PARS
Environmental
Inc.

QUALITY ASSURANCE PROJECT PLAN (QAPP) FOR DRINKING WATER SAMPLING OF LEAD CONCENTRATIONS IN SCHOOL DRINKING WATER OUTLETS

PREPARED FOR:

CHESTERFIELD TOWNSHIP SCHOOL DISTRICT
30 SADDLE WAY
CHESTERFIELD, NEW JERSEY 08515

PREPARED BY:

PARS ENVIRONMENTAL, INC.
500 HORIZON DRIVE SUITE 540
ROBBINSVILLE, NEW JERSEY 08691

PARS PROJECT NO.: 1190-01

MARCH 2017

Approvals

School District Representatives:

Program Manager:	Harold O'Neil, Jr. Print Name	Harold O'Neil Jr. Signature	March 27, 2017 Date
Project Manager(s):	Robert Carter Print Name	Robert Carter Signature	March 23, 2017 Date

Individual School Project Officer(s): (See Page iv)

Third Party Sampling Firm: (Note N/A if Third Party not involved)	PARS Environmental, Inc. Name of Firm		
	Julian Fernandez-Obregon Print Name	Julian Fernandez Signature	3/23/17 Date
Laboratory:	EMSL Analytical, Inc. Name of Laboratory		
Laboratory Manager:	Philip Worby Print Name	_____ Signature	_____ Date
Laboratory QA Officer:	Bill Champerliin Print Name	_____ Signature	_____ Date

For additional laboratories conducting sampling and or analysis use additional sheet for sign-off.

Approvals

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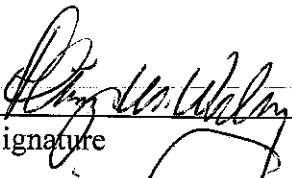
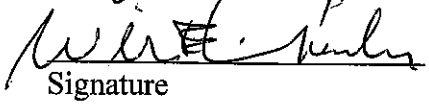
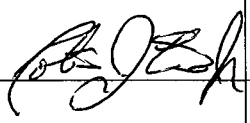
Laboratory Manager:	Philip Worby Print Name	 Signature	2/21/17 Date
Laboratory QA Officer:	Bill Champerliin Print Name	 Signature	2/21/17 Date

For additional laboratories conducting sampling and or analysis use additional sheet for sign-off.

Laboratory:	______________________ Name of Laboratory		
Laboratory Manager:	______________ Print Name	______________ Signature	________ Date
Laboratory QA Officer:	______________ Print Name	______________ Signature	________ Date
Laboratory:	______________________ Name of Laboratory		
Laboratory Manager:	______________ Print Name	______________ Signature	________ Date
Laboratory QA Officer:	______________ Print Name	______________ Signature	________ Date
Laboratory:	______________________ Name of Laboratory		
Laboratory Manager:	______________ Print Name	______________ Signature	________ Date
Laboratory QA Officer:	______________ Print Name	______________ Signature	________ Date
Laboratory:	______________________ Name of Laboratory		
Laboratory Manager:	______________ Print Name	______________ Signature	________ Date
Laboratory QA Officer:	______________ Print Name	______________ Signature	________ Date

Individual School Project Officers (ISPO)

School	Name	Title	Signature	Date
Chesterfield Elementary School	Robert Carter Phone: 609-298-6900 x1208	Supervisor of Buildings and Grounds		3/23/17
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Add additional sheets as necessary.

Contents

1. Objective & Goals/Background

1.1 Objective and Goals

A Quality Assurance Project Plan (QAPP) 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 Chesterfield Township School District (District) 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 *Chesterfield Township School District 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 School District Program Manager (Program Manager)

The School District 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 School District 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-Thru including acquisition of School Floor Plan.
- Attend school Walk-Thru.
- Ensure proper completion of Walk-Thru 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- Thru, 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-Thru 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 District, NJ certified laboratory, and/or Environmental Consulting Firm, 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 the District, a certified Laboratory, or an Environmental Consulting Firm-designated Sampling Team staff. Staff performing the sample collection will be properly trained in sampling techniques.
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 who will be affiliated with either the District,

Laboratory, or the Environmental Consulting Firm. 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 District.

For those school facilities with their own source (classified as a non-transient non-community water system), the results should be submitted to the NJDEP and used to assess compliance with the action levels in EPA's Lead and Copper Rule.

