PARTNER
Engineering and Science, Inc.®

DRINKING WATER SAMPLING REPORT

Holy Spirit School

970 Suburban Avenue
Union, NJ 07083

June 6, 2022
Partner Project No. 21-327189.1

Prepared for

Union County Educational Services Commission
45 Cardinal Drive
Westfield, New Jersey 07090

PARTNER
Engineering and Science, Inc.

June 3, 2022

Mr. Eric Larson
Union County Educational Services Commission
45 Cardinal Drive
Westfield, NJ 07090

Subject: Drinking Water Sampling Report
Union County Educational Services Commission
Holy Spirit School
Union, NJ 07083
Partner Project 21-327918.1

Dear Mr. Larson:

Partner Engineering and Science, Inc. (Partner) is pleased to provide the results of the *Drinking Water Sampling* conducted at the abovementioned address (the "subject property"). This sampling event was performed in general conformance with the scope and limitations as detailed in our fee proposal. This inspection included a site reconnaissance as well as sampling and analysis. An assessment was made, conclusions stated, and recommendations outlined, as required.

We appreciate the opportunity to provide environmental services to the Union County Educational Services Commission. If you have any questions concerning this report, or if we can assist you in any other matter, please contact me at (908) 497-8904 or via e-mail at dbracey@partneresi.com.

Sincerely,

Dan Bracey, CSP, CHMM
Senior Project Manager
Industrial Hygiene & Health and Safety Services

TABLE OF CONTENTS

APPENDICES

PARTNER

Executive Summary

Partner Engineering and Science, Inc. (Partner) collected drinking water samples for Union County Educational Services Board of Education at Holy Spirit School on April 23, 2022. Samples were collected according to the "New Jersey Department of Education N.J.A.C. 6A:26" requirements for testing of lead in New Jersey Schools and the "USEPA 3Ts for Reducing Lead in Drinking Water in Schools" recommendations, as well as the Safe Drinking Water Act of 1974.

The first sample at each fixture was a "first draw" which was collected directly from the fixture without letting the water run or flush. The second sample was collected after letting the water run (flush) for thirty seconds. This sample evaluates the lead in water from the water purveyor and the pipes outside the building. The samples collected were analyzed by Alpha Analytical Labs located in Mahwah, New Jersey for analysis of lead content using USEPA Method 200.8 for lead in drinking water. The action level for lead has been set at 15 parts per billion (ppb). According to the USEPA, given present technology and resources, this level is the lowest level to which water systems can reasonably be required to control this contaminant should it be present in drinking water.

Sample analysis indicated that measured lead concentrations did exceed the USEPA Action Level of 15 ppb for lead at Holy Spirit School. Specifically, water from the following outlets had exceedances:

- HS-S-04, initial draw, 75.30 ppb
- HS-WF-08, initial draw, 209.0 ppb
- HS-WF-08-F, flush draw, 68.36 ppb
- HS-WF-11, initial draw, 16.96 ppb
- HS-S-12, initial draw, 24.57 ppb
- HS-WF-13, initial draw, 17.35 ppb
- HS-S-18, initial draw, 188.9 ppb
- HS-S-22, initial draw, 63.89 ppb

Based on the above referenced sample analytical results, Partner recommends the following actions:

- For sink outlets exceeding the USEPA Action Level, these outlets should be labelled as "Do Not Drink – Safe for Handwashing Only".
- A flushing program can be implemented at the point of entry outlet, with either manual or automatic flushing.
- Remove drinking water outlets of concern from service.
- Conduct an investigation into the drinking water outlet of concern and replace any potential lead-leaching fixtures or equipment, such as fixtures and associated piping, that may be contributing to dissolved lead in drinking water.

1.0 INTRODUCTION

1.1 Property Description

Address(s):	Holy Spirit School– 970 Suburban Avenue
Nature of Use:	School
Walk-Through Inspector:	Angelica Rosaperez
Walk-Through Date:	March 29, 2022
Sampling Conducted By:	Angelica Rosaperez
Sampling Date:	April 23, 2022

1.2 Purpose and Scope

The purpose of this drinking water sampling event was to sample and analyze drinking water for a determination of lead content for comparison with the USEPA Action Level as defined by the National Primary Drinking Water Regulations (NPDWR - 40 CFR Chapter I, Part 141), in addition to the "New Jersey Department of Education N.J.A.C. 6A:26" requirements for testing of lead in New Jersey Schools and the "USEPA 3Ts for Reducing Lead in Drinking Water in Schools". The NPDW set a Maximum Contaminant Level Goal (MCLG) for each listed contaminant, which identifies a level of that contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals. The MCLG for lead has been set at zero (0) ppb. Since lead contamination generally occurs from corrosion of onsite lead pipes, or lead-based solder on fittings and fixtures, it cannot be directly detected or removed by the municipal water system. Instead, the USEPA is requiring municipal water systems to control the corrosiveness of their water if the level of lead at the tap exceeds an Action Level.

The action level for lead has been set at 15 parts per billion (ppb). According to the NPDWR Lead and Copper Rule (LCR), given present technology and resources, this level is the lowest level to which water systems can reasonably be required to control this contaminant should it be present in drinking water.

2.0 METHODOLOGY

Select drinking water samples were collected according to the "New Jersey Department of Education N.J.A.C. 6A:26" requirements for testing of lead in New Jersey Schools and the "USEPA 3Ts for Reducing Lead in Drinking Water in Schools" recommendations, as well as the LCR Monitoring requirements for lead in tap water (40 CFR Part 141, Subpart I, § 141.86(b)). Sampling consisted of collecting a one-liter (L) first draw sample from a drinking water outlet that had been stagnant for at least eight (8) hours in a bottle with an appropriate preservative. Partner made a reasonable effort to determine whether the stagnation preconditions were able to be met prior to conducting sampling. A second-draw sample was collected minutes after the first-draw, in order to determine whether lead was being provided via the service line. Second-draw samples were only analyzed if the first-draw sample exceeded the USEPA Action Level of 15 ppb. Sample bottles were provided by Alpha Analytical Labs located in Mahwah, New Jersey with an appropriate preservative lead in drinking water sampling. After collection, sample bottles were labeled with a unique identifier and transferred under chain of custody to by Alpha Analytical Labs located in Mahwah, New Jersey for analysis by USEPA Method 200.8. The laboratory results and chain of custody are contained in **Appendix A.**

3.0 BACKGROUND

Based upon available documentation, the Holy Spirit School was recently added to Union County Communication Services facilities in 2021. No prior lead in drinking water sampling reports were available for review.

4.0 ANALYTICAL RESULTS

During the course of this site visit, Partner collected water samples at twenty-four (24) locations. Partner did not attempt to disassemble mechanical equipment, open plumbing pipe chases, or assess materials within wall voids.

Partner attempted to collect samples from the following outlets; however, based upon the condition of the outlet and recommendations from the site guide, a sample could not be collected at the following locations:

- HS-S-15

A total of forty-eight (48) drinking water samples were collected from Holy Spirit School on April 23, 2022. A total of thirty-one (31) samples were analyzed. The results are listed in Table 1 below.

Table 1
Analytical Results Summary
Holy Spirit School
April 23, 2022

Sample Name	Location	Results (ppb)
HS-POE	Kitchen	2.66
HS-IM-01	Kitchen	ND
HS-CM-02	Kitchen	14.61
HS-WC-03	Faculty Rm 111	ND
HS-S-04	**Ladies BR**	**75.30**
HS-S-04-F	Ladies BR	3.55
HS-S-05	Ladies BR	2.28
HS-S-06	Room 112	2.77
HS-S-07	Room 109	4.92
HS-WF-08	**Room 109**	**209.0**
HS-WF-08-F	**Room 109**	**68.36**
HS-S-09	Nurse's BR	10.39
HS-S-10	Room 104	4.92
HS-WF-11	**Room 104**	**16.96**
HS-WF-11-F	Room 104	5.53
HS-S-12	**Room 101**	**24.57**
HS-S-12-F	Room 101	1.70
HS-WF-13	**Room 101**	**17.35**
HS-WF-13-F	Room 101	4.41

Table 1 Analytical Results Summary Holy Spirit School April 23, 2022		
Sample Name	**Location**	**Results (ppb)**
HS-S-14	Men's BR	3.93
HS-S-16	Men's BR	2.87
HS-S-17	Ladies BR	3.15
HS-S-18	**Ladies BR**	**188.9**
HS-S-18-F	Ladies BR	3.16
HS-S-19	Ladies BR	12.45
HS-S-20	Room 209	3.22
HS-S-21	Room 204	1.24
HS-S-22	**Men's BR**	**63.89**
HS-S-22-F	Men's BR	2.46
HS-S-23	Men's BR	5.16
HS-S-24	Men's BR	10.12

NOTES

ND= Not detected. Lead levels not detected at the reporting limit (0.3430 ppb)

1 ppb = 1 ug/L

***BOLD** = Exceedances above USEPA Action Level 15 ppb*

PARTNER

5.0 CONCLUSION

Sample analysis indicated that measured lead concentrations did exceed the USEPA Action Level of 15 ppb for lead at Holy Spirit School. Specifically, water from the following outlets had exceedances:

- HS-S-04, initial draw, 75.30 ppb
- HS-WF-08, initial draw, 209.0 ppb
- HS-WF-08-F, flush draw, 68.36 ppb
- HS-WF-11, initial draw, 16.96 ppb
- HS-S-12, initial draw, 24.57 ppb
- HS-WF-13, initial draw, 17.35 ppb
- HS-S-18, initial draw, 188.9 ppb
- HS-S-22, initial draw, 63.89 ppb

6.0 RECOMMENDATIONS

Based on the above referenced sample analytical results, Partner recommends the following actions:

- For sink outlets exceeding the USEPA Action Level, these outlets should be labelled as "Do Not Drink – Safe for Handwashing Only".
- A flushing program can be implemented at the point of entry outlet, with either manual or automatic flushing.
- Remove drinking water outlets of concern from service.
- Conduct an investigation into the drinking water outlet of concern and replace any potential lead-leaching fixtures or equipment, such as fixtures and associated piping, that may be contributing to dissolved lead in drinking water.

Additional control technologies may be utilized to reduce lead content in drinking water, including, but not limited to onsite water treatment and filtration. All response actions should be conducted in according with industry, local, state, and federal guidelines and/or requirements

In the event the remedial action involves replacing the fixture/associated piping or installing a new fixture, Union County Educational Services Commission should conduct sampling for lead in drinking water to ensure lead levels are below the action level prior to opening the fixture for use. Additionally, sampling of all drinking water outlets must be conducted every third school year beginning with the 2021-2022 school year.

Flushing involves opening suspect taps every morning before the facility opens and letting the water run to remove water that has been standing in the interior pipes and/or the outlets. All flushing should be recorded in a log submitted daily to the head of maintenance/facilities. The faucet should be opened, and the water should run for 30 seconds to one minute, or until cold.

A filtration device, or point-of-use (POU) device can be relatively inexpensive ($65 to $250) or expensive (ranging from $250 to $500), their effectiveness varies, and they may be vulnerable to vandalism. They also require a maintenance program for regular upkeep to ensure effectiveness. Cartridge filter units need to be replaced periodically to remain effective. NSF International, an independent, third-party certification organization, has a testing program to evaluate the performance of POU devices for lead removal (NSF Standard 53). Before purchasing any device, ask the manufacturer for proof of NSF approval and the Performance Data Sheet, or check by visiting the NSF Web site at:
http://www.nsf.org/business/search_listings/index/asp

Consult NSF Standard 61 (Sections 4, 8 and 9) before buying any replacement products. This standard will provide you with information on plumbing products that are designed to minimize lead leaching. Before you purchase any brass plumbing products, request information regarding compliance with this standard.

7.0 LIMITATIONS

Partner subcontracted with Alpha Analytical who performed the lead analysis. No warranties expressed or implied, are made by Partner or its subcontractor Alpha Analytical or their employees as to the use of any information, apparatus, product, or process disclosed in this report. Every reasonable effort has been made to assure correctness.

State-of-the-art practices have been employed to perform this inspection. No demolition or product research was performed in attempts to reveal material compositions. The services consist of professional opinions and recommendations made in accordance with generally accepted engineering principles/practices. These services are designed to provide an analytical tool to assist the client. Partner and its subcontractors and their employees/representatives bear no responsibility for the actual condition of the structure or safety of this site pertaining to lead and/or lead contamination regardless of the actions taken by the inspection team or the client.

8.0 SIGNATURES OF PROFESSIONALS

Partner performed lead-in-drinking water sampling at the Union County Educational Services Board of Education properties, Union County, New Jersey in general conformance with the scope and limitations of the protocol stated earlier in this report. Exceptions to or deletions from this protocol are discussed earlier in this report.

Prepared By:

Partner Engineering and Science, Inc.

Angelica Rosaperez
Assistant Project Manager

Reviewed by:

Daniel Bracey, CSP, CHMM
Senior Project Manager

APPENDIX A: LABORATORY ANALYSIS AND CHAIN OF CUSTODY

ANALYTICAL REPORT

Lab Number:	L2221433
Client:	Partner Engineering & Science, Inc. 611 Industrial Way West Eatontown, NJ 07724
ATTN:	Angelica Rosaperez
Phone:	(732) 380-1200
Project Name:	HOLY SPIRIT SCHOOL LIDW
Project Number:	21-327187
Report Date:	05/19/22

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: HOLY SPIRIT SCHOOL LIDW
Project Number: 21-327187

Lab Number: L2221433
Report Date: 05/19/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2221433-01	HS-POE	DW	Not Specified	04/23/22 08:13	04/25/22
L2221433-02	HS-POE-F	DW	Not Specified	04/23/22 08:14	04/25/22
L2221433-03	HS-IM-01	DW	Not Specified	04/23/22 08:15	04/25/22
L2221433-04	HS-IM-01-F	DW	Not Specified	04/23/22 08:16	04/25/22
L2221433-05	HS-CM-02	DW	Not Specified	04/23/22 08:17	04/25/22
L2221433-06	HS-CM-02-F	DW	Not Specified	04/23/22 08:18	04/25/22
L2221433-07	HS-WC-03	DW	Not Specified	04/23/22 08:21	04/25/22
L2221433-08	HS-WC-03-F	DW	Not Specified	04/23/22 08:22	04/25/22
L2221433-09	HS-S-04	DW	Not Specified	04/23/22 08:24	04/25/22
L2221433-10	HS-S-04-F	DW	Not Specified	04/23/22 08:25	04/25/22
L2221433-11	HS-S-05	DW	Not Specified	04/23/22 08:26	04/25/22
L2221433-12	HS-S-05-F	DW	Not Specified	04/23/22 08:27	04/25/22
L2221433-13	HS-S-06	DW	Not Specified	04/23/22 08:28	04/25/22
L2221433-14	HS-S-06-F	DW	Not Specified	04/23/22 08:29	04/25/22
L2221433-15	HS-S-07	DW	Not Specified	04/23/22 08:30	04/25/22
L2221433-16	HS-S-07-F	DW	Not Specified	04/23/22 08:31	04/25/22
L2221433-17	HS-WF-08	DW	Not Specified	04/23/22 08:32	04/25/22
L2221433-18	HS-WF-08-F	DW	Not Specified	04/23/22 08:33	04/25/22
L2221433-19	HS-S-09	DW	Not Specified	04/23/22 08:35	04/25/22
L2221433-20	HS-S-09-F	DW	Not Specified	04/23/22 08:36	04/25/22
L2221433-21	HS-S-10	DW	Not Specified	04/23/22 08:38	04/25/22
L2221433-22	HS-S-10-F	DW	Not Specified	04/23/22 08:39	04/25/22
L2221433-23	HS-WF-11	DW	Not Specified	04/23/22 08:40	04/25/22
L2221433-24	HS-WF-11-F	DW	Not Specified	04/23/22 08:41	04/25/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2221433-25	HS-S-12	DW	Not Specified	04/23/22 08:42	04/25/22
L2221433-26	HS-S-12-F	DW	Not Specified	04/23/22 08:43	04/25/22
L2221433-27	HS-WF-13	DW	Not Specified	04/23/22 08:44	04/25/22
L2221433-28	HS-WF-13-F	DW	Not Specified	04/23/22 08:45	04/25/22
L2221433-29	HS-S-14	DW	Not Specified	04/23/22 08:47	04/25/22
L2221433-30	HS-S-14-F	DW	Not Specified	04/23/22 08:48	04/25/22
L2221433-31	HS-S-16	DW	Not Specified	04/23/22 08:51	04/25/22
L2221433-32	HS-S-16-F	DW	Not Specified	04/23/22 08:52	04/25/22
L2221433-33	HS-S-17	DW	Not Specified	04/23/22 08:56	04/25/22
L2221433-34	HS-S-17-F	DW	Not Specified	04/23/22 08:57	04/25/22
L2221433-35	HS-S-18	DW	Not Specified	04/23/22 08:58	04/25/22
L2221433-36	HS-S-18-F	DW	Not Specified	04/23/22 08:59	04/25/22
L2221433-37	HS-S-19	DW	Not Specified	04/23/22 09:00	04/25/22
L2221433-38	HS-S-19-F	DW	Not Specified	04/23/22 09:01	04/25/22
L2221433-39	HS-S-20	DW	Not Specified	04/23/22 09:03	04/25/22
L2221433-40	HS-S-20-F	DW	Not Specified	04/23/22 09:04	04/25/22
L2221433-41	HS-S-21	DW	Not Specified	04/23/22 09:05	04/25/22
L2221433-42	HS-S-21-F	DW	Not Specified	04/23/22 09:06	04/25/22
L2221433-43	HS-S-22	DW	Not Specified	04/23/22 09:09	04/25/22
L2221433-44	HS-S-22-F	DW	Not Specified	04/23/22 09:10	04/25/22
L2221433-45	HS-S-23	DW	Not Specified	04/23/22 09:11	04/25/22
L2221433-46	HS-S-23-F	DW	Not Specified	04/23/22 09:12	04/25/22
L2221433-47	HS-S-24	DW	Not Specified	04/23/22 09:13	04/25/22
L2221433-48	HS-S-24-F	DW	Not Specified	04/23/22 09:14	04/25/22

Project Name: HOLY SPIRIT SCHOOL LIDW
Project Number: 21-327187

Lab Number: L2221433
Report Date: 05/19/22

NJ DEP Data of Known Quality Protocols
Conformance/Non-Conformance
Summary Questionnaire

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP Data of Known Quality performance standards?	YES
1a	Were the method specified handling, preservation, and holding time requirements met?	YES
1b	EPH Method: Was the EPH Method conducted without significant modifications (see Section 11.3 of respective DKQ methods)?	N/A
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	YES
3	Were all samples received at an appropriate temperature (4 ± 2° C)?	YES
4	Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved?	YES
5a	Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt?	NO
5b	Were these reporting limits met?	N/A
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP?	YES
7	Are project-specific matrix spikes and/or laboratory duplicates included in this data set?	NO

Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1a or #1b is "No", the data package does not meet the requirements for "Data of Known Quality".

Project Name:	HOLY SPIRIT SCHOOL LIDW	**Lab Number:**	L2221433
Project Number:	21-327187	**Report Date:**	05/19/22

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:	HOLY SPIRIT SCHOOL LIDW	**Lab Number:**	L2221433
Project Number:	21-327187	**Report Date:**	05/19/22

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

DKQP Related Narratives

Report Submission

In reference to question 5a:

Reporting limits were not specified.

Sample Receipt

L2221433-30: The Client ID was specified by the client.

