Newark Public Schools
Lead Water Testing
Sampling Plan

March 2016

The attached *Newark Public Schools Lead Water Testing Sampling Plan* was developed by the New Jersey Department of Environmental Protection, in consultation with the United States Environmental Protection Agency and Newark Public Schools.

This Plan includes the protocols for sampling water at every tap and water fountain in every school building in Newark. It also includes, in Attachment A, the priority order in which schools will be sampled and the target dates for sampling to begin for each of the priority lists.

As the sampling begins, some adjustments to targeted start dates may be necessary. If such adjustments are made, they will be made available to the public.

NEWARK PUBLIC SCHOOLS
LEAD WATER TESTING
SAMPLING PLAN

MARCH 2016

Newark Public Schools
Keith Barton

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Introduction

This document was developed by the New Jersey Department of Environmental Protection, in consultation with the United States Environmental Protection Agency and the Newark Public Schools, to develop a baseline of water sampling results for lead for every tap from which water is or can be consumed or used for food preparation in every Newark Public School. The baseline data developed through the execution of this plan will help guide future water testing for lead to ensure that no student is exposed to elevated lead levels in Newark's schools.

Newark Public Schools has also developed a Quality Assurance Program Plan for the sampling program under a separate cover.

Objective

Newark Public Schools have randomly sampled various taps within operating schools. Recent analysis of the sampling data has determined some of the samples to be greater than the Lead and Copper Rule action level of 15 ppb. The objective of the sampling plan is to outline Newark Public Schools' overall plan to determine the lead concentration at all taps within all Newark Public Schools. Based on the results of the sampling events, Newark Public Schools will institute correction action(s).

There is no federal or state law requiring testing of drinking water in schools, except for schools that have their own water supply and would be subject to the Safe Drinking Water Act (SDWA) of 1974 as amended in 1986 and 1996. 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 United States Environmental Protection Agency 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 lead sampling plan.

It should be noted, for the purpose of determining corrective actions, Newark Public Schools has been advised by the New Jersey Department of Environmental Protection to utilize the lead action level of 15 ppb to be more stringent than the EPA's Lead in Schools Guidance which recommends action be taken for taps greater than 20 ppb. Schools in New Jersey that are served by their own well (not public water) must adhere to the 15 ppb value for determining compliance.

Sampling Coordination

A separate log book and supporting documentation will be kept for each school. The contents of the log book are to include the attachments A through F.

The sampling program manager for Newark Public Schools' lead sampling program will be Keith Barton. Mr. Barton will be responsible for overseeing and coordinating the overall management of the sampling program including prioritizing the schools to be sampled, communicating with the individual school project managers, coordinating with the New Jersey certified laboratories, coordinating with New Jersey Department of Environmental Protection and ensuring the Newark Public School Sampling Plan and Quality Assurance Project Plan are followed.

The following individuals have been identified as the sampling project manager for each school as noted.

Individual School Project Managers
(Add rows as needed)

Name	Title	School
Benjamin Olagadeyo		

Roles and Responsibilities

Sampling Program Manager
Keith Barton
CONTACT INFORMATION

Responsibilities:

- Preparation of Newark Public Schools' Lead Sampling Plan.
- Preparation of Newark Public Schools' Quality Assurance Program Plan.
- Management of Newark Public Schools' Lead Sampling Program and Quality Assurance Plan.
- Liaison between Newark Public Schools, New Jersey Department of Environmental Protection and the contracted New Jersey certified laboratories.
- Supervise Individual School Sampling Project Managers.
- General oversight of material evaluation and inventory of schools.
- Verify Individual School Sampling Project Managers are trained.
- Verify Individual School Sampling Project Managers complete and sign required documentation as outlined in the plans.
- Coordinate availability of sampling bottles, proper labels and chains of custodies with New Jersey certified laboratories.

Individual School Sampling Project Managers

Responsibilities:

- General project oversight for their assigned school(s).
- Supervision of materials evaluation and inventory for assigned school(s).
- Preparation and attendance of school walk-thru.
- Completion of walk-thru documentation including identification of sampling taps.
- Supervision of field activities.
- Obtain sampling supplies including sampling bottles, labels and chains of custody.
- Label all sampling taps prior to sampling event.
- Flush taps as identified in sampling plan.
- Responsible for ensuring water remains motionless for a minimum of eight hours. (last to leave the school) prior to sampling event.
- Verify lead sampling plan was followed prior to initiating sampling.
- Supervision of sampling.
- Document sampling event.
- Maintain all field log books for assigned school(s) including but not limited to: material evaluation, filter log, sample tap inventory, flushing log, and sample tap label identification.