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 samples 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 (HNO3) 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 School District 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 (Note 1)	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) an Excel

spreadsheet of the results. The Excel spreadsheet must include the information outlined in the Excel 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***	**School District *Project Manager***	**School District *Program Manager***
QAPP	Copy	X	Copy
Field Walk-Thru 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

Lead Water Testing Sampling Plan

Available under separate cover

Chesterfield Township School District

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Chesterfield, NJ 08515

Tel: 609-298-6900 x1230
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www.chesterfieldschool.com

March 31, 2017

Dear Chesterfield Township School Community,

Our school system is committed to protecting student, teacher, and staff health. To protect our community and be in compliance with the Department of Education regulations, Chesterfield Township School District tested our schools' drinking water for lead.

In accordance with the Department of Education regulations, Chesterfield Elementary School will implement immediate remedial measures for any drinking water outlet with a result greater than the action level of 15 µg/l (parts per billion [ppb]). This includes turning off the outlet unless it is determined the location must remain on for non-drinking purposes. In these cases, a "DO NOT DRINK – SAFE FOR HANDWASHING ONLY" sign will be posted.

Results of our Testing

Following instructions given in technical guidance developed by the New Jersey Department of Environmental Protection, we completed a plumbing profile for the Chesterfield Elementary School. Through this effort, we identified and tested all drinking water and food preparation outlets. Of the 56 samples taken, all but one tested below the lead action level established by the US Environmental Protection Agency for lead in drinking water (15 µg/l [ppb]).

The table below identifies the drinking water outlet that tested above the 15 µg/l for lead, the actual lead level, and what remedial action Chesterfield Township School District has taken to reduce the levels of lead at this location.

Sample Location	First Draw Result in µg/l (ppb)	Remedial Action
2nd Floor Resource Classroom Bubbler ID#CES-1-B226-SB-P	25.7	Removed Drinking Water Bubbler

Health Effects of Lead

High levels of lead in drinking water can cause health problems. Lead is most dangerous for pregnant women, infants, and children under 6 years of age. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your

body. Exposure to high levels of lead during pregnancy contributes to low birth weight and developmental delays in infants. In young children, lead exposure can lower IQ levels, affect hearing, reduce attention span, and hurt school performance. At *very* high levels, lead can even cause brain damage. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults.

How Lead Enters our Water

Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like groundwater, rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and in building plumbing. These materials include lead-based solder used to join copper pipe, brass, and chrome-plated brass faucets. In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials. However, even the lead in plumbing materials meeting these new requirements is subject to corrosion. When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into the drinking water. This means the first water drawn from the tap in the morning *may* contain fairly high levels of lead.

Lead in Drinking Water

Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of children under the age of 6. EPA estimates that drinking water can make up 20% or more of a person's total exposure to lead.

For More Information

A copy of the test results is available in our board office for inspection by the public, including students, teachers, other school personnel, and parents, and can be viewed between the hours of 8:30 a.m. and 3:00 p.m. and is also available on our website at www.chesterfieldschool.com. For more information about water quality in our schools, contact Howie O'Neil, Interim Business Administrator, at (609)298-0307.

For more information on reducing lead exposure around your home and the health effects of lead, visit EPA's Web site at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.

If you are concerned about lead exposure at this facility or in your home, you may want to ask your health care providers about testing children to determine levels of lead in their blood.

Sincerely,

Scott Heino
Superintendent

Appendix C

Chains of Custody

OrderID: 011701355

Lead (Pb) Chain of Custody

EMSL Order ID *(Lab Use Only)*: 011701355

PHONE:
FAX:

Company: PARS Environmental	**EMSL-Bill to:** ☐ Different ☒ Same If Bill to is Different note instructions in Comments**
Street: 500 Horizon Drive, Suite 540	*Third Party Billing requires written authorization from third party*
City: Robbinsville **State/Province:** NJ	**Zip/Postal Code:** 08691 **Country:** US
Report To (Name): Julian Fernandez-Obregon	**Telephone #:** 609-890-7277
Email Address: jfernandez@parsenviro.com	**Fax #:** 609-890-9116 **Purchase Order:** 1190-01
Project Name/Number: CESC - Chesterfield Elementary LDW Initial	**Please Provide Results:** ☐ FAX ☐ E-mail ☐ Mail
U.S. State Samples Taken: NJ	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* - Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☒ 2 Week

**Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide*

Matrix	Method	Instrument	Reporting Limit	Check
Chips ☐ % by wt. ☐ mg/cm² ☐ ppm	SW846-7000B	Flame Atomic Absorption	0.01%	☐
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	☐
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	☐
	NIOSH 7300 modified	ICP-AES/ICP-MS	0.5 µg/filter	☐
Wipe* ASTM ☐ non ASTM ☐ *If no box is checked, non-ASTM Wipe is assumed	SW846-7000B	Flame Atomic Absorption	10 µg/wipe	☐
	SW846-6010B or C	ICP-AES	1.0 µg/wipe	☐
	SW846-7000B/7010	Graphite Furnace AA	0.075 µg/wipe	☐
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	SW846-1131/SW846-6010B or C	ICP-AES	0.1 mg/L (ppm)	☐
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)	☐
	SW846-7010	Graphite Furnace AA	0.3 mg/kg (ppm)	☐
	SW846-6010B or C	ICP-AES	2 mg/kg (ppm)	☐
Wastewater Unpreserved ☐ Preserved with HNO_3 pH < 2 ☐	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	☐
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	☐
	EPA 200.7	ICP-AES	0.020 mg/L (ppm)	☐
Drinking Water Unpreserved ☐ Preserved with HNO_3 pH < 2 ☒	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	☐
	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	☒
TSP/SPM Filter	40 CFR Part 50	ICP-AES	12 µg/filter	☐
	40 CFR Part 50	Graphite Furnace AA	3.6 µg/filter	☐
Other:				☐

Name of Sampler: Julian Fernandez-Obregon **Signature of Sampler:** Julian Fernandez

Sample #	Location	Volume/Area	Date/Time Sampled
	See Attached		

Client Sample #'s - **Total # of Samples:**

Relinquished (Client):	Julian Fernandez	**Date:**	2/21/17	**Time:**	
Received (Lab):	Jose Rada WI 19.8	**Date:**	2/21/17	**Time:**	13:40

Comments:

Page 1 of 5 pages

PARS ENVIRONMENTAL INC. 011701355

Facility Name: Chesterfield Elementary

Facility Address:

Date: 2/21/17

Sample #	Sample ID	Sample Time	Comments	
FB	Field Blank	557		1
1	CES-1-B220-SB-P	538		2
2	CES-L-B101-TF-P	540		3
3	CES-L-B103-SB-P	541		4
4	CES-L-B108-SB-P	542		5
5	CES-L-B109-SB-P	544		6
6	CES-L-HB112-WC1-P	546		7
7	CES-L-HB112-WC2-P	547		8
8	CES-L-B116-SB-P	549		9
9	CES-L-B115-SB-P	550		10
10	CES-L-B118-SB-P	555		11
11	CES-L-B117-SB-P	558		12
12	CES-L-B122-SB-P	559		13
13	CES-L-B123-SB-P	600		14
14	CES-1-B221-SB-P	605		15

Signature of Sampler:

Sample ID Guide:
Bldg ID - Flr - Rm - Type (- Faucet #)

Page #: 1 of 4

PARS ENVIRONMENTAL INC. 011701355

Facility Name: Chesterfield Elementary

Facility Address:

Date: 2/21/17

Sample #	Sample ID	Sample Time	Comments	
15	CES-1-B222-SB-P	607		16
16	CES-1-B223-SB-P	608		17
17	CES-1-B224-SB-P	609		18
18	CES-1-B226-SB-P	610		19
19	CES-1-B227-SB-P	612		20
20	CES-1-B228-SB-P	614		21
N/A	CES-1-B229-SB-P	N/A	Bubbler Removed	
21	CES-1-B230-SB-P	615		22
22	CES-1-HB223-WC1-P	616		23
23	CES-1-HB223-WC2-P	617		24
24	CES-1-B234-SB-P	618		25
25	CES-1-B236-SB-P	619		26
26	CES-1-B235-SB-P	620		27
27	CES-1-B242-SB-P	623		28
28	CES-1-B244-SB-P	624		29

Signature of Sampler:

Sample ID Guide:
Bldg ID - Flr - Rm - Type (- Faucet #)

PARS ENVIRONMENTAL INC.