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: 05/19/22

METALS

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-01
Client ID: HS-POE
Sample Location: Not Specified
Date Collected: 04/23/22 08:13
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2.663		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 16:21	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-03
Client ID: HS-IM-01
Sample Location: Not Specified
Date Collected: 04/23/22 08:15
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 16:27	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-05
Client ID: HS-CM-02
Sample Location: Not Specified
Date Collected: 04/23/22 08:17
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	14.61		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 16:42	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-07
Client ID: HS-WC-03
Sample Location: Not Specified
Date Collected: 04/23/22 08:21
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	ND		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 16:47	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-09
Client ID: HS-S-04
Sample Location: Not Specified
Date Collected: 04/23/22 08:24
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	75.30		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 16:52	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-10
Client ID: HS-S-04-F
Sample Location: Not Specified
Date Collected: 04/23/22 08:25
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3.550		ug/l	1.000	0.3430	1	05/18/22 10:16	05/18/22 23:15	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-11
Client ID: HS-S-05
Sample Location: Not Specified
Date Collected: 04/23/22 08:26
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2.276		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 16:58	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-13
Client ID: HS-S-06
Sample Location: Not Specified
Date Collected: 04/23/22 08:28
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2.767		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 17:03	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-15
Client ID: HS-S-07
Sample Location: Not Specified
Date Collected: 04/23/22 08:30
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	4.919		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 17:08	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-17
Client ID: HS-WF-08
Sample Location: Not Specified
Date Collected: 04/23/22 08:32
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	209.0		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 17:13	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-18
Client ID: HS-WF-08-F
Sample Location: Not Specified
Date Collected: 04/23/22 08:33
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	68.36		ug/l	1.000	0.3430	1	05/18/22 10:16	05/18/22 23:20	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-19
Client ID: HS-S-09
Sample Location: Not Specified
Date Collected: 04/23/22 08:35
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	10.39		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 17:18	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-21
Client ID: HS-S-10
Sample Location: Not Specified
Date Collected: 04/23/22 08:38
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	4.917		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 11:05	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-23
Client ID: HS-WF-11
Sample Location: Not Specified
Date Collected: 04/23/22 08:40
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	16.96		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 11:10	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-24
Client ID: HS-WF-11-F
Sample Location: Not Specified
Date Collected: 04/23/22 08:41
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	5.525		ug/l	1.000	0.3430	1	05/18/22 10:16	05/18/22 23:26	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-25
Client ID: HS-S-12
Sample Location: Not Specified
Date Collected: 04/23/22 08:42
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	24.57		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 11:15	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-26
Client ID: HS-S-12-F
Sample Location: Not Specified
Date Collected: 04/23/22 08:43
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1.695		ug/l	1.000	0.3430	1	05/18/22 10:16	05/18/22 23:31	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-27
Client ID: HS-WF-13
Sample Location: Not Specified
Date Collected: 04/23/22 08:44
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	17.35		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 11:20	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-28
Client ID: HS-WF-13-F
Sample Location: Not Specified
Date Collected: 04/23/22 08:45
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	4.407		ug/l	1.000	0.3430	1	05/18/22 10:16	05/18/22 23:36	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-29
Client ID: HS-S-14
Sample Location: Not Specified
Date Collected: 04/23/22 08:47
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3.928		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 11:25	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-31
Client ID: HS-S-16
Sample Location: Not Specified
Date Collected: 04/23/22 08:51
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2.866		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 11:31	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-33
Client ID: HS-S-17
Sample Location: Not Specified
Date Collected: 04/23/22 08:56
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3.152		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 11:36	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-35
Client ID: HS-S-18
Sample Location: Not Specified
Date Collected: 04/23/22 08:58
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	188.9		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 11:41	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-36
Client ID: HS-S-18-F
Sample Location: Not Specified
Date Collected: 04/23/22 08:59
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3.163		ug/l	1.000	0.3430	1	05/18/22 10:16	05/18/22 23:41	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-37
Client ID: HS-S-19
Sample Location: Not Specified
Date Collected: 04/23/22 09:00
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	12.45		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 11:46	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-39
Client ID: HS-S-20
Sample Location: Not Specified
Date Collected: 04/23/22 09:03
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3.222		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 12:27	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-41
Client ID: HS-S-21
Sample Location: Not Specified
Date Collected: 04/23/22 09:05
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1.241		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 12:32	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-43
Client ID: HS-S-22
Sample Location: Not Specified
Date Collected: 04/23/22 09:09
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	63.89		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 12:38	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-44
Client ID: HS-S-22-F
Sample Location: Not Specified
Date Collected: 04/23/22 09:10
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	2.455		ug/l	1.000	0.3430	1	05/18/22 10:16	05/18/22 23:46	EPA 3005A	3,200.8	SV

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-45
Client ID: HS-S-23
Sample Location: Not Specified
Date Collected: 04/23/22 09:11
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	5.164		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 12:43	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW
Lab Number: L2221433
Project Number: 21-327187
Report Date: 05/19/22

SAMPLE RESULTS

Lab ID: L2221433-47
Client ID: HS-S-24
Sample Location: Not Specified
Date Collected: 04/23/22 09:13
Date Received: 04/25/22
Field Prep: Not Specified

Sample Depth:
Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	10.12		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 12:48	EPA 3005A	3,200.8	CD

Project Name: HOLY SPIRIT SCHOOL LIDW **Lab Number:** L2221433

Project Number: 21-327187 **Report Date:** 05/19/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03,05,07,09,11,13,15,17,19 Batch: WG1636240-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	05/10/22 20:15	05/11/22 14:35	3,200.8	SV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 21,23,25,27,29,31,33,35,37,39,41,43,45,47 Batch: WG1636242-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	05/09/22 19:25	05/10/22 09:52	3,200.8	CD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 10,18,24,26,28,36,44 Batch: WG1639062-1										
Lead, Total	ND		ug/l	1.000	0.3430	1	05/18/22 10:16	05/18/22 21:07	3,200.8	SV

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HOLY SPIRIT SCHOOL LIDW

Project Number: 21-327187

Lab Number: L2221433

Report Date: 05/19/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19 Batch: WG1636240-2								
Lead, Total	102		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 21,23,25,27,29,31,33,35,37,39,41,43,45,47 Batch: WG1636242-2								
Lead, Total	99		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 10,18,24,26,28,36,44 Batch: WG1639062-2								
Lead, Total	99		-		85-115	-		

Project Name: HOLY SPIRIT SCHOOL LIDW
Project Number: 21-327187

Lab Number: L2221433
Report Date: 05/19/22

Sample Receipt and Container Information

Were project specific reporting limits specified? NO

Cooler Information

Cooler	Custody Seal
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2221433-01A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-02A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-03A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-04A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-05A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-06A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-07A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-08A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-09A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-10A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-11A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-12A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-13A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-14A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-15A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-16A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-17A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-18A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-19A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-20A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-21A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-22A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-23A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)

*Values in parentheses indicate holding time in days

Project Name: HOLY SPIRIT SCHOOL LIDW
Project Number: 21-327187

Lab Number: L2221433
Report Date: 05/19/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2221433-24A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-25A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-26A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-27A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-28A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-29A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-30A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-31A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-32A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-33A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-34A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-35A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-36A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-37A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-38A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-39A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-40A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-41A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-42A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-43A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-44A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-45A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-46A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)
L2221433-47A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		PB-2008T-PPB(180)
L2221433-48A	Plastic 250ml HNO3 preserved	B	<2	<2	5.8	Y	Absent		HOLD-METAL-TOTAL(180)

*Values in parentheses indicate holding time in days

Project Name:	HOLY SPIRIT SCHOOL LIDW	**Lab Number:**	L2221433
Project Number:	21-327187	**Report Date:**	05/19/22

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: DU Report with 'J' Qualifiers

Project Name:	HOLY SPIRIT SCHOOL LIDW	**Lab Number:**	L2221433
Project Number:	21-327187	**Report Date:**	05/19/22

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. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. 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 method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HOLY SPIRIT SCHOOL LIDW	**Lab Number:**	L2221433
Project Number:	21-327187	**Report Date:**	05/19/22

Data Qualifiers

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.)

Report Format: DU Report with 'J' Qualifiers

REFERENCES

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

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, SM4500Cl-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, **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), **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.

NEW JERSEY CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 5

Date Rec'd in Lab: 4/25/22

ALPHA Job #: L2221433

Client Information
Client: Partner Engineering & Science
Address: 611 Industrial Way W Suite A Eatontown, NJ
Phone: 732-403-5869
Fax:
Email: arosaperez@partneresi.com

Project Information
Project Name: Holy Spirit School LIDW
Project Location:
Project #: 21-32787
(Use Project name as Project #)
Project Manager: Angelica Rosaperez
ALPHAQuote #:

Turn-Around Time
Standard [X] Due Date:
Rush (only if pre approved) [ ] # of Days:

Deliverables
[ ] NJ Full / Reduced
[ ] EQuIS (1 File) [ ] EQuIS (4 File)
[ ] Other

Regulatory Requirement
[ ] SRS Residential/Non Residential
[ ] SRS Impact to Groundwater
[ ] NJ Ground Water Quality Standards
[ ] NJ IGW SPLP Leachate Criteria
[ ] Other

Billing Information
[X] Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes [ ]
Petroleum Product:

These samples have been previously analyzed by Alpha [ ]

For EPH, selection is REQUIRED:
[ ] Category 1
[ ] Category 2

For VOC, selection is REQUIRED:
[ ] 1,4-Dioxane
[ ] 8011

Other project specific requirements/comments:
Analyze flush sample if initial is above 15ppb

Please specify Metals or TAL.
Lead

ANALYSIS
Lead

Sample Filtration
[ ] Done
[ ] Lab to do
Preservation
[ ] Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Sample Specific Comments
21433-01	HS-POE	4/23/22	8:13	DW	AK	X	
-02	POE-F		8:14				
-03	IM-01		8:15				
-04	IM-01-F		8:16				
-05	CM-02		8:17				
-06	CM-02-F		8:18				
-07	WC-03		8:21				
-08	WC-03-F		8:22				
-09	S-04		8:24				
-10	S-04-F		8:25				

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

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

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	P							
Preservative	C							

Relinquished By:	Date/Time	Received By:	Date/Time
AK	4/25 900		4/25/22 1645
	4/25/22 14:30		
	4/25/22	Melissa Wood	4/25/22 2300

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

NEW JERSEY CHAIN OF CUSTODY

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 5

Date Rec'd in Lab: 4/25/22

ALPHA Job #: L2221433

Project Information
Project Name:
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager:
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☐ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

Client Information
Client:
Address:
Phone:
Fax:
Email:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS
Lead

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Sample Specific Comments
21433-11	HS-S-05	4/23/22	8:26	DW	AR	X	
-12	S-05-F		8:27				
-13	S-06		8:28				
-14	S-06-F		8:29				
-15	S-07		8:30				
-16	S-07-F		8:31				
-17	WF-08		8:32				
-18	WF-08-F		8:33				
-19	S-09		8:35				
-20	S-09-F		8:36				

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

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

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
AR	4/23 9:00		
	4/24/22 14:30		
	4/25/22		4/25/22 2300

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

NEW JERSEY CHAIN OF CUSTODY

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Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 5

Date Rec'd in Lab: 4/25/22

ALPHA Job #: L2221433

Project Information
Project Name:
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager:
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☐ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

Client Information
Client:
Address:
Phone:
Fax:
Email:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS
Lead

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Sample Specific Comments
21433-21	HS-S-10	4/27/22	8:38	DW	AR	x	
-22	S-10-F		8:39				
-23	WF-11		8:40				
-24	WF-11-F		8:41				
-25	S-12		8:42				
-26	S-12-F		8:43				
-27	WF-13		8:44				
-28	WF-13-F		8:45				
-29	S-14		8:47				
-30	S-14		8:48				

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

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

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type									
Preservative									

Relinquished By:	Date/Time	Received By:	Date/Time
AR	4/25 900		4/25/22 9:2
	4/25/22 14:35		4/25/22 16:4
	4/25/22	Melissa Wood	4/25/22 2300

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-14 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW JERSEY CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 4 of 5

Date Rec'd in Lab: 4/25/22

ALPHA Job #: L2221433

Client Information
Client:
Address:
Phone:
Fax:
Email:

Project Information
Project Name:
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager:
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ NJ Full / Reduced
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ SRS Residential/Non Residential
☐ SRS Impact to Groundwater
☐ NJ Ground Water Quality Standards
☐ NJ IGW SPLP Leachate Criteria
☐ Other

Billing Information
☐ Same as Client Info
PO #

Site Information
Is this site impacted by Petroleum? Yes ☐
Petroleum Product:

These samples have been previously analyzed by Alpha ☐

For EPH, selection is REQUIRED:
☐ Category 1
☐ Category 2

For VOC, selection is REQUIRED:
☐ 1,4-Dioxane
☐ 8011

Other project specific requirements/comments:
Please specify Metals or TAL.

ANALYSIS
Lead

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Sample Specific Comments
	HS - [illegible]	4/23/22	8:19	DW	AK	x	
	[illegible]		[illegible]				
21433-31	S-16		8:51				
-32	S-16-F		8:52				
-33	S-17		8:56				
-34	S-17-F		8:57				
-35	S-18		8:58				
-36	S-18-F		8:59				
-37	S-19		9:00				
-38	S-19-F		9:01				

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
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Container Code
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A = Amber Glass
V = Vial
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C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type													
Preservative													

Relinquished By:	Date/Time	Received By:	Date/Time
AK	4/25 9:00	[illegible]	4/25 9:00
[illegible]	4/25/22 14:38	[illegible]	4/25/22 16:28
[illegible]	[illegible]	Melissa Wood	4/25/22 2300

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Form No: 01-14 HC (rev. 30-Sept-2013)

NEW JERSEY CHAIN OF CUSTODY

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TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 5 of 5

Date Rec'd in Lab: 4/25/22

ALPHA Job #: L2221433

Client Information
Client:
Address:
Phone:
Fax:
Email:

Project Information
Project Name:
Project Location:
Project #
(Use Project name as Project #)
Project Manager:
ALPHAQuote #:

Turn-Around Time
Standard
Rush (only if pre approved)
Due Date:
# of Days:

Deliverables
- NJ Full / Reduced
- EQuIS (1 File)
- EQuIS (4 File)
- Other

Billing Information
- Same as Client Info

PO #

Regulatory Requirement
- SRS Residential/Non Residential
- SRS Impact to Groundwater
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- NJ IGW SPLP Leachate Criteria
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Site Information
Is this site impacted by Petroleum? Yes
Petroleum Product:

These samples have been previously analyzed by Alpha

For EPH, selection is REQUIRED:
- Category 1
- Category 2

For VOC, selection is REQUIRED:
- 1,4-Dioxane
- 8011

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Lead

Sample Filtration
- Done
- Lab to do

Preservation
- Lab to do

(Please Specify below)

Total Bottle

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Lead	Total Bottle	Sample Specific Comments
21433-39	HS-S-20	4/23/22	9:03	DW	AK	X		
-40	S-20-F		9:04					
-41	S-21		9:05					
-42	S-21-F		9:06					
-43	S-22		9:09					
-44	S-22-F		9:10					
-45	S-23		9:11					
-46	S-23-F		9:12					
-47	S-24		9:13					
-48	S-24-F		9:14			✓		

Container Type: P
Preservative: C

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
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Relinquished By:	Date/Time	Received By:	Date/Time
AK	4/25 900		
	4/25/22 14:35		4/25/22 16:45
	4/25/22	Melissa Wood	4/25/22 2300

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Form No: 01-14 HC (rev. 30-Sept-2013)

APPENDIX B: SAMPLING PLAN

PARTNER
Engineering and Science, Inc.

LEAD IN DRINKING WATER TESTING SAMPLING PLAN

Union County Educational Services Commission

45 Cardinal Drive
Westfield, NJ 07090-3316

May 23, 2022

PARTNER Project No.21-327189.1

Prepared for:

Union County Educational Services Commission

Contents

1. INTRODUCTION

This Lead Drinking Water Testing Sampling Plan (Sampling Plan) was developed by the Union County Educational Services Commission, (District), based on guidance developed by the New Jersey Department of Environmental Protection (NJDEP) and the United States Environmental Protection Agency (USEPA), to establish a plan for sampling lead at drinking water outlets used for consumption or food preparation in every school within the District (See Attachment A for full school listing). The data collected through the execution of this Sampling Plan will determine if immediate remedial measures are necessary and will assist in the prioritization of future water testing for lead in accordance with this Sampling Plan.

This Sampling Plan is based on the USEPA publication, "The 3Ts for Reducing Lead in Drinking Water in Schools" and NJDEP guidance.

The District has also developed a Quality Assurance Project Plan (QAPP) for the sampling program which is available under separate cover.

2. OBJECTIVE

The 1988 Lead Contamination Control Act (LCCA) is aimed at identifying and reducing lead (Pb) in drinking water in schools and child care facilities. In response, the USEPA prepared guidance documents to assist school districts in meeting the requirements of the LCCA. The guidance documents were used as a resource in developing this Sampling Plan.

It should be noted, for the purpose of determining immediate remedial measures (i.e. taking drinking water outlets out of service and notifying parents/guardians of results), the District is required to utilize the lead action level established in the SDWA rules by the USEPA at 40 CFR 141.80 for lead in drinking water. At the time of development of this Sampling Plan, the lead action level is 15 µg/L, which is more stringent than the guidance provided by USEPA in their Lead in Schools Guidance which recommends action be taken at drinking water outlets greater than 20 µg/L. Schools in New Jersey that are served by their own well (not public water), which are regulated pursuant to the Federal and New Jersey SDWA, must adhere to the 15 µg/L value for determining compliance.

3. SAMPLING PROJECT COORDINATION

Testing for lead in schools requires a coordinated effort especially when multiple schools are to be included in the testing effort. Designated personnel and set protocols are essential to ensuring a coordinated effort.

3.1 School District Program Manager (Program Manager)

Union County Educational Services Commission Program Manager:
Eric Larson
(908) 233-6655

The School District Program Manager (Program Manager) is the overall authority in the execution of the District's lead sampling project. He/she is responsible for the initial notification to the District of the testing

program, obtaining funds for testing, assigning the Sampling Project Manager, requesting/enlisting the assistance from other District departments if needed, approving the District's QAPP(s), approving the Final Report for each school and coordinating with other District officials to make the results of the testing available to the public.

3.2 Sampling Project Manager (Project Manager)

Union County Educational Services Commission Sampling Project Manager:
Danial Bracey, Partner Engineering and Science
(908)497-8904

The Sampling Plan Project Manager (Project Manager) is responsible for overseeing the execution of lead sampling at each of the district's schools. This involves the prioritization of schools to be sampled, and adherence with the District's Sampling Plan and QAPP. He/she serves as the liaison between the District, State agencies, local Health Departments, laboratories and public water systems (if applicable). He/she reports to the Program Manager.

Project Manager Responsibilities

- Prepare the District's Specific Quality Assurance Project Plan (QAPP) and Sampling Plan;
- Manage the Sampling Plan and QAPP;
- Oversight of Individual School Project Officers (Project Officers) to ensure that they adhere to the Sampling Plan procedures and the QAPP;
- Purchase of equipment needed for district lead sampling;
- Coordinate with New Jersey laboratories certified for lead testing in drinking water;
- Coordinate with Project Officers to establish sampling schedules;
- Ensure properly signed QAPPs are in place prior to initiation of sampling;
- Verify that officials from each school are aware when sampling is scheduled and the expected duration;
- Review of the School Field Sampling Summary Reports prepared by Project Officers;
- Review of Laboratory Data Reports (LDR) from Laboratory Managers;
- Review of Final Project Reports prepared by Project Officers;
- Identify limitations in the use of any laboratory data due to information provided in the accompanying School Field Sampling Summary Report;
- Maintain the original signed QAPP(s);
- Maintain documents, reports and records listed in QAPP, including:
    - Laboratory Data Reports (LDR)
    - Copy of Field Sampling Summary Report with copies of field logbooks,
    - Field Walk-Through reports including Attachments B, C, D E and F of this Sampling Plan,
    - Chain of custody forms and flush tags.
    - Copy of Final Project Report
- Maintenance of other relevant records, such as:
    - Purchase orders for analytical costs (copy).
    - Agreement with laboratory to sample, analyze, and report with details for payment
    - Receipts (originals or copies)

3.2 Individual School Sampling Project Officers (Project Officers)

An Individual School Sampling Project Officer (Project Officer) shall be assigned for each school. A Project

Officer should be someone who is familiar with the school building layout and plumbing system. See District's QAPP for a list of the Project Officers.

Project Officer Responsibilities

- General project oversight for assigned school(s).
- Generate field log book for each assigned school. Document field activities including any changes to procedures outlined in the Sampling Plan or QAPP.
- Ensure proper completion of the Plumbing Profile Form for assigned school(s) - See Attachment B.
- Oversight of completion of the following reports found in the Sampling Plan which require sign–off by Project Officer:
    - Water Outlet Inventory (Attachment C)
    - Filter Inventory (Attachment D)
    - Flushing Log (Attachment E)
    - Pre Sampling Water Use Certification (Attachment F).
- Prepare labels for outlets to be sampled.
- Prepare for Walk-Through including acquisition of School Floor Plan.
- Attend school Walk-Through.
- Ensure proper completion of Walk-Through documentation including identification of outlets on Floor Plan, and Sampling Location Inventory with coding according to the Sampling Plan (Attachment C).
- Supervision of field activities such as Walk- Through, flushing (if required), locking school prior to sampling, and sample collection.
- Identify low use water outlets requiring flushing and attach flush tag (Attachment G).
- Ensure that Field Sampling Team has all relevant sampling supplies including sampling bottles, labels, proper reagent water and chain of custody forms prior to collection of samples.
- Ensure that all water outlets to be sampled prior to sampling event are labeled.
- Ensure that all low use outlets identified for sampling had been flushed.
- Remove flush tags from outlet once sampling is completed.
- Responsible for ensuring water remains motionless for a minimum of eight hours (last to leave the school) prior to sampling event by following procedures in Section 8.
- Verify that the Sampling Plan was followed prior to initiating sampling by completing the Pre-Sampling Water Use Certification (Attachment F).
- Provide supervision of sampling event.
- Document issues during sampling event in field log book.
- Prepare Field Walk-Through Report, School Field Sampling Summary Report and Final Project Report for assigned school(s).
- Maintain field log books for each school.
- Prepare samples for shipment and delivery to laboratory per certified laboratory instructions.
- Ensure that samples are delivered to laboratory within the time period specified by the certified laboratory

3.3 Individual School Protocols

A separate log book and supporting documentation shall be kept for each school. The contents of the log book are to include the Attachments A through F found at the end of this plan. A field log book should include but not be limited to: a material evaluation, filter log, drinking water outlet inventory, flushing log, and label identification codes.