School Sampling Prioritization

Newark Public Schools has developed a list (in priority order) of all public schools, including early child care centers and charter schools to be sampled. Please refer to Attachment A.

Newark Public Schools will prioritize the list of priority 2 and 3 schools based on the following criteria: Sampled before, age served, special needs population and location.

Individual Material Evaluation and Inventory of School

Newark Public Schools will evaluate each public school to identify the following:

- Material of service line
- Material of internal plumbing/plumbing profile
- Point of entry or point of use treatment being utilized
- Filter information including:

  - Location (school and tap)
  - Brand
  - Type
  - Installation date(last replaced)
  - Replacement frequency
  - Documentation of repairs
  - If capable of removing lead
- Process for adding filters based on routine lead sampling and the district staff person responsible for the program.
- Filter maintenance and operation program
- Type and location of all drinking water fountains
  - Make and model
  - Are any lead-lined
  - Are any recalled, see EPA Fact Sheet available at http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=30005UPU.txt
- All permanently out of service taps and drinking water fountains
  Verification the current plumbing supply inventory meets current “lead free” regulations
- Inventory of all plumbing repairs and replacements conducted within the past year
- Identify locations where electrical wires are grounded to water pipes
- Inventory of all taps and drinking water fountains
- Floor diagram

Attachment B will be utilized by Newark Public Schools to summarize its findings of the evaluation above. Attachment C will be utilized to provide an inventory of all filters for each school. Both forms must be signed by the individual school sampling project manager and kept in the field log for the individual school.

Pre-Planning

A walk-thru must be conducted by the individual school project manager at least one week prior to sampling as part of the pre-planning process. For the first priority round of sampling, the walk-thru needs to be completed two days before sampling. The walk-thru will be conducted in every room including but not limited to classrooms, offices, bathrooms, kitchens and recreational areas. Each sample tap will be identified and noted on the school floor diagram.

The school floor diagram should have the classroom numbers and the following locations labeled: Water Main (WM), drinking water outlets [bubblers (A), bubblers with

individual chillers (B), water coolers (C)], food preparation taps [cafeteria, kitchen and home economics class faucets (F)] and other potential drinking water taps [nurse, special education classroom, teacher's lounge, bathroom sinks], and any other room used for water consumption.

The individual school project manager must date and sign the floor diagram.

Sample Locations

The following locations will be identified and sampled in each of the schools.

Point of Entry[1]
Kitchen taps
Cafeteria taps
Food Preparation taps
Teacher Lounge taps
Nurse's Office taps
Home Economic Sink taps
Drinking Water Fountains – Bubblers and Water Coolers[2]
Classroom Drinking Water Fountains[2]
Library taps
Art Room taps
Classroom taps
Bathroom taps[3]
Outside drinking water fountains and food preparation areas

[1] Point of entry sampling will be a flushed sample and sampling will be conducted by Newark City Water Department. A flushed sample is necessary to compare the lead level result from the service connection to the water that has remained stagnant in a school sample tap.

[2] All drinking water fountains in the schools will be sampled from the outlet after any existing filter. Existing filters will not be replaced until sampling is complete. If the bubbler is also part of a sink, only the bubbler will be sampled and not the sink tap.

[3] All bathroom taps will be sampled unless they are a hot and cold combination tap or if a bathroom contains more than one tap made of the same plumbing/fixture then only one (1) representative tap from that bathroom will be sampled. This will ensure that

samples collected from a bathroom tap are first draw (water sat motionless in the plumbing for a minimum of eight hours).

Utility sinks, science classroom sinks, outside spigots and bottled water coolers will not be sampled.

Each sampling location shall be identified by its location and type. Newark Public Schools coding system will be as follows:

POE= point of entry
KC = kitchen faucet, cold
CT= cafeteria tap
FP= food preparation sink
TL= teacher lounge sink
NS = nurse's office sink
EC = home economics room, cold
DW= drinking water bubbler
SDW – Sink with bubbler
WC = water cooler (chiller unit)
LT= library tap
AR= art room tap
CF = classroom faucet
BF = bathroom faucet

Attachment D will be utilized by the school to develop a detailed inventory of each sampling tap in the school to be sampled. The inventory must be completed and signed by the individual school project manager.