011701355

Facility Name: Chesterfield Elementary

Facility Address:

Date: 2/21/17

OrderID: 011701355

Sample #	Sample ID	Sample Time	Comments	
29	CES-1-B243-SB-P	625	Low Pressure	30
30	CES-1-B245-SB-P	627		31
31	CES-1-Hgym-WC1-P	629		32
32	CES-1-Hgym-WC2-P	630		33
33	CES-1-A203-TF-P	632		34
34	CES-1-A205-TF-P	633		35
35	CES-1-A201-TF-P	636		36
36	CES-1-Nurse-NS1-P	637		37
37	CES-1-Nurse-SB-P	638		38
38	CES-1-Nurse-BF-P	639		39
39	CES-1-Nurse-NS2-P	640		40
40	CES-1-A260-SB-P	641		41
41	CES-1-Hcaf-WC1-P	642		42
42	CES-1-Hcaf-WC2-P	643		43
43	CES-1-B252-TF-P	644		44

Signature of Sampler:

Sample ID Guide:
Bldg ID - Flr - Rm - Type (- Faucet #)

PARS ENVIRONMENTAL INC.

01170355

Facility Name: Chesterfield

Facility Address: Elementary

Date: 2/24/17

OrderID: 01170355

Sample #	Sample ID	Sample Time	Comments	
44	CES-1-Kitchen-IM-P	650	2 bottles, combine into one sample	45
45	CES-1-Kitchen-FP1-P	651		46
46	CES-1-Kitchen-FP2-P	653		47
47	CES-1-Kitchen-FP3-P	654		48
48	CES-1-Kitchen-FP4-P	655		49
49	CES-1-Kitchen-FP5-P	656		50
50	CES-1-Kitchen-FP6-P	657		51
51	CES-1-B246-SB-P	658		52
52	CES-1-B247-SB-P	659		53
53	CES-4-B303-TF-P	703		54
54	CES-4-HB317-WC1-P	704		55
55	CES-4-HB317-WC2-P	705		56

Signature of Sampler: Justin Forker

Sample ID Guide:
Bldg ID - Flr - Rm - Type (- Faucet #)

Page #: 4 of 4

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
FB-FIeld-Blank	N	011701355-0001	EMSL	03036	2/21/2017	0537	200.8	2/22/2017	12:48	<1.00	1.00	1	N	
1-CES-1-B220-SB-P	N	011701355-0002	EMSL	03036	2/21/2017	0538	200.8	2/22/2017	12:51	<1.00	1.00	1	N	
2-CES-L-B101-TF-P	N	011701355-0003	EMSL	03036	2/21/2017	0540	200.8	2/22/2017	12:51	<1.00	1.00	1	N	
3-CES-L-B103-SB-P	N	011701355-0004	EMSL	03036	2/21/2017	0541	200.8	2/22/2017	12:52	<1.00	1.00	1	N	
4-CES-L-B108-SB-P	N	011701355-0005	EMSL	03036	2/21/2017	0542	200.8	2/22/2017	12:53	<1.00	1.00	1	N	
5-CES-L-B109-SB-P	N	011701355-0006	EMSL	03036	2/21/2017	0544	200.8	2/22/2017	12:54	<1.00	1.00	1	N	
6-CES-L-HB112-WC1-P	N	011701355-0007	EMSL	03036	2/21/2017	0546	200.8	2/22/2017	12:56	<1.00	1.00	1	N	
7-CES-L-HB112-WC2-P	N	011701355-0008	EMSL	03036	2/21/2017	0547	200.8	2/22/2017	12:57	<1.00	1.00	1	N	
8-CES-L-B116-SB-P	N	011701355-0009	EMSL	03036	2/21/2017	0549	200.8	2/22/2017	12:58	<1.00	1.00	1	N	
9-CES-L-B115-SB-P	N	011701355-0010	EMSL	03036	2/21/2017	0550	200.8	2/22/2017	12:58	1.55	1.00	1	N	
10-CES-L-B118-SB-P	N	011701355-0011	EMSL	03036	2/21/2017	0555	200.8	2/22/2017	12:59	1.07	1.00	1	N	
11-CES-L-B117-SB-P	N	011701355-0012	EMSL	03036	2/21/2017	0558	200.8	2/22/2017	13:01	<1.00	1.00	1	N	
12-CES-L-B122-SB-P	N	011701355-0013	EMSL	03036	2/21/2017	0559	200.8	2/22/2017	13:02	1.22	1.00	1	N	