4. SCHOOL SAMPLING PRIORITY

The District developed a list of all school facilities scheduled for sampling. See Attachment A for the school sampling listing. Please note that the list may be updated based on conditions at the school, which prevent sampling from occurring or scheduling issues. Accordingly, the list should include a revision date.

5. PLUMBING SURVEY

Prior to a sampling event, documentation of various aspects of each school's water system needs to be completed. This following information needs to be compiled and the attachments completed including:

5.1 Plumbing Profile

The purpose of a Plumbing Profile (Attachment B) is to identify and categorize plumbing and infrastructure in order to prioritize schools/outlets for testing, and to identify potential sources of lead (i.e. lead service lines, or lead piping or solder). The results of the Plumbing Profile determine the sampling locations and priority within the individual school facilities.

A Plumbing Profile should include all of the following:

- Year school built and dates of any additions
- Building blue prints and floor diagrams
- Service line material;
- Material of internal plumbing, this is an important part of a plumbing profile, and whether it meets the current New Jersey "lead-free" plumbing code;
- Point-of-entry or point-of-use treatment being used;
- All drinking water outlets including fountains that are permanently out of service;
- All drinking water outlets including fountains that are temporarily out of service;
- All drinking water outlets including drinking water fountains that are leaking or evidence of staining and in need of repair;
- Type (make and model) and location of all drinking water fountains, including detailed description that identifies of whether they are lead-lined or if they have been involved in any recalls, (See USEPA Fact Sheet at http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=30005UPU.txt);
- Locations of all drinking water outlets including fountains;
- All plumbing repairs and replacements needed for internal plumbing;
- All plumbing repairs and replacements conducted within the past year;
- Locations of any electrical wires grounded to water pipes

5.2 Filter Inventory (If Applicable)

A Filter Inventory (Attachment D) shall be prepared, including the following information:

- Location (school and outlet);
- Make and model;
- Installation date (last replaced);

- Replacement frequency;
- Documentation of repairs; and
- Contaminants the filter is capable of and/or NSF-certified for the removing e.g. lead and others

6. PLANNING

6.1 Walk –Through

A Walk-Through must be conducted by the Project Officer prior to sampling as part of the planning process. The Walk-Through must include every room (including but not limited to classrooms, offices, bathrooms, kitchens and recreational areas) in the facility. During the Walk- Through, all drinking water and food preparation outlets to be sampled will be labeled by the Project Officer on the Floor Diagram (6.2).

The Project Officer will also conduct an onsite assessment of each sample outlet to document (using Attachment C) specific characteristics of the outlet (e.g. leaking outlets; staining). During this assessment, the water should be turned on to determine the spray pattern, whether there is adequate flow to collect samples or if any odor or color differences are present and whether the cold water faucet is functioning properly. Only cold water faucets are to be sampled. For motion sensor and metered sinks, the hot water valve will be shut off on the day of sampling. All outlets in need of repair must be repaired prior to sampling or documented on the temporary out of service list in the Plumbing Profile (Attachment B).

6.2 Floor Diagram

Each drinking water outlet shall be identified on the school schematic (floor diagram). The floor diagram should have the classroom numbers and the following locations labeled:

- Service Line = SL
- Point of Entry (The closest water outlet to the entrance of the service line into the school)
- Food preparation outlets (i.e. cafeteria, kitchen and home economics class faucets);
- Drinking Water Fountains; and
- Other drinking water outlets to be sampled (i.e. nurse's office, teacher's lounge, home economics, etc.), and any other room or outside facility used for water consumption.

The Project Officer must date and sign the floor diagram.

7. SAMPLE LOCATIONS

7.1 Sample Locations

The following locations shall be identified and labeled for each school:

- Kitchen outlets
- Food Preparation outlets
- Teacher Lounge outlets
- Nurse's Office outlets

- Home Economic Sink outlets
- Drinking Water Fountains – Bubblers and Water Coolers
- Outside drinking water fountains and food preparation areas
- Ice Machines
- Other drinking water outlets used for consumption

Examples of outlets that do not need to be sampled include utility sinks, outside spigots, bathroom sinks and classroom sinks, unless any of these sinks are used routinely for consumption.

7.2 Sample Location Codes

Each sampling location shall be identified by its location and type using the following coding system (Note additional codes as needed):

KC = Kitchen Outlet, Cold
CT= Cafeteria Outlet
FP= Food Preparation Sink
TL= Teacher Lounge Sink
NS = Nurse's Office Sink
EC = Home Economics Outlet, Cold
DW= Drinking Water Bubbler
WC = Water Cooler (Chiller Unit)
IM = Ice Machine

7.3 Sampling Location Inventory

Attachment C shall be used to develop a detailed inventory of each drinking water outlet in the school to be sampled. The inventory must be completed and signed by the Project Officer.

The Drinking Water Outlet Inventory shall include the following information:

- All drinking water outlets in the school
- The type, location, and sample location code of each drinking water outlet
- If the drinking water outlet has a chiller unit
- If the drinking water outlet has an aerator/screen
- If the drinking water outlet is motion activated, in which the hot water at the outlet must be turned off prior to sampling
- If the drinking water outlet is operational
- If the drinking water outlet has not been used frequently
- If the drinking water outlet is leaking
- If the drinking water outlet has a filter
- The make and model of all drinking water fountains and water coolers

8. SAMPLING PROCEDURES

8.1 Timeline

Samples should be collected before the facility opens in the morning and before any water is used in the

building. The water shall sit in the pipes unused for at least 8 hours, but no more than 48 hours, before a sample is collected.

At no time should filters, aerators and screens be removed prior to or during the sampling event.

Prior to Sampling

- For buildings that have not been used for more than 48 hours, the District will perform systematic flushing 48 hours prior to the sampling event, as described in the USEPA's "3Ts For Reducing Lead in Drinking Water in Schools" (revised October 2006, see page 56). This flushing event and locations shall be documented in a log (Attachment E).
    - The flushing log must be completed and signed by the Project Officer.
- The Project Officer will contact the laboratory to confirm sample bottles, weatherproof labels, chain of custody forms and coolers are available and ready for the sampling event.
- Every drinking water outlet to be sampled (previously identified in Attachment C) will be labeled with a specific Sample Location Code in indelible marker on the underside of the sampling fixture in the event the District has to re-visit the sample location.
- A communication will be sent out to all staff in schools being sampled explaining what time all staff must exit the building.
- After this time, signs shall be posted to indicate that water should not be used and access to the building shall be restricted to ensure that water sits undisturbed for a minimum of 8 hours.
- Turn off all irrigation and outdoor water features.

Day of Sampling

The Project Officer will use Attachment F to document when the water was last used and when sampling began.

8.2 Sample Collection

Sample Collection Highlights

- All samples shall be collected in a pre-cleaned HDPE 250mL wide mouth single use rigid sample container.
- Identify on the Sampling Plan the outlet closest to the water service line(s) entry point to be collected first, then identify the next closest outlet as second, and move away from the water service line(s) entry point until the outlet farthest away is identified to be sampled last on the sampling plan. This will minimize the chance that a sampling location will be flushed by an upstream fixture. Sampling will begin at the outlet closest to the point of entry and continue to the furthest outlet to ensure the water remains motionless in the plumbing.

Sample Collection Method

USEPA recommends a two-step sampling process to be followed for identifying lead contamination. Lead in a water sample taken from an outlet can originate from the outlet fixture (the faucet, bubbler etc.), plumbing upstream of the outlet fixture (pipe, joints, valves, fittings etc.), or it can already be in the water that is entering the facility. The two-step sampling process helps to identify the actual source(s) of lead.

All sampling must be conducted in accordance with this Sampling Plan and the District's QAPP.

1. For each drinking water outlet sampled, a new pair of non-colored latex or nitrile gloves shall be used to collect both the first draw and flush follow-up samples. This is to minimize the potential for cross contamination of outlets by sampling personnel.
2. First draw samples (i.e. samples collected from outlets where water sat undisturbed for a minimum of 8 hours) will be collected from a cold water outlet at each location identified in 7.3 above. The sample must be collected by placing the bottle under the outlet before turning the cold water on. No water should be allowed to run prior to collecting a sample. For motion-activated faucets, the hot water valve must be turned off prior to sampling.
3. Immediately after the first draw sample is collected, the sampler will collect a follow-up flush sample.
4. When collecting the follow-up flush sample, the outlet will be turned on and allowed to run for 30 seconds then the water will be captured in a pre-cleaned 250 mL container.
5. If the drinking water outlet is a water cooler with a cooler unit, DO NOT COLLECT A FOLLOW-UP FLUSH SAMPLE UNTIL ALL FIRST DRAW SAMPLES ARE COLLECTED IN THE SCHOOL.
6. After all sampling is completed, return to the water coolers to collect a follow-up flush sample, again starting at the water cooler located in closest proximity to the POE and then move outward. Allow the water to run for 15 minutes, then sample the drinking water outlet utilizing a pre-cleaned 250 mL container.
7. Each sample collected shall be properly identified on the sample bottle and chain of custody using the Sample Location Code previously identified by the District (as identified on the label on the outlet and on the floor diagram). In addition, follow-up flush samples shall be identified by noting "FLUSH" after the Sample Location Code on the sample bottle and on the chain of custody (e.g. MM-2F-DW-01 and MM-2F-DW-01 FLUSH).

Additional Sampling Event

Upon receiving the results of the initial and follow-up flush samples at all outlets, the District will conduct additional sampling events for the following situations: any location required to be sampled previously but was not sampled (not operational during initial sampling event), where there was a possible lab error or sample collection error, and any location that was not sampled but could help pinpoint the source of lead in a sampled outlet.

8.3 New Jersey Certified Laboratories

Laboratory Responsibilities

Certify to the District that they have received, and will follow, the Sampling Plan and QAPP.

- Each laboratory must document that laboratory personnel have previous experience sampling for lead and have been properly trained to conduct USEPA Method 200.8 or other methods that are approved sampling methods. Approved sampling methods are USEPA methods for the analysis of lead in drinking water (USEPA Method 200.9, USEPA Method 200.5, SM3113B, ASTM3559-D)

provided that the reporting limit used by the laboratory for that method is less than or equal to 2 µg/L.

- The laboratory will conduct analysis of a laboratory fortified blank (Field Blank) to assess the accuracy. The acceptance criteria for accuracy for the results will be within plus or minus 15% recovery of the known value.
- Laboratories must provide the results to the District within timeframe required under contract (14 day is average).
- Laboratories will report in µg/L (ppb) and to at least three significant figures.

Sampling Personnel Responsibilities

Each sampler will be responsible for the following:

- Preparation of pre-printed waterproof labels, which will include, the sampler's name, the school name, the Sample Location Code, parameter to be analyzed (lead), date of collection and any preservation technique used;
- Preparation of a chain of custody to include the field sample information;
- Obtaining from the laboratory, prior to the sampling event, ASTM Type I reagent-grade water (RGW) to be used as Field Reagent Blanks (FRB). The sampler will transport this RGW to the school to be sampled. Before the first sample is collected the RGW collected at the Laboratory will be transferred to a sample container near the first sample location inside the school building. This FRB sample will be stored and transported in the same cooler, handled and preserved in the same manner as samples collected at that school.
- Documentation of any and all observations such as automatic sensors, odors, change in water color, low water flow, water outlet leaks (i.e. 1 second drip), irregular water spray, attached filter(s), if the screen/aerator is on/off the water outlet or if the water becomes warm/hot.
- Minimizing the potential for cross contamination of sample outlets by sampling personnel. The water will be collected from the outlet directly into each container.
- Following all of the sampling procedures outlined in the Sampling Plan and QAPP.

8.4 Sampling Results

The laboratories will provide the lead sample results to the District in electronic format within the timeframe required under the contract. A spreadsheet of all results, the analytical results report, and the chain of custody forms must be included.

Within 24 hours after the District has reviewed and verified the final laboratory results, the District will make the results publically available and if any results exceed the action level provide written notification to the parents/guardians of all students as well as to the Department of Education.

8.5 Intermediate Remedial Measures

Upon receiving sample results, the District will turn off all outlets with results that exceed 15 µg/L (as defined

as greater than or equal to 15.5 µg/L). If these locations must remain on for non-drinking purposes, a "DO NOT DRINK – SAFE FOR HANDWASHING ONLY" sign will be posted (Attachment H.v).

Glossary

Drinking Water Outlet- an outlet that can be used for the consumption of water, such as, water fountains, water coolers, bubblers, kitchen sinks and food preparation sinks; however, classroom, bathroom, and outlets used for washing dishes are not drinking water outlets.

Action Level (AL)- The lead level established by the USEPA at 40 CFR 141.80 for lead in drinking water.

Bottled Water- includes sealed purchased water from an external company (individual bottles or dispensers). Drinking water dispensers that utilize purchased water are not required to be sampled.

First Draw Sample – a sample that is collected from outlets where water sat undisturbed for a minimum of 8 hours.

Follow-up Flush Sample - sample that is collected from outlets after they have been manually flushed.

Low-Use Outlets- outlets that are not used routinely and may sit for periods of time with minimal or no use. Examples include those outlets in a wing of a school that is temporarily closed off and are not being used, or fountains and food preparation outlets that are only used during sporting or other events.

Out of Service Outlets- drinking water outlets as identified on Attachment C that are not operational.

a. **Permanently Out of Service Outlets**- outlets that are not being used and the District plans to decommission.
b. **Temporarily Out of Service Outlets**- outlets that require repair or replacement and will be put back in service once they are repaired. For example, an outlet with a broken handle.

Point of entry (POE)- The point at which the service line enters the building. For the purposes of sample collection, the POE sample location is the closest water outlet to the entrance of the service line into the school.

Quality Assurance Project Plan (QAPP) Template- describes the planning, implementation, and evaluation steps that will be consistently applied by those involved in a School District's Sampling Plan. The QAPP will provide a high level of confidence in the results of this sampling and aide in meeting the overall goal of ensuring any appropriate remediation measures are quickly identified and implemented.

Sampler- personnel responsible for collecting the drinking water outlet samples for a school. The individual is required to review and understand their roles and responsibilities under the District's Quality Assurance Program Plan and be able to collect samples in accordance with the District's Sampling Plan.

Service Line- the pipe that carries water to the school from the public water system's main in the street.

School Wide Systematic Flush- system flushing is required if the school has been dormant for greater than 48 hours (holiday or seasonal break). A Flushing Log (Attachment E) needs to be

completed for each school flushed.

Water Cooler- any mechanical device affixed to drinking water supply plumbing that actively cools water for human consumption. The reservoir can consist of a small tank or a pipe coil.

Attachment A - List of Union County Educational Services Commission

Priority for Sampling

SCHOOL NAME/FACILITY NAME	DATE OF SAMPLING	CERTIFIED LABORATORY	NOTES
Hillcrest Academy North	04/23/2022	Alpha Analytical	
Hillcrest Academy South			Temp. Closed
Crossroads School	04/23/2022	Alpha Analytical	
Westlake School			Temp. Closed
Lamberts Mill Academy			Temp. Closed
Holy Spirit	04/23/2022	Alpha Analytical	

Attachment B – Plumbing Profile

***Note**: Complete for each school. For additional information see the USEPA publication, "The 3Ts for Reducing Lead in Drinking Water in Schools"*

Name of School: ____Hillcrest North_____ Grade Levels: _____

Address: _____2630 Plainfield Avenue, Scotch Plains, NJ _____

Individual school project officer Signature: _____ Date: _____

Questions	Answers	
Background Information		
1. What year was the original building constructed? Were any buildings or additions added to the original facility?		
2. If the building was constructed or repaired after 1986, was lead-free plumbing and solder utilized? What type of solder was used? Document all locations where lead solder was used.		
3. Where are the most recent plumbing repairs and replacements?	Location: Staff Room	Description: Water Cooler added
4. With what materials is the service connection (the pipe that carries water to the school from the public water system's main in the street) made? Where is the Service Line located? (This is the POE location.)	Material: Location:	
5. Is there point of entry (POE) or point of use (POU) treatment in use?	Y / N Type:	Location:

Questions	Answers
6. Are there tanks in your plumbing system (pressure tanks, gravity storage tanks)?	Y / N
7. Does the school have a filter maintenance and operation program? If so, who is responsible for this program? What is the process for adding filters?	
8. Have accessible screens or aerators on outlets that provide drinking water been cleaned? Does the school have a screen or aerator maintenance program?	Y / N
9. Have there been any complaints about bad (metallic) taste? Note location(s).	Y / N Location:
10. Review records and consult with the public water supplier to determine whether any water samples have been taken in the building for any contaminants. If so, identify: • Name of contaminant(s) • Concentrations found • pH level Is testing done regularly at the building?	
11. Other plumbing background questions include: • Are blueprints of the building available? • Are there known plumbing “dead-ends”, low use areas, existing leaks or other “problem areas”? Are renovations planned for any of the plumbing system?	

Questions	Answers	
Walk-Through *These questions should be addressed during the walk-through of the facility, while Attachment C- Drinking Water Outlet Inventory is being completed.*		
1. Confirm the material of Service Line visually.		
2. Confirm the presence of POE or POU treatment.		
3. What are the potable water pipes made of in your facility? • Lead • Plastic • Galvanized Metal • Cast Iron • Copper • Other Note the water flow through the building and the areas that receive water first, and which areas receive water last.		
4. Are electrical wires grounded to Water Pipes? Note location(s).	Y / N Location:	
5. Are brass fittings, faucets, or valves used in your drinking water system? Note that most faucets are brass on the inside. Document the locations of any brass water outlet to be sampled.	Complete in “Brass” Column in Attachment C- Water Outlet Inventory.	
6. Locate all drinking water outlets (i.e. water coolers, bubblers, ice machines, kitchen/ food prep sinks, etc.) in the facility.	Complete in Attachment C-Water Outlet Inventory.	

Questions	Answers	
7. Have the brands and models of the water coolers in the school been compared to the list of recalled water coolers in the Toolkit? Recalled Drinking Water Fountains Make and Model	Y / N Type	
8. Have signs of corrosion, such as frequent leaks, rust-colored water, or stained fixtures, dishes, or laundry been detected? Note the locations of water outlets.	Complete in “Signs of Corrosion” column in Attachment C- Drinking Water Outlet Inventory.	
9. Are there any outlets that are not operational and therefore out of service? Permanently? Temporarily? Permanently **Temporarily**	**Y** / N Complete “Operational Column” in Attachment C- Drinking Water Outlet Inventory. Type/ Location **HN-WF-01 & HN-WF-02**	 Description **Being Replaced**

