	yes	no	no	8.11	0	0.15	0.11		13.0	634	130	
	Phase 1C	During	dry	10/8/2021	yes	no	no	7.69	0	0.11	0.01		16.0	497.7	1,120	
	Phase 1C	Post	dry	8/17/2022	yes	no	no	7.27*	0	1.12	0		20.2*	27.1*	852	*Probe may not have been fully submerged
	Phase 1C	Post	wet	10/5/2022	yes	no	no	7.05	0.25	0.28	0.24		14.9	874	7,279	
	Phase 1C	Post	dry	11/3/2022	yes	no	no	7.07	0.25	0.32	0.15		16.2	3903	31	
Phase 1C	Post	wet	8/8/2023	yes	no	no	7.49	0.25	0.09	0.04		20.1	1077	1,323	Beach closed due to bacteria	
OF-2 Fishermans Beach Outfall	Phase 1C	Post	dry	8/17/2022	yes	no	no	6.88*	6.0+	0.61	0.4	21.0*	129.6*	81,641	*Probe may not have been fully submerged	
	Phase 1C	Post	wet	10/5/2022	yes	no	no	7.25	3.0	1.17	0.12	16.7	2082	173,289		
	Phase 1C	Post	dry	11/3/2022	yes	no	no	6.76	6.0	0.69	0.28	19.1	2691	120,333		
	Phase 1C	Post	wet	8/8/2023	yes	no	no	7.33	0.25	0.14	0.02	20.8	1475		Lab error for bacteria results	



LEGEND

- Drain Manhole
- Flow Direction
- ▲ Drain Outfall
- Drain Gravity Pipe
- Drain Culvert
- Sewer MH
- Sewer Force Main
- Sewer Gravity Pipe
- Underdrain Pipes

Project Scope

- Phase 2
- Phase 1
- Parcels
- Buildings
- Town Boundary

● Pond; River; Stream

Wetlands

KLEINFELDER
Bright People. Right Solutions.

SCALE: 1" = 200'

PROJECT NO. S110203

DRAWN BY: JR

CHECKED BY:

FILE NAME:

STACEY'S BROOK DRAINAGE AREA

Town of Swampscott, MA

PHASE 1 SAMPLING LOCATIONS MAP

Date: 03/17/2023 User Name: jrsell

Document Path: G:\clients\Swampscott\MA02020604 - Kings Beach Basin of Drain\Report\GIS\Map\Swampscott_Phase2.mxd

Appendix B
Illicit Discharge Map



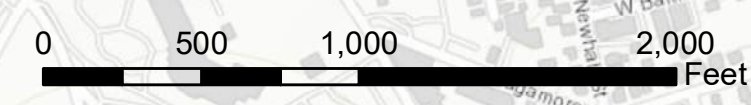
LEGEND

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



The information contained on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Therefore, neither the representation of accuracy, completeness, timeliness, or any other information, that does not constitute an independent professional engineering or architectural review of the information contained on the graphic representation or the liability of the party using or relying on the information.



PROJECT NO.	20192126
DRAWN:	9/1/2023
DRAWN BY:	JVR
CHECKED BY:	DTP
FILE NAME:	Compliance Reporting

APPENDIX B	
ILLICIT DISCHARGE & SSO LOCATIONS	
REPORTING PERIOD: 2/1/23 TO 7/31/23	
EPA Consent Decree Swampscott, Massachusetts	

Appendix C

Phase 1C Bacteria Lab Results



ANALYTICAL REPORT

Lab Number:	L2345888
Client:	Kleinfelder One Beacon Street Suite 8100 Boston, MA 02108
ATTN:	Elyse Noll
Phone:	(617) 498-4681
Project Name:	PHASE 1C
Project Number:	Not Specified
Report Date:	08/23/23

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-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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



Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2345888-01	IC-P4-01	WATER	SWAMPSCOTT, MA	08/09/23 08:22	08/09/23
L2345888-02	IC-P4-03	WATER	SWAMPSCOTT, MA	08/09/23 07:30	08/09/23
L2345888-03	IC-P4-04	WATER	SWAMPSCOTT, MA	08/09/23 07:52	08/09/23
L2345888-04	IC-P4-06	WATER	SWAMPSCOTT, MA	08/09/23 09:15	08/09/23
L2345888-05	IC-P4-07	WATER	SWAMPSCOTT, MA	08/09/23 09:40	08/09/23
L2345888-06	IC-P4-7B	WATER	SWAMPSCOTT, MA	08/09/23 09:57	08/09/23
L2345888-07	IC-P4-08	WATER	SWAMPSCOTT, MA	08/09/23 08:50	08/09/23
L2345888-08	IC-P4-10	WATER	SWAMPSCOTT, MA	08/09/23 10:25	08/09/23

Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

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:

 Cristin Walker

Title: Technical Director/Representative

Date: 08/23/23

INORGANICS & MISCELLANEOUS

Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

SAMPLE RESULTS

Lab ID: L2345888-01
 Client ID: IC-P4-01
 Sample Location: SWAMPSCOTT, MA

Date Collected: 08/09/23 08:22
 Date Received: 08/09/23
 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	724		MPN/100ml	100	NA	100	-	08/09/23 14:16	102,ENTEROLER	PLB



Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

SAMPLE RESULTS

Lab ID: L2345888-02
Client ID: IC-P4-03
Sample Location: SWAMPSCOTT, MA

Date Collected: 08/09/23 07:30
Date Received: 08/09/23
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	648.82		MPN/100ml	1	NA	1	-	08/09/23 14:16	102,ENTEROLER	PLB



Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

SAMPLE RESULTS

Lab ID: L2345888-03
Client ID: IC-P4-04
Sample Location: SWAMPSCOTT, MA

Date Collected: 08/09/23 07:52
Date Received: 08/09/23
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	203.54		MPN/100ml	1	NA	1	-	08/09/23 14:16	102,ENTEROLER	PLB



Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

SAMPLE RESULTS

Lab ID: L2345888-04
Client ID: IC-P4-06
Sample Location: SWAMPSCOTT, MA

Date Collected: 08/09/23 09:15
Date Received: 08/09/23
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	1480		MPN/100ml	100	NA	100	-	08/09/23 14:16	102,ENTEROLER	PLB



Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

SAMPLE RESULTS

Lab ID: L2345888-05
Client ID: IC-P4-07
Sample Location: SWAMPSCOTT, MA

Date Collected: 08/09/23 09:40
Date Received: 08/09/23
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	10426		MPN/100ml	100	NA	100	-	08/09/23 14:16	102,ENTEROLER	PLB



Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

SAMPLE RESULTS

Lab ID: L2345888-06
 Client ID: IC-P4-7B
 Sample Location: SWAMPSCOTT, MA

Date Collected: 08/09/23 09:57
 Date Received: 08/09/23
 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	2419.57		MPN/100ml	1	NA	1	-	08/09/23 14:16	102,ENTEROLER	PLB



Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

SAMPLE RESULTS

Lab ID: L2345888-07
 Client ID: IC-P4-08
 Sample Location: SWAMPSCOTT, MA

Date Collected: 08/09/23 08:50
 Date Received: 08/09/23
 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	1297		MPN/100ml	100	NA	100	-	08/09/23 14:16	102,ENTEROLER	PLB



Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

SAMPLE RESULTS

Lab ID: L2345888-08
 Client ID: IC-P4-10
 Sample Location: SWAMPSCOTT, MA

Date Collected: 08/09/23 10:25
 Date Received: 08/09/23
 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	1323		MPN/100ml	100	NA	100	-	08/09/23 14:16	102,ENTEROLER	PLB



Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

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): 01-08 Batch: WG1813921-1										
ENTEROCOCCUS	<1		MPN/100ml	1	NA	1	-	08/09/23 14:16	102,ENTEROLER T	PLB

Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

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(*)
L2345888-01A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-01B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-02A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-02B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-03A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-03B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-04A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-04B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-05A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-05B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-06A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-06B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-07A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-07B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-08A	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)
L2345888-08B	Bacteria Cup Na2S2O3 preserved	A	NA		4.2	Y	Absent		ENTRO-QT(.33)

Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

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: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

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.

Chlordane: 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.)

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'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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.

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.

Report Format: Data Usability Report



Project Name: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

Data Qualifiers

- 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 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: PHASE 1C
Project Number: Not Specified

Lab Number: L2345888
Report Date: 08/23/23

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

EPA 625.1: alpha-Terpineol

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

EPA 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 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, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

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, **LACHAT 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).

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 _____

Date Rec'd in Lab: 8/9/23

ALPHA Job #: L2345888

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Project Information

Project Name: Phase 1C
Project Location: Swampscott MA

Report Information - Data Deliverables

ADEX EMAIL

Billing Information

Same as Client info PO #:

Client Information

Client: Eluse Noll Klainfelder
Address: 1 Beacon St, Suite 8100
Boston, MA 02108
Phone: 570-975-9111
Email: ENoll@Klainfelder.com

Project #:
Project Manager:
ALPHA Quote #:

Regulatory Requirements & Project Information Requirements

Yes No MA MCP Analytical Methods Yes No CT RCP Analytical Methods
 Yes No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
 Yes No GW1 Standards (Info Required for Metals & EPH with Targets)
 Yes No NPDES RGP
 Other State /Fed Program _____ Criteria _____

Turn-Around Time

Standard RUSH (only confirmed if pre-approved!)
Date Due:

ANALYSIS		SAMPLE INFO	
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH	Filtration	<input type="checkbox"/> Field
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8	Preservation	<input type="checkbox"/> Lab to do
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only		
TPH: <input type="checkbox"/> PCB <input type="checkbox"/> PEST	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint		
Entire Sect.			
TOTAL # BOTTLES			

Additional Project Information:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
45888-01	IC-P4-01	8/9	8:22		EN
-02	IC-P4-03	8/9	7:30		↓
-03	IC-P4-04	8/9	7:52		
-04	IC-P4-06	8/9	9:15		
-05	IC-P4-07	8/9	9:40		
-06	IC-P4-7B	8/9	9:57		
-07	IC-P4-08	8/9	8:50		
-08	IC-P4-10	8/9	10:25		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO₃
D= H₂SO₄
E= NaOH
F= MeOH
G= NaHSO₄
H= Na₂S₂O₃
I= Ascorbic Acid
J= NH₄Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Steph Mason</i>	8/9 10:50	<i>Steph Mason AAL</i>	8/9 10:50
<i>Steph Mason</i>	8/9 12:25	<i>[Signature]</i>	8/9/23 1:25

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.
FORM NO: 01-01 (rev. 12-Mar-2012)