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
13-CES-L-B123-SB-P	N	011701355-0014	EMSL	03036	2/21/2017	0600	200.8	2/22/2017	13:03	4.08	1.00	1	N	
14-CES-1-B221-SB-P	N	011701355-0015	EMSL	03036	2/21/2017	0605	200.8	2/22/2017	13:05	<1.00	1.00	1	N	
15-CES-1-B222-SB-P	N	011701355-0016	EMSL	03036	2/21/2017	0607	200.8	2/22/2017	13:06	<1.00	1.00	1	N	
16-CES-1-B223-SB-P	N	011701355-0017	EMSL	03036	2/21/2017	0608	200.8	2/22/2017	13:07	<1.00	1.00	1	N	
17-CES-1-B224-SB-P	N	011701355-0018	EMSL	03036	2/21/2017	0609	200.8	2/22/2017	13:07	1.84	1.00	1	N	
18-CES-1-B226-SB-P	N	011701355-0019	EMSL	03036	2/21/2017	0610	200.8	2/22/2017	13:08	25.7	1.00	1	N	
19-CES-1-B227-SB-P	N	011701355-0020	EMSL	03036	2/21/2017	0612	200.8	2/22/2017	13:09	9.58	1.00	1	N	
20-CES-1-B228-SB-P	N	011701355-0021	EMSL	03036	2/21/2017	0614	200.8	2/22/2017	13:11	<1.00	1.00	1	N	
21-CES-1-B230-SB-P	N	011701355-0022	EMSL	03036	2/21/2017	0615	200.8	2/22/2017	13:16	<1.00	1.00	1	N	
22-CES-1-HB223-WC1-P	N	011701355-0023	EMSL	03036	2/21/2017	0616	200.8	2/22/2017	13:17	<1.00	1.00	1	N	
23-CES-1-HB223-WC2-P	N	011701355-0024	EMSL	03036	2/21/2017	0617	200.8	2/22/2017	13:18	<1.00	1.00	1	N	
24-CES-1-B234-SB-P	N	011701355-0025	EMSL	03036	2/21/2017	0618	200.8	2/22/2017	13:19	<1.00	1.00	1	N	
25-CES-1-B236-SB-P	N	011701355-0026	EMSL	03036	2/21/2017	0619	200.8	2/22/2017	13:19	<1.00	1.00	1	N	
26-CES-1-B235-SB-P	N	011701355-0027	EMSL	03036	2/21/2017	0620	200.8	2/22/2017	13:20	7.61	1.00	1	N	
27-CES-1-B242-SB-P	N	011701355-0028	EMSL	03036	2/21/2017	0623	200.8	2/22/2017	13:21	3.16	1.00	1	N	

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
28-CES-1-B244-SB-P	N	011701355-0029	EMSL	03036	2/21/2017	0624	200.8	2/22/2017	13:23	<1.00	1.00	1	N	
29-CES-1-B243-SB-P	N	011701355-0030	EMSL	03036	2/21/2017	0625	200.8	2/22/2017	13:24	<1.00	1.00	1	N	
30-CES-1-B245-SB-P	N	011701355-0031	EMSL	03036	2/21/2017	0627	200.8	2/22/2017	13:25	2.01	1.00	1	N	
31-CES-1-HGYM-WC1-P	N	011701355-0032	EMSL	03036	2/21/2017	0629	200.8	2/22/2017	13:27	<1.00	1.00	1	N	
32-CES-1-HGYM-WC2-P	N	011701355-0033	EMSL	03036	2/21/2017	0630	200.8	2/22/2017	13:28	<1.00	1.00	1	N	
33-CES-1-A203-TF-P	N	011701355-0034	EMSL	03036	2/21/2017	0632	200.8	2/22/2017	13:29	10.6	1.00	1	N	
34-CES-1-A205-TF-P	N	011701355-0035	EMSL	03036	2/21/2017	0633	200.8	2/22/2017	13:29	<1.00	1.00	1	N	
35-CES-1-A201-TF-P	N	011701355-0036	EMSL	03036	2/21/2017	0636	200.8	2/22/2017	13:30	3.34	1.00	1	N	
36-CES-1-Nurse-NS1-P	N	011701355-0037	EMSL	03036	2/21/2017	0637	200.8	2/22/2017	13:32	1.20	1.00	1	N	
37-CES-1-Nurse-SB-P	N	011701355-0038	EMSL	03036	2/21/2017	0638	200.8	2/22/2017	13:33	1.14	1.00	1	N	
38-CES-1-Nurse-BF-P	N	011701355-0039	EMSL	03036	2/21/2017	0639	200.8	2/22/2017	13:34	<1.00	1.00	1	N	
39-CES-1-Nurse-NS2-P	N	011701355-0040	EMSL	03036	2/21/2017	0640	200.8	2/22/2017	13:35	1.27	1.00	1	N	
40-CES-1-A260-SB-P	N	011701355-0041	EMSL	03036	2/21/2017	0641	200.8	2/22/2017	13:37	2.22	1.00	1	N	
41-CES-1-HCaf-WC1-P	N	011701355-0042	EMSL	03036	2/21/2017	0642	200.8	2/22/2017	13:39	<1.00	1.00	1	N	
42-CES-1-HCaf-WC2-P	N	011701355-0043	EMSL	03036	2/21/2017	0643	200.8	2/22/2017	13:43	<1.00	1.00	1	N	