Attachment B.i: Plumbing Profile Instructions

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
The questions in this column will help you determine whether lead is likely to be a problem in your facility, and will enable you to prioritize your sampling effort.	*This column discusses the significance of possible answers to the plumbing profile questions.*
Background Information	
1. When was the original building constructed? Were any buildings or additions added to the original facility? If so, complete a separate plumbing profile for each building, addition, or wing.	Older Buildings – Through the early 1900s, lead pipes were commonly used for interior plumbing in certain parts of the country in public buildings and private homes. Plumbing installed before 1930 is more likely to contain lead than newer pipes. Between 1920 and 1950, galvanized pipes were also used for plumbing. After 1930, copper generally replaced lead as the most commonly used material for water pipes. Up until the mid- to late-1980s (until the lead-free requirements of the 1986 Safe Drinking Water Act Amendments took effect), lead solder was typically used to join these copper pipes. The efforts of your public water supplier over the years to minimize the corrosiveness of the water may have resulted in mineral deposits forming a coating on the inside of the water pipes (passivation). This coating insulates the water from the plumbing and results in decreased lead levels in water. If the coating does not exist or is disturbed, the water is in direct contact with any lead in the plumbing system. Newer Buildings – New buildings are not likely to have lead pipes in their plumbing systems, but they are very likely to have copper pipes with solder joints. Buildings constructed prior to the late 1980s, before the lead-free requirements of the 1986 Safe Drinking Water Act Amendments, may have joints made of lead solder. Buildings constructed after this period should have joints made of lead-free solders. Even if "lead-free" materials were used in new construction and/or plumbing repairs, lead leaching may occur.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
2. If built or repaired after 1986, were lead-free plumbing and solder used in accordance with the lead-free requirements of the 1986 Safe Drinking Water Act Amendments? What type of solder has been used? Was lead solder used in your plumbing system? Note the locations of lead solder.	The 1986 Amendments to the Safe Drinking Water Act banned plumbing components that contained elevated levels of lead. Lead-free solder and flux (not more than 0.2% lead) and pipe, pipe fittings, and fixtures (not more than 8% lead) must now be used. The leaching potential of lead-free (i.e., tin-antimony) solder is much less than lead solder. The leaching potential of lead-free pipe, pipe fittings, and fixtures is also less, but leaching is still possible. If lead-free materials were not used in new construction and/or plumbing repairs, elevated lead levels can be produced. If the film resulting from passivation does not exist or has not yet adequately formed, any lead that is present is in direct contact with the water. In some areas of the country, it is possible that high-lead materials were used until 1988 or perhaps even later. Your local plumbing code authority or building inspector may be able to provide guidance regarding when high-lead materials were last used on a regular basis in your area.
3. When were the most recent plumbing repairs and replacements made (note locations)?	Corrosion occurs (1) as a reaction between the water and the pipes and (2) as a reaction between the copper and solder (metal-to-metal). This latter reaction is known as galvanic corrosion, which can be vigorous in new piping. If lead solders were used in the piping or if brass faucets, valves, and fittings containing alloys of lead were installed *(see response to Walk Through Question 5 below for further discussion of brass)*, lead levels in the water may be high. After about 5 years, however, this type of reaction (galvanic corrosion) slows down and lead gets into water mainly as a result of water being corrosive. If the water is non-corrosive, passivation is likely to have occurred and to have reduced opportunities for lead to get into the water system. For these reasons, if the building (or an addition, new plumbing, or repair) is less than 5 years old and lead solder or other materials (e.g., brass faucets containing lead alloys) were used, you may have elevated lead levels. If water supplied to the building is corrosive, lead can remain a problem regardless of the plumbing's age.
4. With what materials is the service connection (the pipe that carries water to the school from the public water system's main in the street) made? Note the location where the service connection enters the building and connects to the interior plumbing. (This is the POE location)	Lead piping was often used for the service connections that join buildings to public water systems. The service connection is the pipe that carries drinking water from a public water main to a building. Some localities actually required the use of lead service connections up until the lead-free requirements of the 1986 Safe Drinking Water Act Amendments took effect. Although a protective layering of minerals may have formed on these pipes, vibrations can cause flaking of any protective build-up and, allowing lead contamination to occur.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
5. Is there point of entry (POE) or point of use (POU) treatment in use?	Are there water treatment units in your plumbing system? Treatment units could be, but are not limited to, ion exchange units, filter cartridge, reserve osmosis, etc.
6. Do you have tanks in your plumbing system (pressure tanks, gravity storage tanks)? Note the location of any tanks, and any available information about the tank; e.g., manufacturer, date of installation.	Some older tanks may contain coatings that are high in lead content. Tanks may accumulate sediment that could be flushed back into the plumbing system under certain circumstances. You may wish to contact the supplier or manufacturer to obtain information about coatings. You may also wish to hire a plumber or tank service contractor to inspect your tanks, especially gravity storage tanks that are located outside of the building.
7. Does the school have a filter maintenance and operation program? If so, who is responsible for this program? What is the process for adding filters?	A program for the maintenance and the upkeep of filters on drinking water outlets is necessary to ensure the effectiveness of the filters. Most filters recommend replacement after six months. If the filters need replacement every six months, the program will include a procedure for ensuring that every six month old filter is replaced. An individual should be responsible for ensuring that this filter maintenance program is followed. If the school would like to add a filter to a water outlet, what is the process? Does a request form have to be completed and submitted to the individual in charge of maintenance? Do all filters need to be added at a certain time of year to follow the maintenance program?
8. Do outlets that provide drinking water have accessible screens or aerators? (Standard faucets usually have screens. Many coolers and bubblers also have screens.) Note the locations. Have these screens been cleaned? Note the locations.	Lead-containing sediments that are trapped on screens can be a significant source of lead contamination. Sediments should be tested for the presence of lead, and your facility should create a routine maintenance program to clean the screens frequently. If sediment has been a reoccurring problem regular cleaning of the screens and additional investigating into why the debris is accumulating is appropriate. However, the manufacturer or water service provider should be contacted to obtain instructions.
9. Have there been any complaints about water taste (metallic, etc.) or rusty appearance? Note the locations.	Although you cannot see, taste, or smell lead dissolved in water, the presence of a metallic taste or rusty appearance may indicate corrosion and possible lead contamination.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
10. Check building files to determine whether any water samples have been taken from your building for any contaminants (also check with your public water supplier). • Name of contaminant(s)? • What concentrations of these contaminants were found? • What was the pH level of the water? • Is testing done regularly at your facility?	Lead testing may have previously been done voluntarily under the Lead Contamination Control Act. Results of analyses of general water quality, such as measures of pH, calcium hardness, and carbonate alkalinity, can provide important clues about the corrosiveness of the water. Generally, the higher the values of these parameters, the less likely it is that your water is corrosive. If you have no data from your school, your public water system should at least be able to provide information about the general water quality.
11. Other plumbing questions: • Are blueprints of the building available? • Are there known plumbing "dead• ends," low use areas, existing leaks or other "problem areas"? • Are renovations being planned for part or all of the plumbing system?	You should incorporate this information into decisions regarding sample locations and sampling protocol. You may wish to note the direction of water flow and the location of fixtures, valves, tanks, areas of sediment accumulation, areas of corrosion, etc., on a sketch or blueprint of the plumbing.
Walk-Through	
1. Confirm the material that the service line is made of visually	See Background Information Question #4.
2. Confirm the presence of POE or POU treatment.	See Background Information Question #5

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
3. Specifically, what are the potable water pipes made of in your facility (note the locations)? • Lead • Plastic • Galvanized Metal • Cast Iron • Copper • Other Note the location of the different types of pipe, if applicable, and the direction of water flow through the building. Note the areas of the building that receive water first, and which areas receive water last.	Survey your building for exposed pipes, preferably accompanied by an experienced plumber who should be able to readily identify the composition of pipes on site. Most buildings have a combination of different plumbing materials: • Lead pipes are dull gray in color and may be easily scratched by an object such as a knife or key. Lead pipes are a major source of lead contamination in drinking water. • Galvanized metal pipes are gray or silver-gray in color and are usually fitted together with threaded joints. In some instances, compounds containing lead have been used to seal the threads joining the pipes. Debris from this material, which has fallen inside the pipes, may be a source of contamination. • Copper pipes are red-brown in color. Corroded portions may show green deposits. Copper pipe joints were typically joined together with lead solders until the lead-free requirements of the 1986 Safe Drinking Water Act Amendments took effect. • Plastic pipes, especially those manufactured abroad, may contain lead. If plastic pipes are used, be sure they meet NSF International standards. *(Note: NSF International is an independent, third-party testing organization. Product listings can be obtained by visiting their Web site at http://www.nsf.org/ business/search_listings/index/asp.)*
4. Is any electrical equipment grounded to water pipes? Note the locations.	If electrical equipment, such as telephones, has been installed using water pipes as a ground, the electric current traveling through the ground wire will accelerate the corrosion of any interior plumbing containing lead. The practice should be avoided, if possible. However, if existing wires are already grounded to water pipes, the wires *should not be removed* from the pipes unless a qualified electrician installs an alternative grounding system. Check with your local building inspector on this matter. Your state or local building code may require grounding of the wires to the water pipes. Improper grounding of electrical equipment may cause severe shock.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
5. Are brass fittings, faucets, or valves used in your drinking water system? (Note: Most faucets are brass on the inside.) You may want to note the locations on a map or diagram of your facility and make extensive notes that would facilitate future analysis of lead sample results.	Brass fittings, faucets, and valves are golden yellow in color, similar to copper in appearance, or are plated with chrome. Brass is composed primarily of two metals, copper and zinc. Most brasses contain lead ranging from 2 percent to 8 percent. That lead can contaminate the water contact surface when it is smeared on the machined surfaces during production. After 1996, brass fittings installed in drinking water outlets such as faucets and water coolers must meet NSF standards for lead content. While this percentage is considered lead-free under the 1986 Safe Drinking Water Act Amendments, some contamination problems still may occur. Older brass faucets may contain higher percentages of lead and lead solder in their interior construction and pose contamination problems. Note that your state or local government may have imposed this standard prior to 1988. The degree to which lead will leach from brass products containing alloys with less than 8 percent lead is dependent upon the corrosiveness of the water and the manufacturing process used to develop the product. A study revealed that fabricated faucets tend to contribute less lead to the water than faucets manufactured by the permanent mold process, regardless of the amount of lead in the alloy. In response to a requirement of the 1996 SDWA, EPA worked with the plumbing industry and NSF International to develop a voluntary industry standard that is designed to minimize the amounts of lead being leached from these products. This standard is NSF/ANSI Standard 61, Section 9. Since 1998, all plumbing fixtures for use as drinking water supply must meet this standard. You should require NSF/ ANSI 61 certification on all drinking water system products purchased. Include a copy of the NSF/ ANSI 61 certificate as a requirement on your purchase orders. The distributor or manufacturer can provide you with a list of certified products. You should require NSF/ANSI 61 certification on all drinking water system products used in new construction and inform your architects and revise your building specifications.
6. How many of the following outlets provide water for consumption? Note the locations. • Water Coolers • Bubblers • Ice Makers • Kitchen Taps • Drinking Fountains or Taps	In addition to lead components in the plumbing system, lead solders or lead in the brass fittings and valves used in some taps, bubblers, and refrigerated water coolers may be sources of lead. It is important to identify the locations of all such drinking water outlets. Faucets in restrooms should not be used to obtain water for drinking. Although they may be adequate for washing hands, they may not be appropriate for drinking purposes. You may consider posting “do not drink” signs.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
7. Has your school checked the brands and models of water coolers and compared them to the list of recalled water coolers in Appendix H.i Note the locations of any recalled coolers.	Water coolers may be a major source of lead contamination. The Federal Consumer Product Safety Commission negotiated an agreement with Halsey Taylor through a consent order agreement published in June 1990 to provide a replacement or refund program that addresses all the water coolers listed by EPA as having lead-lined tanks. Halsey Taylor was the only company identified by EPA as manufacturing some water coolers with lead-lined tanks. Additionally, some coolers manufactured by EBCO had a bubbler valve and one soldered joint that contained lead. See Attachment H.i of this document for a summary of EPA's list of water coolers found to contain lead. Use the list to help prioritize your sampling. If your water cooler is listed as having a lead-lined tank, you should not use the water for drinking, and you should remove the cooler immediately as these coolers pose the highest risk of contamination.
8. Are there any signs of corrosion, such as frequent leaks, rust-colored water, or stained dishes or laundry? Note the locations.	Frequent leaks, rust-colored water, and stains on fixtures, dishes, and laundry are signs of corrosive water. Blue-green deposits on pipes and sinks indicate copper corrosion; brown stains result from the corrosion of iron. Where such signs occur, high levels of lead, copper, and iron may be present in the water. Lead can accumulate with iron, which can form sediments that are hard to remove.
9. Are there any outlets that are not operational and therefore out of service? Permanently? Temporarily?	Permanently out of service water outlets are outlets that are no longer being used and the facility plans to decommission in the future. Temporarily out of service water outlets are outlets that require repair or replacement and will be put back in service once they are operational.

Attachment B – Plumbing Profile

***Note**: Complete for each school. For additional information see the USEPA publication, "The 3Ts for Reducing Lead in Drinking Water in Schools"*

Name of School: ____Crossroads School_____ Grade Levels: _____

Address: _____45 Cardinal Drive, Westfield, New Jersey_____

Individual school project officer Signature: _____ Date: _____

Questions	Answers	
Background Information		
1. What year was the original building constructed? Were any buildings or additions added to the original facility?	UNKNOWN	
2. If the building was constructed or repaired after 1986, was lead-free plumbing and solder utilized? What type of solder was used? Document all locations where lead solder was used.	UNKNOWN	
3. Where are the most recent plumbing repairs and replacements?	Location: Basement, Kitchens, Board Room	Description: Added 5 Water Coolers to the building
4. With what materials is the service connection (the pipe that carries water to the school from the public water system's main in the street) made? Where is the Service Line located? (This is the POE location.)	Material: N/A Location:	
5. Is there point of entry (POE) or point of use (POU) treatment in use?	**Y** / N Type: Not identified	Location:

Questions	Answers
6. Are there tanks in your plumbing system (pressure tanks, gravity storage tanks)?	Y / N Unknown
7. Does the school have a filter maintenance and operation program? If so, who is responsible for this program? What is the process for adding filters?	Unknown
8. Have accessible screens or aerators on outlets that provide drinking water been cleaned? Does the school have a screen or aerator maintenance program?	Y / N N/A
9. Have there been any complaints about bad (metallic) taste? Note location(s).	Y / **N** Location:
10. Review records and consult with the public water supplier to determine whether any water samples have been taken in the building for any contaminants. If so, identify: • Name of contaminant(s) • Concentrations found • pH level Is testing done regularly at the building?	N/A
11. Other plumbing background questions include: • Are blueprints of the building available? • Are there known plumbing “dead-ends”, low use areas, existing leaks or other “problem areas”? Are renovations planned for any of the plumbing system?	Yes Not Known

Questions	Answers	
Walk-Through *These questions should be addressed during the walk-through of the facility, while Attachment C- Drinking Water Outlet Inventory is being completed.*		
1. Confirm the material of Service Line visually.		
2. Confirm the presence of POE or POU treatment.		
3. What are the potable water pipes made of in your facility? • Lead • Plastic • Galvanized Metal • Cast Iron • Copper • Other Note the water flow through the building and the areas that receive water first, and which areas receive water last.		
4. Are electrical wires grounded to Water Pipes? Note location(s).	Y / N Location:	
5. Are brass fittings, faucets, or valves used in your drinking water system? Note that most faucets are brass on the inside. Document the locations of any brass water outlet to be sampled.	Complete in "Brass" Column in Attachment C- Water Outlet Inventory. **COMPLETED**	
6. Locate all drinking water outlets (i.e. water coolers, bubblers, ice machines, kitchen/ food prep sinks, etc.) in the facility.	Complete in Attachment C-Water Outlet Inventory. **COMPLETED**	

Questions	Answers	
7. Have the brands and models of the water coolers in the school been compared to the list of recalled water coolers in the Toolkit? Recalled Drinking Water Fountains Make and Model	Y / N N/A Type	
8. Have signs of corrosion, such as frequent leaks, rust-colored water, or stained fixtures, dishes, or laundry been detected? Note the locations of water outlets.	Complete in “Signs of Corrosion” column in Attachment C- Drinking Water Outlet Inventory. **COMPLETED**	
9. Are there any outlets that are not operational and therefore out of service? Permanently? Temporarily? Permanently **Temporarily**	**Y** / N Complete “Operational Column” in Attachment C- Drinking Water Outlet Inventory. Type/ Location **CR-WF-31**	 Description **Being Replaced**

Attachment B.i: Plumbing Profile Instructions

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
The questions in this column will help you determine whether lead is likely to be a problem in your facility, and will enable you to prioritize your sampling effort.	*This column discusses the significance of possible answers to the plumbing profile questions.*
Background Information	
1. When was the original building constructed? Were any buildings or additions added to the original facility? If so, complete a separate plumbing profile for each building, addition, or wing.	Older Buildings – Through the early 1900s, lead pipes were commonly used for interior plumbing in certain parts of the country in public buildings and private homes. Plumbing installed before 1930 is more likely to contain lead than newer pipes. Between 1920 and 1950, galvanized pipes were also used for plumbing. After 1930, copper generally replaced lead as the most commonly used material for water pipes. Up until the mid- to late-1980s (until the lead-free requirements of the 1986 Safe Drinking Water Act Amendments took effect), lead solder was typically used to join these copper pipes. The efforts of your public water supplier over the years to minimize the corrosiveness of the water may have resulted in mineral deposits forming a coating on the inside of the water pipes (passivation). This coating insulates the water from the plumbing and results in decreased lead levels in water. If the coating does not exist or is disturbed, the water is in direct contact with any lead in the plumbing system. Newer Buildings – New buildings are not likely to have lead pipes in their plumbing systems, but they are very likely to have copper pipes with solder joints. Buildings constructed prior to the late 1980s, before the lead-free requirements of the 1986 Safe Drinking Water Act Amendments, may have joints made of lead solder. Buildings constructed after this period should have joints made of lead-free solders. Even if "lead-free" materials were used in new construction and/or plumbing repairs, lead leaching may occur.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
2. If built or repaired after 1986, were lead-free plumbing and solder used in accordance with the lead-free requirements of the 1986 Safe Drinking Water Act Amendments? What type of solder has been used? Was lead solder used in your plumbing system? Note the locations of lead solder.	The 1986 Amendments to the Safe Drinking Water Act banned plumbing components that contained elevated levels of lead. Lead-free solder and flux (not more than 0.2% lead) and pipe, pipe fittings, and fixtures (not more than 8% lead) must now be used. The leaching potential of lead-free (i.e., tin-antimony) solder is much less than lead solder. The leaching potential of lead-free pipe, pipe fittings, and fixtures is also less, but leaching is still possible. If lead-free materials were not used in new construction and/or plumbing repairs, elevated lead levels can be produced. If the film resulting from passivation does not exist or has not yet adequately formed, any lead that is present is in direct contact with the water. In some areas of the country, it is possible that high-lead materials were used until 1988 or perhaps even later. Your local plumbing code authority or building inspector may be able to provide guidance regarding when high-lead materials were last used on a regular basis in your area.
3. When were the most recent plumbing repairs and replacements made (note locations)?	Corrosion occurs (1) as a reaction between the water and the pipes and (2) as a reaction between the copper and solder (metal-to-metal). This latter reaction is known as galvanic corrosion, which can be vigorous in new piping. If lead solders were used in the piping or if brass faucets, valves, and fittings containing alloys of lead were installed *(see response to Walk Through Question 5 below for further discussion of brass)*, lead levels in the water may be high. After about 5 years, however, this type of reaction (galvanic corrosion) slows down and lead gets into water mainly as a result of water being corrosive. If the water is non-corrosive, passivation is likely to have occurred and to have reduced opportunities for lead to get into the water system. For these reasons, if the building (or an addition, new plumbing, or repair) is less than 5 years old and lead solder or other materials (e.g., brass faucets containing lead alloys) were used, you may have elevated lead levels. If water supplied to the building is corrosive, lead can remain a problem regardless of the plumbing's age.
4. With what materials is the service connection (the pipe that carries water to the school from the public water system's main in the street) made? Note the location where the service connection enters the building and connects to the interior plumbing. (This is the POE location)	Lead piping was often used for the service connections that join buildings to public water systems. The service connection is the pipe that carries drinking water from a public water main to a building. Some localities actually required the use of lead service connections up until the lead-free requirements of the 1986 Safe Drinking Water Act Amendments took effect. Although a protective layering of minerals may have formed on these pipes, vibrations can cause flaking of any protective build-up and, allowing lead contamination to occur.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
5. Is there point of entry (POE) or point of use (POU) treatment in use?	Are there water treatment units in your plumbing system? Treatment units could be, but are not limited to, ion exchange units, filter cartridge, reserve osmosis, etc.
6. Do you have tanks in your plumbing system (pressure tanks, gravity storage tanks)? Note the location of any tanks, and any available information about the tank; e.g., manufacturer, date of installation.	Some older tanks may contain coatings that are high in lead content. Tanks may accumulate sediment that could be flushed back into the plumbing system under certain circumstances. You may wish to contact the supplier or manufacturer to obtain information about coatings. You may also wish to hire a plumber or tank service contractor to inspect your tanks, especially gravity storage tanks that are located outside of the building.
7. Does the school have a filter maintenance and operation program? If so, who is responsible for this program? What is the process for adding filters?	A program for the maintenance and the upkeep of filters on drinking water outlets is necessary to ensure the effectiveness of the filters. Most filters recommend replacement after six months. If the filters need replacement every six months, the program will include a procedure for ensuring that every six month old filter is replaced. An individual should be responsible for ensuring that this filter maintenance program is followed. If the school would like to add a filter to a water outlet, what is the process? Does a request form have to be completed and submitted to the individual in charge of maintenance? Do all filters need to be added at a certain time of year to follow the maintenance program?
8. Do outlets that provide drinking water have accessible screens or aerators? (Standard faucets usually have screens. Many coolers and bubblers also have screens.) Note the locations. Have these screens been cleaned? Note the locations.	Lead-containing sediments that are trapped on screens can be a significant source of lead contamination. Sediments should be tested for the presence of lead, and your facility should create a routine maintenance program to clean the screens frequently. If sediment has been a reoccurring problem regular cleaning of the screens and additional investigating into why the debris is accumulating is appropriate. However, the manufacturer or water service provider should be contacted to obtain instructions.
9. Have there been any complaints about water taste (metallic, etc.) or rusty appearance? Note the locations.	Although you cannot see, taste, or smell lead dissolved in water, the presence of a metallic taste or rusty appearance may indicate corrosion and possible lead contamination.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
10. Check building files to determine whether any water samples have been taken from your building for any contaminants (also check with your public water supplier). • Name of contaminant(s)? • What concentrations of these contaminants were found? • What was the pH level of the water? • Is testing done regularly at your facility?	Lead testing may have previously been done voluntarily under the Lead Contamination Control Act. Results of analyses of general water quality, such as measures of pH, calcium hardness, and carbonate alkalinity, can provide important clues about the corrosiveness of the water. Generally, the higher the values of these parameters, the less likely it is that your water is corrosive. If you have no data from your school, your public water system should at least be able to provide information about the general water quality.
11. Other plumbing questions: • Are blueprints of the building available? • Are there known plumbing "dead• ends," low use areas, existing leaks or other "problem areas"? • Are renovations being planned for part or all of the plumbing system?	You should incorporate this information into decisions regarding sample locations and sampling protocol. You may wish to note the direction of water flow and the location of fixtures, valves, tanks, areas of sediment accumulation, areas of corrosion, etc., on a sketch or blueprint of the plumbing.
Walk-Through	
1. Confirm the material that the service line is made of visually	See Background Information Question #4.
2. Confirm the presence of POE or POU treatment.	See Background Information Question #5