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
43-CES-1-B252-TF-P	N	011701355-0044	EMSL	03036	2/21/2017	0644	200.8	2/22/2017	13:44	1.63	1.00	1	N	
44-CES-1-Kitchen-IM-P	N	011701355-0045	EMSL	03036	2/21/2017	0650	200.8	2/27/2017	13:31	<1.00	1.00	1	N	
45-CES-1-Kitchen-FP1-P	N	011701355-0046	EMSL	03036	2/21/2017	0651	200.8	2/22/2017	13:45	5.58	1.00	1	N	
46-CES-1-Kitchen-FP2-P	N	011701355-0047	EMSL	03036	2/21/2017	0653	200.8	2/22/2017	13:45	1.31	1.00	1	N	
47-CES-1-Kitchen-FP3-P	N	011701355-0048	EMSL	03036	2/21/2017	0654	200.8	2/22/2017	13:46	14.8	1.00	1	N	
48-CES-1-Kitchen-FP4-P	N	011701355-0049	EMSL	03036	2/21/2017	0655	200.8	2/22/2017	13:47	1.30	1.00	1	N	
49-CES-1-Kitchen-FP5-P	N	011701355-0050	EMSL	03036	2/21/2017	0656	200.8	2/22/2017	13:48	2.62	1.00	1	N	
50-CES-1-Kitchen-FP6-P	N	011701355-0051	EMSL	03036	2/21/2017	0657	200.8	2/22/2017	13:48	<1.00	1.00	1	N	
51-CES-1-B246-SB-P	N	011701355-0052	EMSL	03036	2/21/2017	0658	200.8	2/22/2017	13:51	<1.00	1.00	1	N	
52-CES-1-B247-SB-P	N	011701355-0053	EMSL	03036	2/21/2017	0659	200.8	2/22/2017	13:53	1.22	1.00	1	N	
53-CES-U-B303-TF-P	N	011701355-0054	EMSL	03036	2/21/2017	703	200.8	2/22/2017	13:54	3.06	1.00	1	N	
54-CES-U-HB317-WC1-P	N	011701355-0055	EMSL	03036	2/21/2017	704	200.8	2/22/2017	13:54	<1.00	1.00	1	N	
55-CES-U-HB317-WC2-P	N	011701355-0056	EMSL	03036	2/21/2017	705	200.8	2/22/2017	13:55	<1.00	1.00	1	N	

Exceeds EPA Action Limit (> 15 ppb)

Bldg ID - Floor - Room / Location ID - Outlet Type / Number in Sequence - (P)rimary / (F)lush

OUTLET TYPE

BF = Bathroom Faucet	IM = Ice Machine
CF = Classroom Faucet	KC = Kitchen Outlet, Cold
DW = Drinking Water Fountain	KT= Kettle
FP = Food Prep	HS = Hand Sink
NS = Nurse’s Sink	SB = Sink/Bubbler Combination
TF = Teachers Faucet	WC = Water Cooler

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (856) 303-2500 Fax: (856) 858-4571 Email: EnvChemistry2@emsl.com

Attn: **Julian Fernandez-Obregon**
PARS Environmental
500 Horizon Drive
Suite 540
Robbinsville, NJ 08691
Phone: (609) 890-7277
Fax: (609) 890-9116

2/27/2017

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 2/21/2017. The results are tabulated on the attached data pages for the following client designated project:

Project ID: Chesterfield
CESC- Chesterfield Elementary LDW Initial

The reference number for these samples is EMSL Order #011701355. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Approved By:

Phillip Worby, Chemistry Laboratory Manager

The test results contained within this report meet the requirements of NELAP and/or the specific certification program that is applicable, unless otherwise noted.
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, CA ELAP 187

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order:	011701355
CustomerID:	PARS51
CustomerPO:	
ProjectID:	Chesterfield

Attn: **Julian Fernandez-Obregon**
PARS Environmental
500 Horizon Drive
Suite 540
Robbinsville, NJ 08691

Phone: (609) 890-7277
Fax: (609) 890-9116
Received: 02/21/17 1:40 PM

Project: **CESC- Chesterfield Elementary LDW Initial**

Analytical Results

Client Sample Description FB-FIeld-Blank ***Collected:*** 2/21/2017 ***Lab ID:*** *0001*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 1-CES-1-B220-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0002*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 2-CES-L-B101-TF-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0003*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 3-CES-L-B103-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0004*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 4-CES-L-B108-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0005*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 5-CES-L-B109-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0006*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 6-CES-L-HB112-WC1-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0007*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

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Client Sample Description 7-CES-L-HB112-WC2-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0008*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 8-CES-L-B116-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0009*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 9-CES-L-B115-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0010*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	1.55	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 10-CES-L-B118-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0011*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	1.07	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 11-CES-L-B117-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0012*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 12-CES-L-B122-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0013*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	1.22	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 13-CES-L-B123-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0014*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	4.08	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

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Client Sample Description 14-CES-1-B221-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0015*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 15-CES-1-B222-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0016*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 16-CES-1-B223-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0017*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 17-CES-1-B224-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0018*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	1.84	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 18-CES-1-B226-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0019*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	25.7	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 19-CES-1-B227-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0020*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	9.58	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 20-CES-1-B228-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0021*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

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Client Sample Description 21-CES-1-B230-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0022*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 22-CES-1-HB223-WC1-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0023*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 23-CES-1-HB223-WC2-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0024*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 24-CES-1-B234-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0025*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 25-CES-1-B236-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0026*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 26-CES-1-B235-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0027*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	7.61	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 27-CES-1-B242-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0028*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	3.16	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

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Client Sample Description 28-CES-1-B244-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0029*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 29-CES-1-B243-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0030*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 30-CES-1-B245-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0031*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	2.01	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 31-CES-1-HGYM-WC1-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0032*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 32-CES-1-HGYM-WC2-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0033*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 33-CES-1-A203-TF-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0034*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	10.6	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 34-CES-1-A205-TF-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0035*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

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Client Sample Description 35-CES-1-A201-TF-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0036*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	3.34	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 36-CES-1-Nurse-NS1-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0037*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	1.20	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 37-CES-1-Nurse-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0038*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	1.14	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 38-CES-1-Nurse-BF-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0039*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 39-CES-1-Nurse-NS2-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0040*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	1.27	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 40-CES-1-A260-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0041*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	2.22	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 41-CES-1-HCaf-WC1-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0042*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

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Client Sample Description 42-CES-1-HCaf-WC2-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0043*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 43-CES-1-B252-TF-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0044*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	1.63	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 44-CES-1-Kitchen-IM-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0045*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	ND	1.00	µg/L	2/27/2017	AE	2/27/2017	EG

Client Sample Description 45-CES-1-Kitchen-FP1-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0046*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	5.58	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 46-CES-1-Kitchen-FP2-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0047*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	1.31	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 47-CES-1-Kitchen-FP3-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0048*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	14.8	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 48-CES-1-Kitchen-FP4-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0049*

Method	Parameter	Result	RL	Units	Prep Date	Analyst	Analysis Date	Analyst
200.8	Lead	1.30	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

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Client Sample Description 49-CES-1-Kitchen-FP5-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0050*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	2.62	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 50-CES-1-Kitchen-FP6-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0051*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 51-CES-1-B246-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0052*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 52-CES-1-B247-SB-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0053*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	1.22	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 53-CES-U-B303-TF-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0054*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	3.06	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 54-CES-U-HB317-WC1-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0055*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Client Sample Description 55-CES-U-HB317-WC2-P ***Collected:*** 2/21/2017 ***Lab ID:*** *0056*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date*	*Analyst*	*Analysis Date*	*Analyst*
200.8	Lead	ND	1.00	µg/L	2/21/2017	AE	2/22/2017	EG

Definitions:

ND - indicates that the analyte was not detected at the reporting limit
RL - Reporting Limit (Analytical)