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
3. Specifically, what are the potable water pipes made of in your facility (note the locations)? • Lead • Plastic • Galvanized Metal • Cast Iron • Copper • Other Note the location of the different types of pipe, if applicable, and the direction of water flow through the building. Note the areas of the building that receive water first, and which areas receive water last.	Survey your building for exposed pipes, preferably accompanied by an experienced plumber who should be able to readily identify the composition of pipes on site. Most buildings have a combination of different plumbing materials: • Lead pipes are dull gray in color and may be easily scratched by an object such as a knife or key. Lead pipes are a major source of lead contamination in drinking water. • Galvanized metal pipes are gray or silver-gray in color and are usually fitted together with threaded joints. In some instances, compounds containing lead have been used to seal the threads joining the pipes. Debris from this material, which has fallen inside the pipes, may be a source of contamination. • Copper pipes are red-brown in color. Corroded portions may show green deposits. Copper pipe joints were typically joined together with lead solders until the lead-free requirements of the 1986 Safe Drinking Water Act Amendments took effect. • Plastic pipes, especially those manufactured abroad, may contain lead. If plastic pipes are used, be sure they meet NSF International standards. *(Note: NSF International is an independent, third-party testing organization. Product listings can be obtained by visiting their Web site at http://www.nsf.org/ business/search_listings/index/asp.)*
4. Is any electrical equipment grounded to water pipes? Note the locations.	If electrical equipment, such as telephones, has been installed using water pipes as a ground, the electric current traveling through the ground wire will accelerate the corrosion of any interior plumbing containing lead. The practice should be avoided, if possible. However, if existing wires are already grounded to water pipes, the wires *should not be removed* from the pipes unless a qualified electrician installs an alternative grounding system. Check with your local building inspector on this matter. Your state or local building code may require grounding of the wires to the water pipes. Improper grounding of electrical equipment may cause severe shock.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
5. Are brass fittings, faucets, or valves used in your drinking water system? (Note: Most faucets are brass on the inside.) You may want to note the locations on a map or diagram of your facility and make extensive notes that would facilitate future analysis of lead sample results.	Brass fittings, faucets, and valves are golden yellow in color, similar to copper in appearance, or are plated with chrome. Brass is composed primarily of two metals, copper and zinc. Most brasses contain lead ranging from 2 percent to 8 percent. That lead can contaminate the water contact surface when it is smeared on the machined surfaces during production. After 1996, brass fittings installed in drinking water outlets such as faucets and water coolers must meet NSF standards for lead content. While this percentage is considered lead-free under the 1986 Safe Drinking Water Act Amendments, some contamination problems still may occur. Older brass faucets may contain higher percentages of lead and lead solder in their interior construction and pose contamination problems. Note that your state or local government may have imposed this standard prior to 1988. The degree to which lead will leach from brass products containing alloys with less than 8 percent lead is dependent upon the corrosiveness of the water and the manufacturing process used to develop the product. A study revealed that fabricated faucets tend to contribute less lead to the water than faucets manufactured by the permanent mold process, regardless of the amount of lead in the alloy. In response to a requirement of the 1996 SDWA, EPA worked with the plumbing industry and NSF International to develop a voluntary industry standard that is designed to minimize the amounts of lead being leached from these products. This standard is NSF/ANSI Standard 61, Section 9. Since 1998, all plumbing fixtures for use as drinking water supply must meet this standard. You should require NSF/ ANSI 61 certification on all drinking water system products purchased. Include a copy of the NSF/ ANSI 61 certificate as a requirement on your purchase orders. The distributor or manufacturer can provide you with a list of certified products. You should require NSF/ANSI 61 certification on all drinking water system products used in new construction and inform your architects and revise your building specifications.
6. How many of the following outlets provide water for consumption? Note the locations. • Water Coolers • Bubblers • Ice Makers • Kitchen Taps • Drinking Fountains or Taps	In addition to lead components in the plumbing system, lead solders or lead in the brass fittings and valves used in some taps, bubblers, and refrigerated water coolers may be sources of lead. It is important to identify the locations of all such drinking water outlets. Faucets in restrooms should not be used to obtain water for drinking. Although they may be adequate for washing hands, they may not be appropriate for drinking purposes. You may consider posting “do not drink” signs.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
7. Has your school checked the brands and models of water coolers and compared them to the list of recalled water coolers in Appendix H.i Note the locations of any recalled coolers.	Water coolers may be a major source of lead contamination. The Federal Consumer Product Safety Commission negotiated an agreement with Halsey Taylor through a consent order agreement published in June 1990 to provide a replacement or refund program that addresses all the water coolers listed by EPA as having lead-lined tanks. Halsey Taylor was the only company identified by EPA as manufacturing some water coolers with lead-lined tanks. Additionally, some coolers manufactured by EBCO had a bubbler valve and one soldered joint that contained lead. See Attachment H.i of this document for a summary of EPA's list of water coolers found to contain lead. Use the list to help prioritize your sampling. If your water cooler is listed as having a lead-lined tank, you should not use the water for drinking, and you should remove the cooler immediately as these coolers pose the highest risk of contamination.
8. Are there any signs of corrosion, such as frequent leaks, rust-colored water, or stained dishes or laundry? Note the locations.	Frequent leaks, rust-colored water, and stains on fixtures, dishes, and laundry are signs of corrosive water. Blue-green deposits on pipes and sinks indicate copper corrosion; brown stains result from the corrosion of iron. Where such signs occur, high levels of lead, copper, and iron may be present in the water. Lead can accumulate with iron, which can form sediments that are hard to remove.
9. Are there any outlets that are not operational and therefore out of service? Permanently? Temporarily?	Permanently out of service water outlets are outlets that are no longer being used and the facility plans to decommission in the future. Temporarily out of service water outlets are outlets that require repair or replacement and will be put back in service once they are operational.

Attachment B – Plumbing Profile

***Note**: Complete for each school. For additional information see the USEPA publication, "The 3Ts for Reducing Lead in Drinking Water in Schools"*

Name of School: ____Holy Spirit_____ Grade Levels: _____

Address: ___970 Suburbon Avenue, Union___

Individual school project officer Signature: _____ Date: _____

Questions	Answers	
Background Information		
1. What year was the original building constructed? Were any buildings or additions added to the original facility?		
2. If the building was constructed or repaired after 1986, was lead-free plumbing and solder utilized? What type of solder was used? Document all locations where lead solder was used.		
3. Where are the most recent plumbing repairs and replacements?	Location: Facility Room	Description: Water Cooler added
4. With what materials is the service connection (the pipe that carries water to the school from the public water system's main in the street) made? Where is the Service Line located? (This is the POE location.)	Material: Location:	
5. Is there point of entry (POE) or point of use (POU) treatment in use?	Y / N Type:	Location:

Questions	Answers
6. Are there tanks in your plumbing system (pressure tanks, gravity storage tanks)?	Y / N
7. Does the school have a filter maintenance and operation program? If so, who is responsible for this program? What is the process for adding filters?	
8. Have accessible screens or aerators on outlets that provide drinking water been cleaned? Does the school have a screen or aerator maintenance program?	Y / N
9. Have there been any complaints about bad (metallic) taste? Note location(s).	Y / N Location:
10. Review records and consult with the public water supplier to determine whether any water samples have been taken in the building for any contaminants. If so, identify: • Name of contaminant(s) • Concentrations found • pH level Is testing done regularly at the building?	
11. Other plumbing background questions include: • Are blueprints of the building available? • Are there known plumbing “dead-ends”, low use areas, existing leaks or other “problem areas”? Are renovations planned for any of the plumbing system?	

Questions	Answers	
Walk-Through *These questions should be addressed during the walk-through of the facility, while Attachment C- Drinking Water Outlet Inventory is being completed.*		
1. Confirm the material of Service Line visually.		
2. Confirm the presence of POE or POU treatment.		
3. What are the potable water pipes made of in your facility? • Lead • Plastic • Galvanized Metal • Cast Iron • Copper • Other Note the water flow through the building and the areas that receive water first, and which areas receive water last.		
4. Are electrical wires grounded to Water Pipes? Note location(s).	Y / N Location:	
5. Are brass fittings, faucets, or valves used in your drinking water system? Note that most faucets are brass on the inside. Document the locations of any brass water outlet to be sampled.	Complete in “Brass” Column in Attachment C- Water Outlet Inventory.	
6. Locate all drinking water outlets (i.e. water coolers, bubblers, ice machines, kitchen/ food prep sinks, etc.) in the facility.	Complete in Attachment C-Water Outlet Inventory.	

Questions	Answers	
7. Have the brands and models of the water coolers in the school been compared to the list of recalled water coolers in the Toolkit? Recalled Drinking Water Fountains Make and Model	Y / N Type	
8. Have signs of corrosion, such as frequent leaks, rust-colored water, or stained fixtures, dishes, or laundry been detected? Note the locations of water outlets.	Complete in “Signs of Corrosion” column in Attachment C- Drinking Water Outlet Inventory.	
9. Are there any outlets that are not operational and therefore out of service? Permanently? Temporarily? Permanently Temporarily	Y / N Complete “Operational Column” in Attachment C- Drinking Water Outlet Inventory. Type/ Location	Description

Attachment B.i: Plumbing Profile Instructions

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
The questions in this column will help you determine whether lead is likely to be a problem in your facility, and will enable you to prioritize your sampling effort.	*This column discusses the significance of possible answers to the plumbing profile questions.*
Background Information	
1. When was the original building constructed? Were any buildings or additions added to the original facility? If so, complete a separate plumbing profile for each building, addition, or wing.	Older Buildings – Through the early 1900s, lead pipes were commonly used for interior plumbing in certain parts of the country in public buildings and private homes. Plumbing installed before 1930 is more likely to contain lead than newer pipes. Between 1920 and 1950, galvanized pipes were also used for plumbing. After 1930, copper generally replaced lead as the most commonly used material for water pipes. Up until the mid- to late-1980s (until the lead-free requirements of the 1986 Safe Drinking Water Act Amendments took effect), lead solder was typically used to join these copper pipes. The efforts of your public water supplier over the years to minimize the corrosiveness of the water may have resulted in mineral deposits forming a coating on the inside of the water pipes (passivation). This coating insulates the water from the plumbing and results in decreased lead levels in water. If the coating does not exist or is disturbed, the water is in direct contact with any lead in the plumbing system. Newer Buildings – New buildings are not likely to have lead pipes in their plumbing systems, but they are very likely to have copper pipes with solder joints. Buildings constructed prior to the late 1980s, before the lead-free requirements of the 1986 Safe Drinking Water Act Amendments, may have joints made of lead solder. Buildings constructed after this period should have joints made of lead-free solders. Even if "lead-free" materials were used in new construction and/or plumbing repairs, lead leaching may occur.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
2. If built or repaired after 1986, were lead-free plumbing and solder used in accordance with the lead-free requirements of the 1986 Safe Drinking Water Act Amendments? What type of solder has been used? Was lead solder used in your plumbing system? Note the locations of lead solder.	The 1986 Amendments to the Safe Drinking Water Act banned plumbing components that contained elevated levels of lead. Lead-free solder and flux (not more than 0.2% lead) and pipe, pipe fittings, and fixtures (not more than 8% lead) must now be used. The leaching potential of lead-free (i.e., tin-antimony) solder is much less than lead solder. The leaching potential of lead-free pipe, pipe fittings, and fixtures is also less, but leaching is still possible. If lead-free materials were not used in new construction and/or plumbing repairs, elevated lead levels can be produced. If the film resulting from passivation does not exist or has not yet adequately formed, any lead that is present is in direct contact with the water. In some areas of the country, it is possible that high-lead materials were used until 1988 or perhaps even later. Your local plumbing code authority or building inspector may be able to provide guidance regarding when high-lead materials were last used on a regular basis in your area.
3. When were the most recent plumbing repairs and replacements made (note locations)?	Corrosion occurs (1) as a reaction between the water and the pipes and (2) as a reaction between the copper and solder (metal-to-metal). This latter reaction is known as galvanic corrosion, which can be vigorous in new piping. If lead solders were used in the piping or if brass faucets, valves, and fittings containing alloys of lead were installed *(see response to Walk Through Question 5 below for further discussion of brass)*, lead levels in the water may be high. After about 5 years, however, this type of reaction (galvanic corrosion) slows down and lead gets into water mainly as a result of water being corrosive. If the water is non-corrosive, passivation is likely to have occurred and to have reduced opportunities for lead to get into the water system. For these reasons, if the building (or an addition, new plumbing, or repair) is less than 5 years old and lead solder or other materials (e.g., brass faucets containing lead alloys) were used, you may have elevated lead levels. If water supplied to the building is corrosive, lead can remain a problem regardless of the plumbing's age.
4. With what materials is the service connection (the pipe that carries water to the school from the public water system's main in the street) made? Note the location where the service connection enters the building and connects to the interior plumbing. (This is the POE location)	Lead piping was often used for the service connections that join buildings to public water systems. The service connection is the pipe that carries drinking water from a public water main to a building. Some localities actually required the use of lead service connections up until the lead-free requirements of the 1986 Safe Drinking Water Act Amendments took effect. Although a protective layering of minerals may have formed on these pipes, vibrations can cause flaking of any protective build-up and, allowing lead contamination to occur.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
5. Is there point of entry (POE) or point of use (POU) treatment in use?	Are there water treatment units in your plumbing system? Treatment units could be, but are not limited to, ion exchange units, filter cartridge, reserve osmosis, etc.
6. Do you have tanks in your plumbing system (pressure tanks, gravity storage tanks)? Note the location of any tanks, and any available information about the tank; e.g., manufacturer, date of installation.	Some older tanks may contain coatings that are high in lead content. Tanks may accumulate sediment that could be flushed back into the plumbing system under certain circumstances. You may wish to contact the supplier or manufacturer to obtain information about coatings. You may also wish to hire a plumber or tank service contractor to inspect your tanks, especially gravity storage tanks that are located outside of the building.
7. Does the school have a filter maintenance and operation program? If so, who is responsible for this program? What is the process for adding filters?	A program for the maintenance and the upkeep of filters on drinking water outlets is necessary to ensure the effectiveness of the filters. Most filters recommend replacement after six months. If the filters need replacement every six months, the program will include a procedure for ensuring that every six month old filter is replaced. An individual should be responsible for ensuring that this filter maintenance program is followed. If the school would like to add a filter to a water outlet, what is the process? Does a request form have to be completed and submitted to the individual in charge of maintenance? Do all filters need to be added at a certain time of year to follow the maintenance program?
8. Do outlets that provide drinking water have accessible screens or aerators? (Standard faucets usually have screens. Many coolers and bubblers also have screens.) Note the locations. Have these screens been cleaned? Note the locations.	Lead-containing sediments that are trapped on screens can be a significant source of lead contamination. Sediments should be tested for the presence of lead, and your facility should create a routine maintenance program to clean the screens frequently. If sediment has been a reoccurring problem regular cleaning of the screens and additional investigating into why the debris is accumulating is appropriate. However, the manufacturer or water service provider should be contacted to obtain instructions.
9. Have there been any complaints about water taste (metallic, etc.) or rusty appearance? Note the locations.	Although you cannot see, taste, or smell lead dissolved in water, the presence of a metallic taste or rusty appearance may indicate corrosion and possible lead contamination.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
10. Check building files to determine whether any water samples have been taken from your building for any contaminants (also check with your public water supplier). • Name of contaminant(s)? • What concentrations of these contaminants were found? • What was the pH level of the water? • Is testing done regularly at your facility?	Lead testing may have previously been done voluntarily under the Lead Contamination Control Act. Results of analyses of general water quality, such as measures of pH, calcium hardness, and carbonate alkalinity, can provide important clues about the corrosiveness of the water. Generally, the higher the values of these parameters, the less likely it is that your water is corrosive. If you have no data from your school, your public water system should at least be able to provide information about the general water quality.
11. Other plumbing questions: • Are blueprints of the building available? • Are there known plumbing "dead• ends," low use areas, existing leaks or other "problem areas"? • Are renovations being planned for part or all of the plumbing system?	You should incorporate this information into decisions regarding sample locations and sampling protocol. You may wish to note the direction of water flow and the location of fixtures, valves, tanks, areas of sediment accumulation, areas of corrosion, etc., on a sketch or blueprint of the plumbing.
Walk-Through	
1. Confirm the material that the service line is made of visually	See Background Information Question #4.
2. Confirm the presence of POE or POU treatment.	See Background Information Question #5

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
3. Specifically, what are the potable water pipes made of in your facility (note the locations)? • Lead • Plastic • Galvanized Metal • Cast Iron • Copper • Other Note the location of the different types of pipe, if applicable, and the direction of water flow through the building. Note the areas of the building that receive water first, and which areas receive water last.	Survey your building for exposed pipes, preferably accompanied by an experienced plumber who should be able to readily identify the composition of pipes on site. Most buildings have a combination of different plumbing materials: • Lead pipes are dull gray in color and may be easily scratched by an object such as a knife or key. Lead pipes are a major source of lead contamination in drinking water. • Galvanized metal pipes are gray or silver-gray in color and are usually fitted together with threaded joints. In some instances, compounds containing lead have been used to seal the threads joining the pipes. Debris from this material, which has fallen inside the pipes, may be a source of contamination. • Copper pipes are red-brown in color. Corroded portions may show green deposits. Copper pipe joints were typically joined together with lead solders until the lead-free requirements of the 1986 Safe Drinking Water Act Amendments took effect. • Plastic pipes, especially those manufactured abroad, may contain lead. If plastic pipes are used, be sure they meet NSF International standards. *(Note: NSF International is an independent, third-party testing organization. Product listings can be obtained by visiting their Web site at http://www.nsf.org/ business/search_listings/index/asp.)*
4. Is any electrical equipment grounded to water pipes? Note the locations.	If electrical equipment, such as telephones, has been installed using water pipes as a ground, the electric current traveling through the ground wire will accelerate the corrosion of any interior plumbing containing lead. The practice should be avoided, if possible. However, if existing wires are already grounded to water pipes, the wires *should not be removed* from the pipes unless a qualified electrician installs an alternative grounding system. Check with your local building inspector on this matter. Your state or local building code may require grounding of the wires to the water pipes. Improper grounding of electrical equipment may cause severe shock.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
5. Are brass fittings, faucets, or valves used in your drinking water system? (Note: Most faucets are brass on the inside.) You may want to note the locations on a map or diagram of your facility and make extensive notes that would facilitate future analysis of lead sample results.	Brass fittings, faucets, and valves are golden yellow in color, similar to copper in appearance, or are plated with chrome. Brass is composed primarily of two metals, copper and zinc. Most brasses contain lead ranging from 2 percent to 8 percent. That lead can contaminate the water contact surface when it is smeared on the machined surfaces during production. After 1996, brass fittings installed in drinking water outlets such as faucets and water coolers must meet NSF standards for lead content. While this percentage is considered lead-free under the 1986 Safe Drinking Water Act Amendments, some contamination problems still may occur. Older brass faucets may contain higher percentages of lead and lead solder in their interior construction and pose contamination problems. Note that your state or local government may have imposed this standard prior to 1988. The degree to which lead will leach from brass products containing alloys with less than 8 percent lead is dependent upon the corrosiveness of the water and the manufacturing process used to develop the product. A study revealed that fabricated faucets tend to contribute less lead to the water than faucets manufactured by the permanent mold process, regardless of the amount of lead in the alloy. In response to a requirement of the 1996 SDWA, EPA worked with the plumbing industry and NSF International to develop a voluntary industry standard that is designed to minimize the amounts of lead being leached from these products. This standard is NSF/ANSI Standard 61, Section 9. Since 1998, all plumbing fixtures for use as drinking water supply must meet this standard. You should require NSF/ ANSI 61 certification on all drinking water system products purchased. Include a copy of the NSF/ ANSI 61 certificate as a requirement on your purchase orders. The distributor or manufacturer can provide you with a list of certified products. You should require NSF/ANSI 61 certification on all drinking water system products used in new construction and inform your architects and revise your building specifications.
6. How many of the following outlets provide water for consumption? Note the locations. • Water Coolers • Bubblers • Ice Makers • Kitchen Taps • Drinking Fountains or Taps	In addition to lead components in the plumbing system, lead solders or lead in the brass fittings and valves used in some taps, bubblers, and refrigerated water coolers may be sources of lead. It is important to identify the locations of all such drinking water outlets. Faucets in restrooms should not be used to obtain water for drinking. Although they may be adequate for washing hands, they may not be appropriate for drinking purposes. You may consider posting “do not drink” signs.

Plumbing Profile Questions	What Your Answers to the Plumbing Profile Questions Mean
7. Has your school checked the brands and models of water coolers and compared them to the list of recalled water coolers in Appendix H.i Note the locations of any recalled coolers.	Water coolers may be a major source of lead contamination. The Federal Consumer Product Safety Commission negotiated an agreement with Halsey Taylor through a consent order agreement published in June 1990 to provide a replacement or refund program that addresses all the water coolers listed by EPA as having lead-lined tanks. Halsey Taylor was the only company identified by EPA as manufacturing some water coolers with lead-lined tanks. Additionally, some coolers manufactured by EBCO had a bubbler valve and one soldered joint that contained lead. See Attachment H.i of this document for a summary of EPA's list of water coolers found to contain lead. Use the list to help prioritize your sampling. If your water cooler is listed as having a lead-lined tank, you should not use the water for drinking, and you should remove the cooler immediately as these coolers pose the highest risk of contamination.
8. Are there any signs of corrosion, such as frequent leaks, rust-colored water, or stained dishes or laundry? Note the locations.	Frequent leaks, rust-colored water, and stains on fixtures, dishes, and laundry are signs of corrosive water. Blue-green deposits on pipes and sinks indicate copper corrosion; brown stains result from the corrosion of iron. Where such signs occur, high levels of lead, copper, and iron may be present in the water. Lead can accumulate with iron, which can form sediments that are hard to remove.
9. Are there any outlets that are not operational and therefore out of service? Permanently? Temporarily?	Permanently out of service water outlets are outlets that are no longer being used and the facility plans to decommission in the future. Temporarily out of service water outlets are outlets that require repair or replacement and will be put back in service once they are operational.

Attachment C – Drinking Water Outlet Inventory

Name of School: Hillcrest Academy North Address: 2630 Plainfield Avenue, Scotch Plains, NJ

Grade Levels: __ Year School Constructed: _____ Renovated/Additions: _____

Individual school project officer Name/Signature: _____ Date Completed: _____

#[1]	Type	Location	Code	Operational[2] (Y/N)	Signs of Corrosion[3] (Y/N)	Filter[4] (Y/N)	Brass Fittings, Faucets or valves? (Y/N)	Aerator/ Screen (Y/N)	Motion Activated (Y/N)	Chiller (Y/N)	Water Cooler		Comments
											Make	Model	
1	POE	Basement near main water shut off	HN-POE	Y	N	N	N	N	N	N	NA	NA	Spigot near main water shutoff
2	WF	Next to ladies' room	HN-WF-01	Y	N	N	N	N	N	N	ELKAY	EHFSA8-1B	Temporary OFF
3	WF	Next to men's room	HN-WF-02	Y	N	N	N	N	N	N	ELKAY	EHFSA8-1B	Temporary OFF
4	WC	Staff Room	HN-WC-03	Y	N	Y	N	N	N	Y	Pure Water Tech.	ID#62289	
5	S	Nurse's Office	HN-S-04	Y	Y	N	Y	N	N	N			

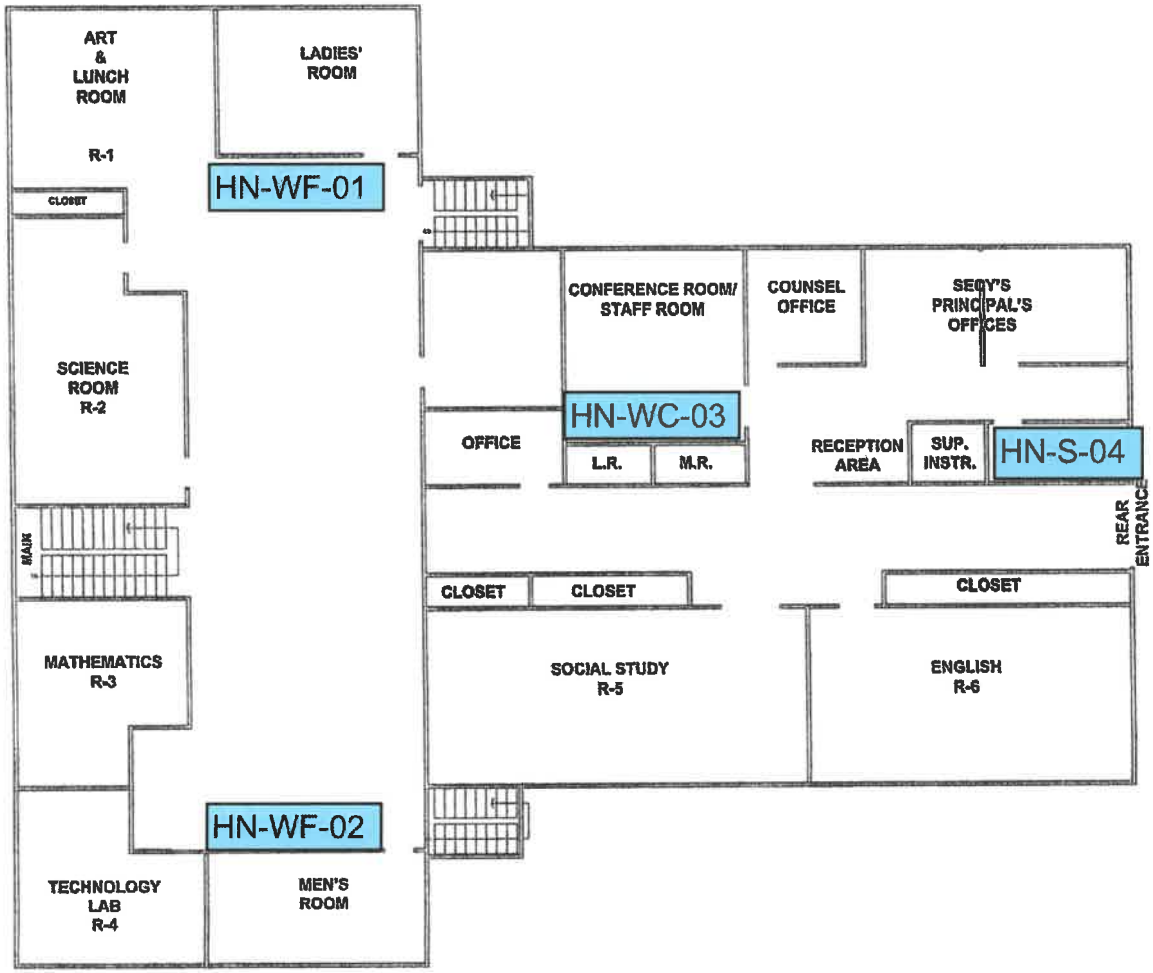
[1] Number outlets starting at the closest outlet to the Point of Entry (POE).
[2] Document if permanently or temporarily out of service on the Attachment B- Plumbing Profile.
[3] Signs of corrosion detected, such as but not limited to frequent leaks, rust-colored water, or stained fixtures, dishes, or laundry.
[4] Document on Attachment D- Filter Inventory.

Drinking Water Outlet Locations Union County Educational Services
Hillcrest Academy North
2630 Plainfield Avenue, Scotch Plains, NJ

Hillcrest Academy – North - Basement

Drinking Water Outlet Locations Union County Educational Services
Hillcrest Academy North
2630 Plainfield Avenue, Scotch Plains, NJ

HILLCREST ACADEMY – NORTH
FIRST FLOOR



Attachment C – Drinking Water Outlet Inventory

Name of School: Crossroads School Address: 45 Cardinal Drive, Westfield, NJ

Grade Levels: _ Year School Constructed: _____ Renovated/Additions: _____

Individual school project officer Name/Signature: _____ Date Completed: _____

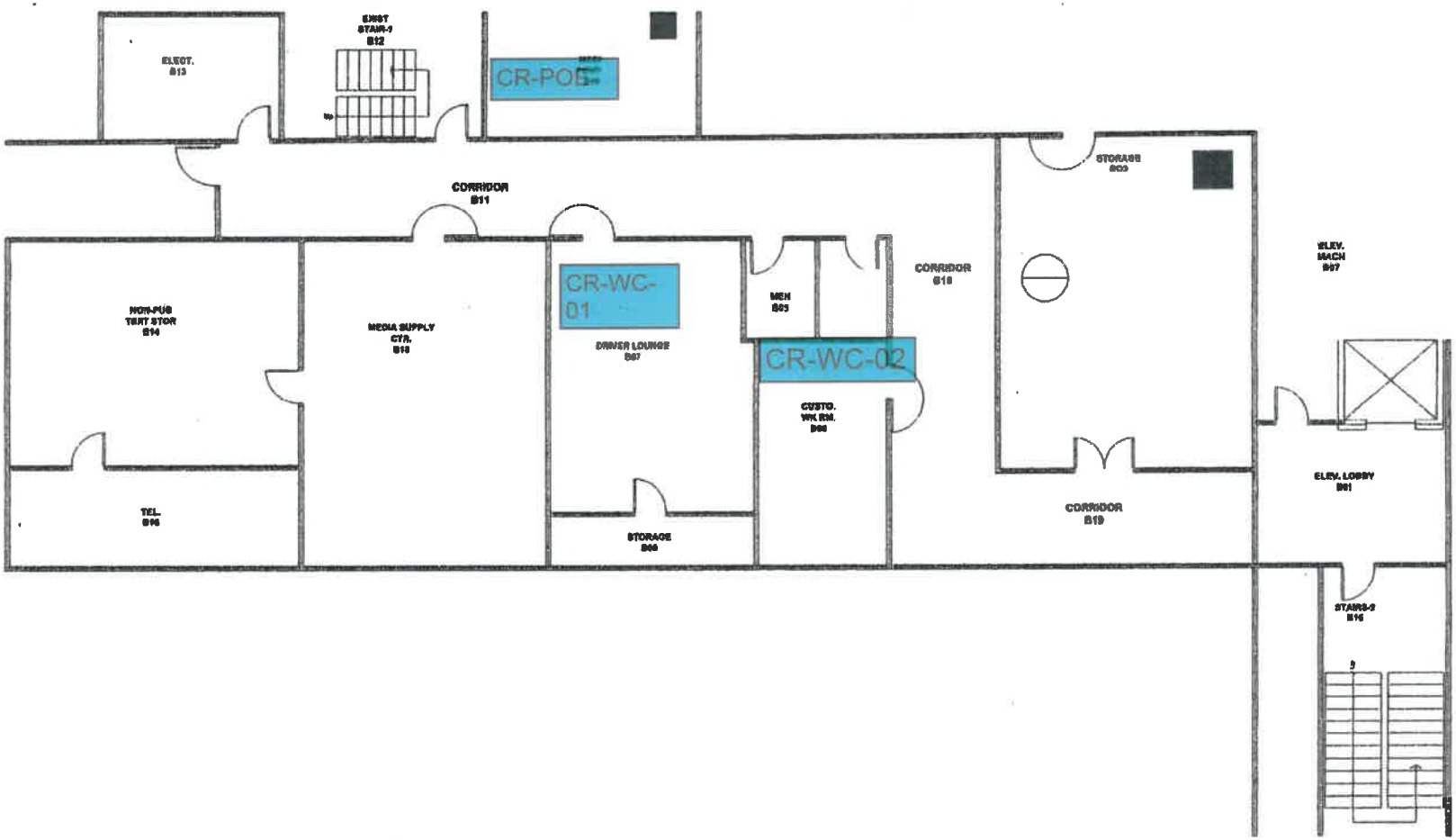
#[1]	Type	Location	Code	Operational[2] (Y/N)	Signs of Corrosion[3] (Y/N)	Filter[4] (Y/N)	Brass Fittings, Faucets or valves? (Y/N)	Aerator/ Screen (Y/N)	Motion Activated (Y/N)	Chiller (Y/N)	Water Cooler		Comments
											Make	Model	
1	POE	Basement Boiler Room-B09	CR-POE	Y	N	N	N	N	N	N	NA	NA	Overhead spigot near water main
2	WC	B07	CR-WC-01	Y	N	N	N	N	N	N	NA	NA	Basement break room
3	WC	B02	CR-WC-02	Y	N	Y	N	N	N	Y	Pure Water	ID#62294	
4	Sink	Rm 111	CR-S-03	Y	N	N	N	N	N	N	NA	NA	
5	Sink	RM111/110 BR	CR-S-04	Y	N	N	N	N	N	N	NA	NA	Bathroom
6	Sink	Rm 110	CR-S-05	Y	N	N	N	N	N	N	NA	NA	
7	WC	Kitchen RM118	CR-WC-06	Y	N	Y	N	N	N	Y	Pure Water	ID#62296	
8	Sink	Rm 109	CR-S-07	Y	N	N	N	N	N	N	NA	NA	
9	Sink	RM 109/108 BR	CR-S-08	Y	N	N	N	N	N	N	NA	NA	
10	Sink	RM 108	CR-S-09	Y	N	N	N	N	N	N	NA	NA	
11	Sink	RM 107	CR-S-10	Y	N	N	N	N	N	N	NA	NA	

[1] Number outlets starting at the closest outlet to the Point of Entry (POE).
[2] Document if permanently or temporarily out of service on the Attachment B- Plumbing Profile.
[3] Signs of corrosion detected, such as but not limited to frequent leaks, rust-colored water, or stained fixtures, dishes, or laundry.
[4] Document on Attachment D- Filter Inventory.

12	Sink	Bathroom Near RM 107	CR-S-11	Y	N	N	N	N	N	N	NA	NA	bathroom
13	Sink	Rm 106	CR-S-12	Y	N	N	N	N	N	N	NA	NA	
14	Sink	Rm 105	CR-S-13	Y	N	N	N	N	N	N	NA	NA	
15	Sink	Rm 104	CR-S-14	Y	N	N	N	N	N	N	NA	NA	
16	WF	Rm 104	CR-WF-14	Y	N	N	N	N	N	N	NA	NA	OFF
17	Sink	Rm104/103 BR	CR-S-15	Y	N	N	N	N	N	N	NA	NA	
18	Sink	RM 103	CR-S-16	Y	N	N	N	N	N	N	NA	NA	
19	WF	RM 103	CR-WF-17	Y	N	N	N	N	N	N	NA	NA	
20	Sink	Rm 102	CR-S-18	Y	N	N	N	N	N	N	NA	NA	
21	Sink	RM102/101 BR	CR-S-19	Y	N	N	N	N	N	N	NA	NA	
22	Sink	Rm 101	CR-S-20	Y	N	N	N	N	N	N	NA	NA	
23	WF	Rm 101	CR-WF-21	Y	N	N	N	N	N	N	NA	NA	
24	Sink	Nurse RM 114	CR-S-22	Y	N	N	N	N	N	N	NA	NA	Locked
25	Sink	Men's BR	CR-S-23	Y	N	N	N	N	N	N	NA	NA	
26	Sink	Women's BR	CR-S-24	Y	N	N	N	N	N	N	NA	NA	
27	Sink	Faculty RM 219	CR-S-25	Y	N	N	N	N	N	N	NA	NA	
28	WC	Kitchen Rm 222	CR-WC-26	Y	N	Y	N	N	N	Y	Pure Water		
29	Sink	Kitchen Rm 222	CR-S-27	Y	N	N	N	N	N	N	NA	NA	
30	Sink	Rm 222 BR	CR-S-28	Y	N	N	N	N	N	N	NA	NA	
31	WC	Board Room	CR-WC-29	Y	N	Y	N	N	N	Y	Pure Water		
32	Sink	Board Room	CR-S-30	Y	N	N	N	N	N	N	NA	NA	
33	WF	Across RM 207	CR-WF-31	N	Y	N	N	N	N	Y	Halsey Taylor		Temporality off

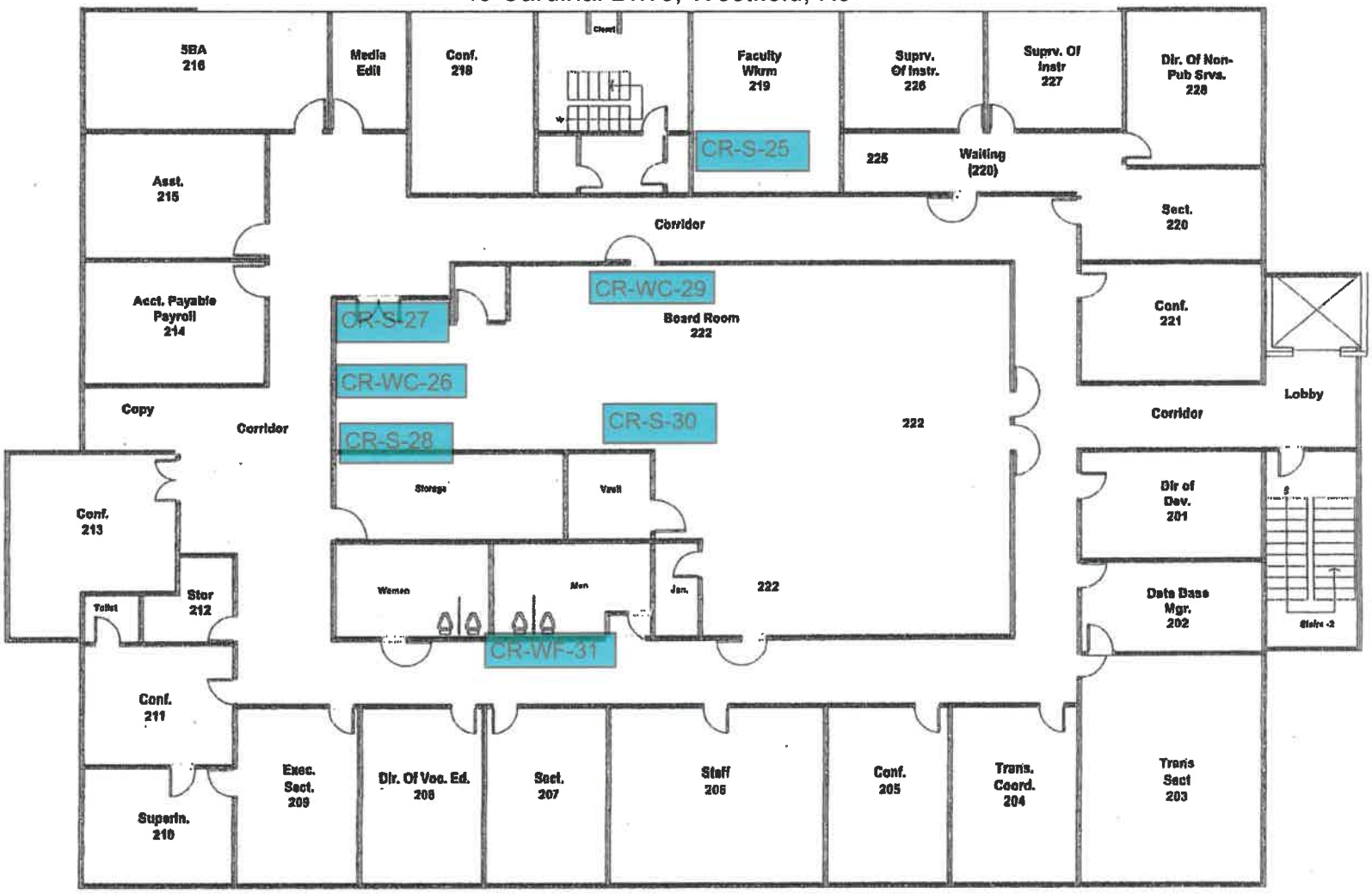
Drinking Water Outlet Locations
Union County Educational Services
Crossroads School
45 Cardinal Drive, Westfield, NJ

Drinking Water Outlet Locations
Union County Educational Services
Crossroads School
45 Cardinal Drive, Westfield, NJ



Administrative Floor
Union County Educational Services Commission – 2nd Floor

Drinking Water Outlet Locations
Union County Educational Services
Crossroads School
45 Cardinal Drive, Westfield, NJ



Attachment C – Drinking Water Outlet Inventory

Name of School: Holy Spirit Address: 970 Suburbon Avenue, Union

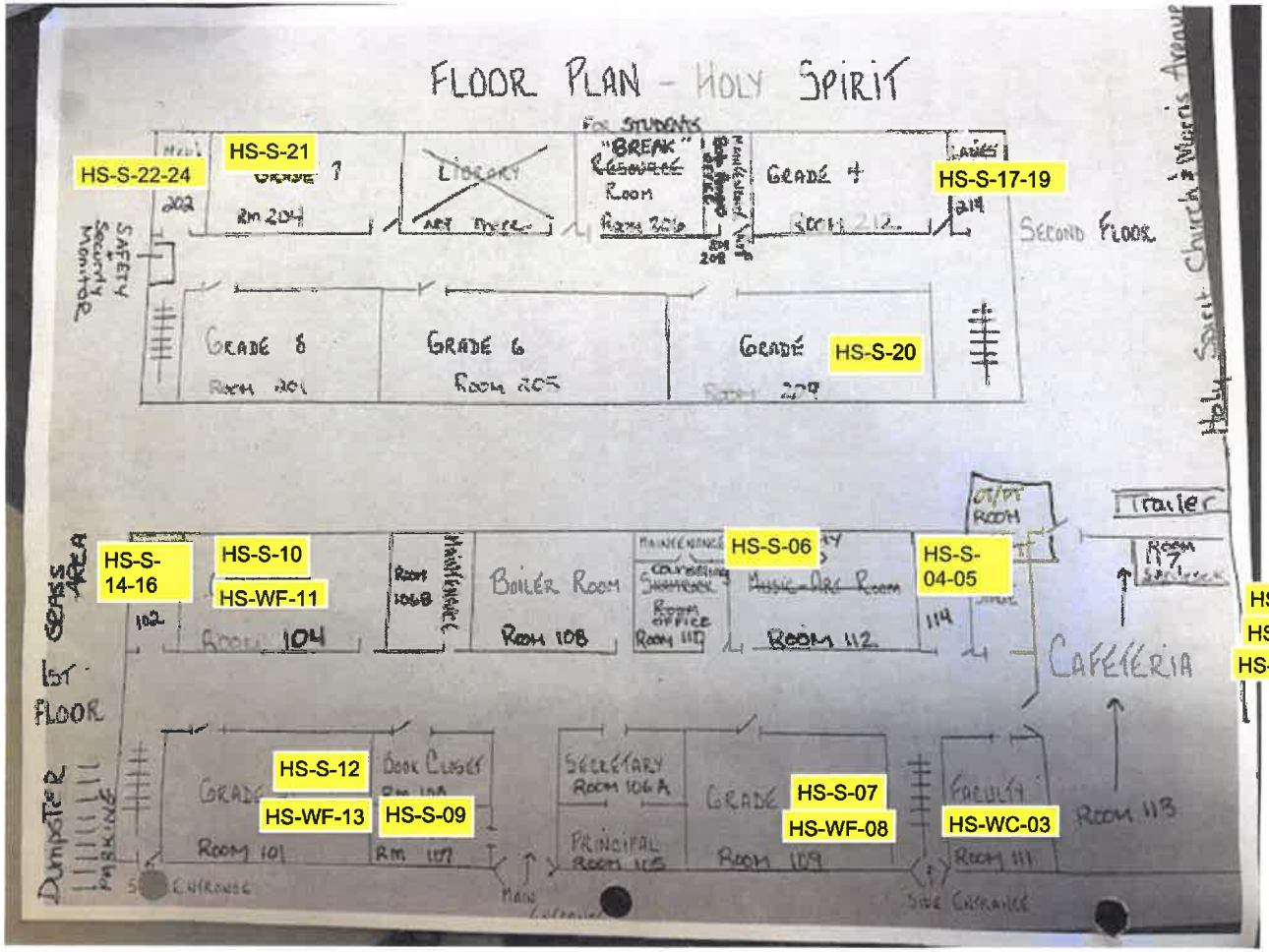
Grade Levels: __ Year School Constructed: _____ Renovated/Additions: _____

Individual school project officer Name/Signature: _____ Date Completed: _____

#[1]	Type	Location	Code	Operational[2] (Y/N)	Signs of Corrosion[3] (Y/N)	Filter[4] (Y/N)	Brass Fittings, Faucets or valves? (Y/N)	Aerator/ Screen (Y/N)	Motion Activated (Y/N)	Chiller (Y/N)	Water Cooler		Comments
											Make	Model	
1	POE	Kitchen	HS-POE	Y	Y	N	Y	N	N	N	NA	NA	Kitchen Double Sink
2	Ice Machine	Kitchen	HS-IM-01	Y	N	N	N	N	N	Y	Manitowoc		
3	Coffee maker	Kitchen	HS-CM-02	Y	N	Y	N	N	N	N	Easy Clear	EQ-TL-1	
4	Water Cooler	Faculty Rm 111	HS-WC-03	Y	N	Y	N	N	N	Y	Water Pure	ID#62722	
5	Sink	Ladies BR	HS-S-04	Y	Y	N	Y	N	N	N	NA	NA	
6	Sink	Ladies BR	HS-S-05	Y	Y	N	Y	N	N	N	NA	NA	
7	Sink	Room 112	HS-S-06	Y	Y	N	Y	N	N	N	NA	NA	
8	Sink	Room 109	HS-S-07	Y	Y	N	Y	N	N	N	NA	NA	
9	Water Fountain	Room 109	HS-WF-08	Y	Y	N	Y	N	N	N	NA	NA	
10	Sink	Nurse's BR	HS-S-09	Y	Y	N	Y	N	N	N	NA	NA	

[1] Number outlets starting at the closest outlet to the Point of Entry (POE).
[2] Document if permanently or temporarily out of service on the Attachment B- Plumbing Profile.
[3] Signs of corrosion detected, such as but not limited to frequent leaks, rust-colored water, or stained fixtures, dishes, or laundry.
[4] Document on Attachment D- Filter Inventory.

11	Sink	Room 104	HS-S-10	Y	Y	N	Y	N	N	N	NA	NA	
12	WF	Room 104	HS-WF-11	Y	Y	N	Y	N	N	N	NA	NA	
13	Sink	Room 101	HS-S-12	Y	Y	N	Y	N	N	N	NA	NA	
14	Water Fountain	Room 101	HS-WF-13	Y	Y	N	Y	N	N	N	NA	NA	
15	Sink	Men's BR	HS-S-14	Y	Y	N	Y	N	N	N	NA	NA	
16	Sink	Men's BR	HS-S-15	Y	Y	N	Y	N	N	N	NA	NA	Broken
17	Sink	Men's BR	HS-S-16	Y	Y	N	Y	N	N	N	NA	NA	
18	Sink	Ladies BR	HS-S-17	Y	Y	N	Y	N	N	N	NA	NA	2nd Floor
19	Sink	Ladies BR	HS-S-18	Y	Y	N	Y	N	N	N	NA	NA	2nd Floor
20	Sink	Ladies BR	HS-S-19	Y	Y	N	Y	N	N	N	NA	NA	2nd Floor
21	Sink	Room 209	HS-S-20	Y	Y	N	Y	N	N	N	NA	NA	2nd Floor
22	Sink	Room 204	HS-S-21	Y	Y	N	Y	N	N	N	NA	NA	2nd Floor
23	Sink	Men's BR	HS-S-22	Y	Y	N	Y	N	N	N	NA	NA	2nd Floor
24	Sink	Men's BR	HS-S-23	Y	Y	N	Y	N	N	N	NA	NA	2nd Floor
25	Sink	Men's BR	HS-S-24	Y	Y	N	Y	N	N	N	NA	NA	2nd Floor


FLOOR PLAN - HOLY SPIRIT
HS-S-22-24
HS-S-21
HS-S-17-19
HS-S-20
HS-S-14-16
HS-S-10
HS-WF-11
HS-S-06
HS-S-04-05
HS-S-12
HS-WF-13
HS-S-09
HS-S-07
HS-WF-08
HS-WC-03
Kitchen
HS-POE
HS-IM-01
HS-CM-02
Second Floor
1st Floor
Boiler Room
Room 108
Room 112
Cafeteria
Room 113
Trailer
Room 104
Room 101
Room 109
Room 111
Principal Room 105
Secretary Room 106A
Grade 4
Grade 6
Grade 8
Holy Spirit Church & Morris Avenue

Attachment D - Filter Inventory

(Complete for each school)

Name of School: Hillcrest Academy North Grade Levels: _ ____

Address: 2630 Plainfield Avenue, Scotch Plains, NJ

Individual School Project Officer Signature: _____ Date: _____

Sample Location / Code	Brand	Type (Make & Model)	Date Installed or Replaced	Replacement Frequency	NSF Certified for Lead Reduction Y/N
HN-WC-03	PureWaterTech	ID:62722	–	–	Y

Attachment D - Filter Inventory

(Complete for each school)

Name of School: Crossroads School Grade Levels: _____

Address: 45 Cardinal Drive, Westfield, NJ

Individual School Project Officer Signature: _____ Date: _____

Sample Location / Code	Brand	Type (Make & Model)	Date Installed or Replaced	Replacement Frequency	NSF Certified for Lead Reduction Y/N
CR-WC-01	PureWater	ID# 62294	-	-	Y
CR-WC-02	PureWater	ID# 62292	-	-	Y
CR-WC-06	PureWater	ID# 62296	-	-	Y
CR-WC-26	PureWater	ID# 62293	-	-	Y
CR-WC-29	PureWater	ID# 62291	-	-	Y

Attachment D - Filter Inventory

(Complete for each school)

Name of School: Holy Spirit Grade Levels: _ ____

Address: 970 Suburbon Avenue, Union

Individual School Project Officer Signature: _____ Date: _____

Sample Location / Code	Brand	Type (Make & Model)	Date Installed or Replaced	Replacement Frequency	NSF Certified for Lead Reduction Y/N
HS-WC-03	Pure Water	ID#64722	-	-	Y

Attachment E – Flushing Log

(Complete for each school as applicable)

Name of School: Hillcrest Academy North

Address: _____

Grade Levels: _____

Individual School Project Officer Signature: _____ Date: _____

Sample Location Description	Sample Location Code	Date	Time	Duration of Flushing	Reason for Flushing

Attachment E – Flushing Log

(Complete for each school as applicable)

Name of School: Crossroads School

Address: _____

Grade Levels: _____

Individual School Project Officer Signature: _____ Date: _____

Sample Location Description	Sample Location Code	Date	Time	Duration of Flushing	Reason for Flushing

Attachment E – Flushing Log

(Complete for each school as applicable)

Name of School: Holy Spirit

Address: _____

Grade Levels: _____

Individual School Project Officer Signature: _____ Date: _____

Sample Location Description	Sample Location Code	Date	Time	Duration of Flushing	Reason for Flushing

Attachment F - Pre – Sampling Water Use Certification

(Complete for each school)

TO BE COMPLETED BY THE UCESC DISTRICT REPRESENTATIVE:

School Name: Union County Educational Services Commission

Sample collection address: Hillcrest Academy North

Water was last used: Time: 5:00pm Date: 3/22/22

Sample commencement: Time: 9:00 Am Date: 3/23/22

I have read the Union County Educational Services Commission Lead Drinking Water Testing Sampling Plan and Quality Assurance Project Plan and I am certifying that samples were collected in accordance with these plans.

Signature Date

Attachment F - Pre – Sampling Water Use Certification

(Complete for each school)

TO BE COMPLETED BY THE UCESC DISTRICT REPRESENTATIVE:

School Name: Union County Educational Services Commission

Sample collection address: Crossroads

Water was last used: Time: 5:00pm Date: 3/22/22

Sample commencement: Time: 9:00Am Date: 3/23/22

I have read the Union County Educational Services Commission Lead Drinking Water Testing Sampling Plan and Quality Assurance Project Plan and I am certifying that samples were collected in accordance with these plans.

Signature Date

Attachment F - Pre – Sampling Water Use Certification

(Complete for each school)

TO BE COMPLETED BY THE UCESC DISTRICT REPRESENTATIVE:

School Name: Union County Educational Services Commission

Sample collection address: Holy Spirit

Water was last used: Time: 5:00pm Date: 3/22/22

Sample commencement: Time: 9:00 Am Date: 3/23/22

I have read the Union County Educational Services Commission Lead Drinking Water Testing Sampling Plan and Quality Assurance Project Plan and I am certifying that samples were collected in accordance with these plans.

Signature Date

Attachment G - Example of a Sample Flush Tag

FLUSH TAG

Water outlet sampling in progress. Please do not use water

School District Name: **Union County Educational Services Commission**
Date Flushed:
School Name: Hillcrest Academy Dorm
School Address:
Location of flushed outlet:

Flushing Process
Start Time:
End Time:

Is the fountain front cover removed for the sampler to determine the reservoir type (circle one):
YES / NO

Person responsible for the flushing process (print name): N/A

Signature: _____

* Water within the school distribution system should sit in the pipes unused for at least eight (8) hours after flushing but not more than 48 hours before a sample is taken.*

Note to the person responsible for the flushing process:
A. Turn-off lawn sprinkler outlet(s) until water sampling is complete.
B. Make sure sampling outlets are accessible.

Attachment G - Example of a Sample Flush Tag

FLUSH TAG

Water outlet sampling in progress. Please do not use water

School District Name: **Union County Educational Services Commission**
Date Flushed:
School Name: Crossroads
School Address:
Location of flushed outlet:

Flushing Process
Start Time:
End Time:

Is the fountain front cover removed for the sampler to determine the reservoir type (circle one):
YES / NO

Person responsible for the flushing process (print name): N/A

Signature: _____

* Water within the school distribution system should sit in the pipes unused for at least eight (8) hours after flushing but not more than 48 hours before a sample is taken.*

Note to the person responsible for the flushing process:
A. Turn-off lawn sprinkler outlet(s) until water sampling is complete.
B. Make sure sampling outlets are accessible.

Attachment G - Example of a Sample Flush Tag

FLUSH TAG

Water outlet sampling in progress. Please do not use water

School District Name: **Union County Educational Services Commission**
Date Flushed:
School Name: Holy Spirit
School Address:
Location of flushed outlet:

Flushing Process
Start Time:
End Time:

Is the fountain front cover removed for the sampler to determine the reservoir type (circle one):
YES / NO

Person responsible for the flushing process (print name): N/A

Signature: _____

* Water within the school distribution system should sit in the pipes unused for at least eight (8) hours after flushing but not more than 48 hours before a sample is taken.*

Note to the person responsible for the flushing process:
A. Turn-off lawn sprinkler outlet(s) until water sampling is complete.
B. Make sure sampling outlets are accessible.

Attachment H – Sampling Toolkit

H.i: Recalled Water Cooler List

USEPA's Water Cooler Recall List

Tables from EPA's 3Ts for Reducing Lead in Drinking Water in Schools Revised Technical Guidance

Table E-1
Halsey Taylor Water Coolers With Lead-Lined Tanks[2]

The following six model numbers have one or more units in the model series with lead-lined tanks:

WM8A	WT8A	GC10ACR	GC10A	GC5A	RWM13A

The following models and serial numbers contain lead-lined tanks:

WM14A Serial No. 843034	WM14A Serial No. 843006	WT11A Serial No. 222650
WT21A Serial No. 64309550	WT21A Serial No. 64309542	LL14A Serial No. 64346908

[2]Based upon an analysis of 22 water coolers at a US Navy facility and subsequent data obtained by EPA, EPA believes the most serious cooler contamination problems are associated with water coolers that have lead-lined tanks.

Table E-2
Water Coolers With Other Lead Components

EBCO Manufacturing

All pressure bubbler water coolers with shipping dates from 1962 through 1977 have a bubbler valve containing lead. The units contain a single, 50-50 tin-lead solder joint on the bubbler valve. Model numbers for coolers in this category are not available.

The following models of pressure bubbler coolers produced from 1978 through 1981 contain one 50-50 tin-lead solder joint each.–

CP3	DP15W	DPM8	7P	13P	DPM8H	DP15M	DP3R	DP8A
DP16M	DP5S	C10F	PX-10	DP7S	DP13SM	DP7M	DP7MH	DP7WMD
WTC10	DP13M-60	DP14M	CP10-50	CP5	CP5M	DP15MW	DP3R	DP14S
DP20-50	DP7SM	DP10X	DP13A	DP13A-50	EP10F	DP5M	DP10F	CP3H
CP3-50	DP13M	DP3RH	DP5F	CP3M	EP5F	13PL	DP8AH	DP13S
CP10	DP20	DP12N	DP7WM	DP14A-50/60				

Halsey Taylor

1. Lead solder was used in these models of water coolers manufacrured between 1978 and the last week of 1987:

WMA-1	SCWT/SCWT-A	SWA-1	DC/DHC-1
S3/5/10D	BFC-4F/7F/4FS/7FS	S300/500/100D	

2. The following coolers manufactured for Haws Drinking Faucet Company (Haws) by Halsey Taylor from November 1984 through December 18, 1987, are not lead-free because they contain 2 tin-lead solder joints. The model designations for these units are as follows:

HC8WT	HC14F	HC6W	HWC7D	HC8WTH	HC14FH	HC8W	HC2F	HC14WT
HC14FL	HC14W	HC2FH	HC14WTH	HC8FL	HC4F	HC5F	HC14WL	HCBF7D
HC4FH	HC10F	HC16WT	HCBF7HO	HC8F	HC8FH	HC4W	HWC7	

APPENDIX C: QUALITY ASSURANCE PROJECT PLAN

PARTNER
Engineering and Science, Inc.

QUALITY ASSURANCE PROJECT PLAN (QAPP)

FOR DRINKING WATER SAMPLING OF LEAD CONCENTRATIONS IN SCHOOL DRINKING WATER OUTLETS

Union County Educational Services Commission

45 Cardinal Drive
Westfield, NJ 07090-3316

April 15, 2022

PARTNER Project No. 21-327189.1

Prepared for:

Union County Educational Services Commission

Approvals

Union County Educational Services Commission Representatives:

Program Manager: Eric Larson _____ _____ _____
Print Name | Signature | Date

Project Manager(s): Danial Bracey _____ 04/15/2022 _____
Print Name | Signature | Date

Individual School Project Officer(s) (See page iii)

Third Party Sampling Firm: Partner Engineering & Science
Name of Firm

Angelica Rosaperez _____ 04/15/2022 _____
Print Name | Signature | Date

_____ _____ _____
Print Name | Signature | Date

Laboratory: Alpha Analytical, Inc.
Name of Laboratory

Laboratory Manager: John Trimble _____ John Trimble _____ 04/15/22
Print Name | Signature | Date

Laboratory QA Officer: James Todaro _____ James Todaro _____ 04/22/22
Print Name | Signature | Date

Individual School Project Officers (ISPO)

School	Name	Title	Signature	Date
Hillcrest Academy North	Bashiru Seidu Phone:908-347-3814			
Hillcrest Academy South	Bashiru Seidu Phone: 908-347-3814			
Crossroads School	Bashiru Seidu Phone: 908-347-3814			
Westlake School	Bashiru Seidu Phone: 908-347-3814			
Lamberts Mill Academy	Bashiru Seidu Phone: 908-347-3814			
	Phone:			
	Phone:			
	Phone:			
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	Phone:			

Table of Contents

1. Objective & Goals/Background

1.1 Objective and Goals

A Quality Assurance Project Plan is a document that describes the planning, implementation and evaluation steps involved in the acquisition of data that will be used to arrive at a specific goal. The overall objective for this QAPP is to determine the lead concentration at drinking water outlets within the District's schools so that corrective action(s) may be implemented at any drinking water outlets sampled found to exceed the US Environmental Protection Agency (USEPA) drinking water lead action level of 15 micrograms per liter (µg/L). For the purposes of compliance, any concentration greater than 15 µg/L (as defined as greater than or equal to 15.5 µg/L) is considered to exceed the lead action level.

The lead sampling will consist of the collection of a first draw (initial) sample according to this QAPP and the *Union County Educational Services Commission Lead Water Testing Sampling Plan* (Sampling Plan). The drinking water outlets can be faucets, drinking water fountains (or bubblers) and water coolers (see Sampling Plan for details).

Follow-up sampling will also be covered by this QAPP and the Sampling Plan. An optional follow-up flushed sample may be analyzed at selected drinking water outlets after flushing for 30 seconds. (An exception to the 30 second follow-up flushed sample is for a water cooler which requires a different follow-up sampling timeframe).

The analytical results and field data will be used by the Project Manager and the District (See Section 2.2) to determine whether drinking water distributed from drinking water outlets such as water fountains (bubblers), faucets, food preparation areas and water coolers have concentrations of lead that exceed 15 µg/L. If a first draw (initial) or follow-up flushed cold water sample is found to contain lead at a concentration greater than 15 µg/L, the Project Manager will instruct the Individual School Project Officer (Project Officer) (See Section 2.3) to isolate the source of drinking water by turning off the device or providing a barrier to the consumption of the water (tape and bag) until appropriate remediation is determined.

1.2 Background

Lead is a toxic metal that can be harmful to human health when ingested. Young children are particularly sensitive to the effects of lead because their bodies are still undergoing development. Lead can get into drinking water by being present in the source water or by interaction of the water with plumbing materials containing lead (through corrosion). Common sources of lead in drinking water include: solder, fluxes, pipes and pipe fittings, fixtures, and sediments. It is possible that different drinking water outlets in a given building could have dissimilar concentrations of lead.

In April 1994, USEPA prepared two guidance documents to assist municipalities in meeting the requirements of the Lead Contamination and Control Act (LCCA): *Lead in Drinking Water in Schools and Non-Residential Buildings (*EPA 812-B-94-002) and *Sampling for Lead in Drinking Water in Nursery Schools and Day Care Facilities* (EPA 812-B-94-003). In December 2005, amended October 2006, EPA issued the

revised technical guidance document *3Ts for Reducing Lead in Drinking Water in Schools (EPA 816-B-05-008)* which replaced the *Lead in Drinking Water in Schools and Non-Residential Buildings* (EPA 812-B-94-002). The 3Ts Revised Technical Guidance document is meant to assist school officials in implementing programs and policies to reduce children's exposure to lead in drinking water in schools.

2. Project/Task Organization

2.1 Union County Educational Services Commission Program Manager (Program Manager)

The Union County Educational Services Commission Program Manager is the overall authority in the execution of the District's lead sampling project. He/she is responsible for the initial notification to the District of the testing program, obtaining funds for testing, assigning the Project Manager, requesting/enlisting the assistance from other District departments if needed, approving the District's QAPP(s), approving the Final Report for each school and coordinating with other District officials to make the results of the testing available to the public. The Project Manager reports to the Program Manager.

2.2 Union County Educational Services Commission Project Manager (Project Manager)

The Project Manager is responsible for overseeing the execution of lead sampling at each of the district's schools. This involves the prioritization of schools to be sampled, and adherence with the District's Sampling Plan and QAPP. He/she serves as the liaison between the School District, State agencies, local Health Departments, laboratories and public water systems (if applicable). He/she reports to the Program Manager.

The Project Manager's responsibilities include:

- Preparing the District's Specific QAPP
- Managing the Sampling Plan and QAPP.
- Oversight of Individual School Project Officers (Project Officers) to ensure that they adhere to the Sampling Plan procedures and the QAPP.
- Purchasing of equipment needed for district lead sampling
- Coordination with New Jersey laboratories certified for lead in drinking water
- Coordination with Project Officers to establish sampling schedules
- Ensuring properly signed QAPPs are in place prior to initiation of sampling
- Verify that officials from each school are aware when sampling is scheduled and the expected duration
- Review of the School Field Sampling Summary Reports prepared by Project Officers
- Review of Laboratory Data Reports (LDR) from Laboratory Managers

- Review of Final Project Reports prepared by Project Officers. Identify limitations in the use of any laboratory data due to information provided in the accompanying School Field Sampling Summary Report.
- Maintain the original signed QAPP(s)
- Maintain documents, reports and records listed in Section 14 of the QAPP
    - Laboratory Data Reports (LDR)
    - Copy of Field Sampling Summary Report with copies of field logbooks, field Walk-Through reports including Attachments B, C, D, E, and F of the Lead Sampling Plan, chains of custody and flush tags.
    - Copy of Final Project Report
- Maintenance of other relevant records such as:
    - Purchase orders for analytical costs (copy).
    - Agreement with laboratory to sample/analyze/report with details for payment
    - Receipts (originals or copies)

2.3 Individual School Project Officer(s)

The Individual School Project Officer's responsibilities include:

- General project oversight for assigned school(s).
- Generate field log book for each assigned school. Document field activities including any changes to procedures outlined in the Sampling Plan or QAPP.
- Ensure proper completion of the Plumbing Profile for assigned school(s) - See Attachment B of the Sampling Plan.
- Oversight of completion of the following reports found in the Sampling Plan which require sign–off by Project Officer:
    - Drinking Water Outlet Inventory (Sampling Plan Attachment C)
    - Filter Inventory Report (Sampling Plan Attachment D)
    - Flushing Log (Sampling Plan Attachment E)
    - Pre Sampling Water Use Certification (Sampling Plan Attachment F).
- Prepare labels for drinking water outlets to be sampled.
- Prepare for Walk-Through including acquisition of School Floor Plan.
- Attend school Walk-Through.
- Ensure proper completion of Walk-Through documentation including identification of drinking water outlets on Floor Plan, and Sampling Location Inventory with coding according to the Sampling Plan (Attachment C of Sampling Plan).
- Supervision of field activities such as Walk- Through, flushing (if required), locking school prior to sampling, and sample collection.
- Identify drinking water outlets to be flushed and attach flush tag.
- Ensure that Field Sampling Team has all relevant sampling supplies including sampling bottles, labels, proper reagent water and chains of custody prior to collection of samples.
- Ensure that all drinking water outlets to be sampled prior to sampling event are labeled.
- Ensure that any low-use drinking water outlets identified for sampling had been flushed.
- Remove flush tags from drinking water outlet once sampling is completed.

- Responsible for ensuring water remains motionless for a minimum of eight hours (last to leave the school) prior to sampling event by following procedures in Section 8 of Sampling Plan.
- Verify that the Sampling Plan was followed prior to initiating sampling by completing the Pre-Sampling Water Use Certification (Attachment F in Sampling Plan).
- Supervision of sampling event.
- Documentation of issues during sampling event in field log book.
- Preparation of Field Walk-Through Report, School Field Sampling Summary Report and Final Project Report for assigned school(s).
- Maintenance of field log books for each school.
- Prepare samples for shipment and delivery to laboratory per certified laboratory instructions.
- Ensure that samples are delivered to laboratory within the time period specified by the certified laboratory

2.4 Laboratory Manager

The Laboratory Manager is responsible for:

- Supervising laboratory analyses to be performed in the Laboratory. This includes oversight of all QA requirements in the laboratory, data review, and qualification of the data.
- Providing the Laboratory Data Report Package to the Project Manager and Project Officer.

2.5 Laboratory's Quality Assurance Officer (LQAO)

The Laboratory's Quality Assurance Officer (LQAO) is responsible for reviewing the QAPP and resolving any QA issues that may arise during the project.

2.6 Field Sampler or Field Sampling Team

The Field Sampler or Field Sampling Team, whether affiliated with the Union County Educational Services Commission, ESC Labs, and/or Partner Engineering and Science, is responsible for ensuring that field activities are conducted in accordance with this QAPP and the Sampling Plan.

3. Special Training Needs/Certification

Sampling will be performed by Partner Engineering and Science.

Laboratory personnel designated to analyze the samples will have successfully completed required demonstrations of capability for the methods used. The Laboratory must be a drinking water laboratory certified by New Jersey for the analysis and reporting of lead using USEPA drinking water methods which are listed in Section 8.

Assessments of the Laboratory capability are conducted on a bi-annual basis by the NJDEP Office of

Quality Assurance. The Laboratory Manager has responsibility for correction of all deficiencies in their laboratory program.

4. Project/Task Description

Drinking water samples will be collected from drinking water outlets including water fountains (bubblers), food preparation outlets (located in the cafeteria, kitchen, and home economics classrooms) and other outlets where there is the possibility of drinking the water such as in the special education classrooms, the medical office, the teachers' lounge, and ice machines. Concession stands and outside water fountains (such as in playgrounds and athletic fields) may also be considered for sampling. The custodian sink faucet may also be considered for sampling if it is used for filling large water coolers to provide water at school events. Outside hose spigots are not appropriate sampling locations for the purpose of this QAPP. The Sampling Plan provides more detail on appropriate sampling locations.

The Field Sampler or Team will conduct first draw (initial) sample collection and, as appropriate, follow-up flushed sample collection at the drinking water outlets specified in the Sampling Plan. The Sampling Team will consist of the Project Officer and the Sampler from Partner Engineering and Science. The NJ Certified Laboratory specified in the QAPP will perform the analysis for lead.

5. Lead Data Quality Objectives and Criteria for Measurement

5.1 Precision

The NJ Certified Laboratory will perform replicate analysis of the Laboratory Control Standard (LCS) for every set of individual school samples to assess method precision. This is not a requirement of any of the USEPA approved methods for lead analysis. The acceptance criterion for replicate analysis is a maximum of 20 percent (%) Relative Percent Difference (RPD). In addition to the LCS data, a duplicate laboratory fortified blank (LFB) or a matrix spike and a matrix spike duplicate (MS/MSD) will also provide precision information.

5.2 Bias

As part of the analytical methodology, the NJ Certified Laboratory will perform analysis of laboratory fortified blanks (LFB) to assess accuracy/bias. The acceptance criterion for accuracy is for the results to be within plus or minus 15% recovery of the known value.

A field reagent blank (FRB) must be collected for each school. The FRB is normally only a requirement for USEPA Method 200.8, however the collection of a FRB is required with any of the other approved lead methods for this sampling event. The information provided by the results is used to determine whether the field or sample transporting procedures and environmental effects have contributed to contamination of the sample.

If any sample result(s) are qualified, this must be clearly indicated on the report and all final reports such as

the field summary report. The Project Manager must be consulted to determine how to deal with the qualified results.

5.3 Representativeness

The sampling effort is designed to identify all drinking water outlets, within a school, where there is a potential for water consumption such as at water fountains (bubblers) that may require corrective action due to first draw and/or follow-up flushed sample results that exceed 15 µg/L of lead (as defined as greater than or equal to 15.5 µg/L or greater). Food preparation outlets and other potential ingestion outlets such as special education classrooms, the medical office and bathroom sinks are to be considered for sampling.

5.4 Comparability

The analytical methods for lead analysis in drinking water are found in the federal Safe Drinking Water Regulations at 40 CFR141.86 and 40 CFR 141 Appendix A to Subpart C. Use of these methods allows for the comparison of data to USEPA's drinking water action level for lead of greater than 15 µg/L.

Analytical results from the first draw (initial) and the follow-up flushed samples will be compared to assist in determining the source of lead contamination. Appropriate corrective measures must then be taken by the Union County Educational Services Commission.

5.5 Completeness

In order to satisfy the objective of the project, samples will be collected from drinking water outlets according to the sampling plan established in this QAPP.

One hundred percent (100%) of collected and verified initial draw samples will be analyzed and reported. In the event that an initial draw sample is determined to have a lead content above 15 µg/L, the flush sample for that water outlet will be analyzed and reported.

5.6 Sensitivity

The Laboratory's Reporting Limit (RL) for the determination of lead in drinking water samples must be no higher than 2 µg/L which is lower than the regulatory Practical Quantitation Level for lead of 5 µg/L. The Practical Quantitation Level for Lead is stated in the National Primary Drinking Water Contaminant Regulations 40 CFR141 Subpart I. The required reporting limit of 2 µg/L for this QAPP is achievable with any of the approved USEPA methods listed in 11.1.

6. Secondary Data

Secondary data for the District would be their historical lead data.

7. Field Monitoring Requirements

Sampling may occur in the morning hours before schools are open or on weekdays or weekends when no school activities are expected. This will minimize the potential for people in the building to use water during the sampling survey. While sampling is underway it is advisable to prohibit any persons other than the sampling team to enter the building in order to ensure that no toilets or water outlets are being used.

7.1 Monitoring Process Design

The sampling design, described in detail in the Sampling Plan (Appendix B) is based in part upon the 3T's Guidance for Reducing Lead in Drinking Water in Schools:
Revised Technical Guidance, December 2005; Errata to 3Ts, October 2006 (see Appendix A).

7.2 Monitoring Methods

Equipment and supplies that will be needed to perform the sampling survey are ASTM Type I reagent-grade water for the field reagent blank (FRB), latex non-colored gloves, pre-cleaned HDPE wide-mouth 250 mL single use rigid sample containers ("sample container") and chain of custody (COC forms-Appendix C or lab may use their own) and indelible ink/marker.

For sampling events where the Laboratory will collect the samples, the nitric acid can be either added to the collection bottle at the Laboratory and prior to collection or the nitric acid can be added at the school after collection of the sample. If the water samples are not acidified at the time of collection, the Laboratory will preserve all samples with laboratory grade concentrated nitric acid (HNO_3) to a pH of 2 standard units (SU) or less within 48 hours of sample receipt.

Each school will have a separate sample cooler or box which will contain the field reagent blank (FRB) and the other samples collected. Samples will be transported by Laboratory or Samplers or appropriate representative to the Laboratory.

7.3 Field Quality Control

The analytical results obtained from the FRB will determine whether field or sample transporting procedures is a cause of sample contamination.

Prior to the sampling event, the Sampler will collect a 250 mL ASTM Type I reagent-grade water from the Laboratory which will be used for the FRB. At the school and prior to the first sample collected at a school, the ASTM Type I reagent-grade water will be transferred into a sample container which will be identified as the FRB sample.

The ASTM Type I reagent-grade water will either be supplied by the Laboratory or purchased through a vendor. The 250 mL sample containers are purchased pre-cleaned. Sample containers are not to be

reused.

8. Analytical Requirements

8.1 Analytical Methods

The Union County Educational Services Commission must use one of the USEPA approved drinking water methods listed in the table below for the analysis of lead. Any of these methods can be used provided that the Laboratory is certified to analyze and report lead by that method and that the Laboratory has a reporting limit no greater than 2 µg/L.

For the purposes of the School District's QAPP, the analytical performance information is as follows:

Analyte	Analytical Method	Sample Matrix	Recommended Guidance Level	Reporting Level
Lead (Pb)	USEPA Method 200.8 USEPA Method 200.9 USEPA Method 200.5 SM 3113B ASTM D3559-D	Drinking Water	Greater than 15 µg/L (15.5 µg/L and above) first draw (initial) sample	2.0 µg/L (ppb)

The pH of all samples must be checked at the time of receipt at the Laboratory. If the pH is not less than 2, the pH must be adjusted with the addition of nitric acid. Samples that require the addition of nitric acid must sit for 16 hours prior to digestion (if applicable) or analysis. The pH of each sample must be documented.

The turbidity of each sample must also be checked at the time of receipt at the Laboratory. If the turbidity of the sample is greater than 1 NTU, the sample must be digested prior to analysis. The turbidity of each sample must be documented and those samples digested must be recorded by the Laboratory.

If a sample result exceeds 90% of the linear dynamic range, the sample must be diluted and re-analyzed. The dilution factor must be included in the Laboratory report for each sample that is diluted.

8.2 Analytical Quality Control

The USEPA has established protocols for the analysis of Quality Control (QC) samples with each analytical batch of samples, generally defined as a maximum of twenty samples. All QC results must be assessed and evaluated on an on-going basis and QC acceptance criteria must be used to determine the validity of the data.

For analytical testing, the laboratory includes positive control samples Laboratory Control Sample (LCS) or

Analytical Quality Control (AQC)] to evaluate the total analytical system. Negative control samples (Method Blanks) are used to assess the preparation batch for possible contamination during the preparation and processing steps. A blank is considered contaminated with any result at or above the analyte reporting limit. Specific control samples (Matrix Spikes) are used to indicate the effect of the sample matrix and replicates (matrix spike, LCS replicate) are performed to assess the precision of the results generated.

Specific information regarding acceptance criteria and corrective actions is documented in the Laboratory's SOP for any of the analytical methods listed in the table above.

9. Sample Handling and Custody Requirements

All samples are aqueous and will be collected and labeled by the laboratory.
Standard USEPA Chain of Custody (COC) procedures will be followed according to the information provided in the District's Sampling Plan (Appendix B). The COC form found in Appendix C or equivalent is to be used for this project.

Samples will be transported by Laboratory or Samplers or appropriate representative to the Laboratory.

Analyte	Sample Volume	Container	Preservation (Note1)	Holding Time
Lead (Pb)	250 mL	unused 250 mL rigid plastic wide-mouth – clean	Reagent Grade Nitric Acid (HNO_3) pH < 2	6 months

Note 1. Sample preservation will be conducted either in the field or by the Laboratory upon receipt.

9.1 Sample Archive/Disposal

The samples received by the Laboratory for each school, including any digestates, will be eligible for disposal at a minimum 30 days unless otherwise directed by the District after the final report has been distributed. Samples including any digestates will not be archived unless a written request is provided to the Laboratory.

10. Instrument/Equipment Testing, Inspection, Maintenance & Calibration Requirements

10.1 Instrument/Equipment Testing, Inspection and Maintenance

All laboratory equipment will be tested, calibrated, and maintained in accordance with existing SOPs

approved by the laboratory.

There are no field instruments anticipated for this project.

10.2 Instrument/Equipment Calibration and Frequency

The USEPA approved analytical methods for lead listed in the National Primary Drinking Water Contaminant Regulations at 40 CFR 141.23 and Appendix A to Subpart C require that the instrument calibration be performed on a daily basis.

10.3 Inspection/Acceptance of Supplies and Consumables

250 mL sample containers are purchased pre-cleaned. Sample containers are not to be reused. Sample gloves are to be disposable, non-colored and not reused.

11. Data Management

The Laboratory will immediately notify the Project Manager and Project Officer of the affected school(s) upon receipt of any validated laboratory results that exceed the action level for lead in drinking water that is greater than 15 µg/L (as defined as greater than or equal to 15.5 µg/L). For all results, the Laboratory will provide the result in micrograms per liter (µg/L) and to at least three (3) significant figures (i.e.19.6 µg/L or 20.4 µg/L).

The Laboratory will provide a final electronic copy of the Lead Data Report Package (LDR) for each school that will consist of: 1) PDF cover sheet that identifies the school name and all qualifiers with a description for that qualifier used by the laboratory, 2) laboratory report of the analytical results in PDF format, 3) the chain of custody in PDF format and 4) a spreadsheet of the results. The spreadsheet must include the information outlined in the template provided in Appendix D. Information required to be included in separate columns includes but is not limited to; the field ID (sample location identifier and/or code), the Laboratory sample ID, the Laboratory Name and Laboratory certification number, whether the sample was flushed, the date and time of collection and analysis, the analytical method, the analytical result in µg/L, the reporting limit in µg/L, and whether the sample was diluted or digested and any qualifiers.

The LDR Package will include the analytical results, appropriate qualifiers and reporting limits for analyses of submitted samples as requested by the District. The LDR Package must include explanations of any relevant procedural deviations or anomalies associated with the sample handling and analysis of the project. This report will be completed within the timeframe indicated in the contract. (see Section 5).

12. Assessments/Oversight

Formal field audits by QA personnel may be conducted for this project. However, identification of

problems related to technical performance will be the responsibility of the staff working on this project.

The Project Officer(s) will assess any problem that arises in the field. If necessary, modifications to technical procedures may be considered. Any changes in technical procedures will be documented in the field logbook, evaluated to determine if there will be any impact to the data and then highlighted in the Final Project Report.

The Laboratory personnel will perform self-audits and institute corrective actions in accordance with their respective written procedures.

13. Data Review, Verification, Validation, and Usability

13.1 Data Review, Verification and Validation

The Project Manager will evaluate the School Field Sampling Summary Reports against the final analytical results to determine if any field observations may have contributed to lower or higher analytical results.

The Project Manager will review the analytical report and determine any limitations on the use of the data (see Section 5.2 Bias of this QAPP) and include these limitations in the Final Project Report.

Data review of all laboratory generated data is performed by the Laboratory Quality Assurance Officer (LQAO) who is not associated with the actual measurement operations for the given analytical batch but knowledgeable in the analytical processes employed. It is the responsibility of the LQAO to ensure that all data generated are correct and of known and documented quality. Once the review is completed, the LQAO will sign and date the appropriate QA/QC checklist according to the Laboratory's SOP. Any limitations on the use of data (e.g. data qualifiers) will be included in the Final Project Report.

13.2 Reconciliation with User Requirements

As long as the Field Sampling Summary Report, LDR Package and Final Project Report of this QAPP are satisfied, the data will be useable for the purpose intended and no further assessment is required. If any data are determined to be unusable by the Project Manager, re-sampling may be required.

14. Reporting, Documents and Records

Original documents (X) will be stored as follows:

Document:	Individual School *Project Officer*	Union County Educational Services Commission*Project Manager*	Union County Educational Services Commission*Program*
QAPP	Copy	X	Copy
Field Walk-Through Report	X	Copy	Copy
Field Logbook	X		
Chains of Custody	X	Copy	Copy
Flushing Notification/ Flushing Log Tags/Procedure	X	Copy	Copy
Field Sampling Summary Report	X	Copy	Copy
• Flush Tags	X	Copy	Copy
• Floor Diagrams	X	Copy	Copy
• Plumbing Profile	X	Copy	Copy
• Filter Inventory	X	Copy	Copy
• Drinking Water Outlet Inventory	X	Copy	Copy
• Pre Sampling Water Use Certification	X	Copy	Copy
Laboratory Data Report	X	Copy	Copy
Final Project Report	Copy	X	Copy

Appendix A
3Ts for Reducing Lead in Drinking Water in Schools:

Revised Technical Guidance, December 2005; Errata to 3Ts, October 2006

Available online at:

https://www.epa.gov/sites/production/files/2015-09/documents/toolkit_leadschools_guide_3ts_leadschools.pdf

http://www.nj.gov/dep/watersupply/dwc-lead-schools.html

Appendix B

School District Lead Water Testing Sampling Plan

4/20/2022

Available under separate cover

POTABLE WATER SAMPLING FOR LEAD CONCENTRATION SAMPLE COLLECTION FORM

CLIENT INFORMATION

Name:
Address:
Client Rep:

LAB INFORMATION

Name:
Address:
Proj.Mgr:

SCHOOL/PROJECT INFORMATION

BLDG ID:
BLDG No/Name:
BLDG Address:
Contact Name & Numbers:

(0) Yr. Built:	(1) Yr.1st Add.:	(2) Yr. 2nd Add.:	(3) Yr. 1st Mod.:	(4) Yr. 2nd Mod.:

SAMPLING TEAM: **DATE OF SAMPLING:**

SAMPLE DATA

Sample Description ID (ID must match container label)						Drinking Water Outlet Information				
Sample #	Floor	Functional Space Code	IN/BY	Room Number	Sample/Outlet Code	Sampled Outlet Location/Coordinates/number	0 Seconds	30 Seconds	Time of collection (24hr)	

All containers are pre-cleaned/ 250 ml plastic bottles preserved w HNO_3 @ pH<2 by field__ or to be preserved by lab_____

CHAIN OF CUSTODY

Relinquished By:	**Received By:**	**Time:**
I.		
II.		
III.		

Method of shipment/delivery: ___Fed-Ex _ _Hand Delivery __US Mail ____UPS ___Courier ___Other:_____

INSTRUCTIONS TO THE LABORATORY

__	**Lab:**	**Report Results to:**
__Analyze both initial and follow up samples		__Phone
___Other:		__Email:
_Follow QAPP instructions	**Contact:**	__Fax

PARTNER

Comments: Provide Laboratory Data Report (LDR) Package and Chain of Custody

Appendix D: Excel Template for Lead Results

Field ID	Flushed Y/N	Laboratory sample ID	Laboratory Name	Lab Certification ID	Date Sampled	Time Sampled	Analytical Method	Date of Analysis	Time of Analysis	Concentration in ug/L	Reporting Limit (ug/L)	Dilution Factor	Digested (Y/N)	Qualifier
01 AC-HS-1FL-N-1-OFFICE	N	DWS-1234-01	LAB	01234	3/19/2016	9:15	200.8	3/22/2016	22:44	235	0.2	1	Y	

PARTNER