Sampling Procedures

Samples should be collected during the school year before the facility opens and before any water is used. The water should sit in the pipes unused for at least 8 hours but no more than 18 hours before a sample is taken. However, water may be more than 18 hours old at some taps that are infrequently used. If this is typical of normal use patterns, then these taps should not be pre-flushed prior to sampling (i.e. a drinking water fountain in an auditorium that may only be used for special events).

However, during vacations, weekends and holidays, the water will have remained stagnant for too long and would not represent the water used for drinking during most

of the days of the week. If sampling is to occur during one of these scenarios, the school district may choose to flush the school's water distribution system 18 hours prior to sampling to simulate normal use patterns.

Four days prior to sampling

The sampling program manager will contact the laboratory to confirm sample bottles, weatherproof labels, chain of custody forms and coolers are available and ready for the sampling event.

For the first priority sampling event, the sampling program manager must confirm with the laboratories at least two days prior.

Confirmation must be recorded in the individual log for each school.

Two days prior to sampling

Newark Public Schools will conduct an onsite plumbing assessment of each sample tap to identify any specific characteristics of the tap (i.e. is tap leaking water; staining). The water should be turned on to determine the spray pattern, is there adequate flow to collect samples, any odor or color differences or does the cold water tap not work. All problem taps must be repaired prior to sampling. These issues may be documented on the sample site inventory, Attachment D.

Day prior to sampling

Post signs throughout the school (i.e. entrances) indicating that water sampling will be conducted following day so the taps will be labeled during the day and that water cannot be used after the school day.

All irrigation and outdoor water features will be turned off the day prior to sampling.

Due to recent lead sampling results, 30 Newark school buildings were placed on bottled water effective March 8, 2016. Therefore, taps within these schools have not been used under normal conditions.

To ensure that sampling represent normal water usage in these schools, Newark Public Schools personnel will take the following steps prior to collecting samples:

- 18 hours prior to the sampling event, Newark Public Schools will flush the taps not in use for at least one minute and the drinking water fountains until the bladder is empty.

- This flushing event and locations will be documented in a log utilizing Attachment E.

- The flushing log must be completed and signed by the individual school project manager.

Newark Public Schools will also utilize Attachment E to document the water use at each school prior to sampling.

Aerators and screens will not be removed prior or during the sampling event.

All sample taps will be labeled to identify the sample location (previously identified in Attachment D).

The following procedures will be followed to ensure water remains motionless for a minimum of eight hours in the school prior to sampling.

Newark public schools will revise the schedule of the janitorial staff to ensure that the buildings are locked by 9 pm the night prior to sampling. The school building coordinator will ensure that the school is not opened and will meet the sampling team. Documentation that no one entered the building prior to sampling will be completed.

Day of sampling

The individual school project manager will used Attachment F to document when the water was last used and when sampling began.

Upon arrival at each school building, the certified laboratory sampling team will confirm with the individual school project manager from Newark Public Schools that no water taps, including sprinkler systems, in and around the school were utilized for at least 8 hours.

If a walk-thru was conducted during the pre-planning process, then sampling can begin. However, if a walk-thru was not conducted during the pre-planning process the individual school project manager and laboratory representative, will conduct a walk-thru of each room to confirm each water tap on the school floor diagram. Any water leaks at any water tap or any other observation (i.e. additional taps not on the floor diagram, signs of corrosion, filter attached to tap) will be documented.

After the walk-thru is complete, the individual school project manager will determine the order of sample collection, number of taps, and location of each tap that will be sampled from the information gathered during the walk-thru.

Sample Collection

All samples will be collected in a pre-cleaned HDPE 250mL wide mouth single use rigid sample container.

Sampling will begin at the tap closest to the point of entry and continue to the furthest out tap to ensure the water remains motionless in the plumbing. If point of entry sampling is occurring the same day as the tap sampling, the point of entry sampling shall be collected last due to it being a flushed sample.

Each sample collected will be properly identified on the sample bottle and chain of custody utilizing the name of the tap previously identified by Newark Public Schools (and identified on label on tap). In addition, first draw samples will be identified utilizing a “P” and flushed samples will be identified utilizing a “F”.

First draw samples (sitting motionless a minimum of eight hours) will be collected from a cold water tap at each location identified above. The sample must be collected by placing the bottle under the sample tap before turning the cold water tap on. No water should be allowed to run prior to collecting a sample.

After all first draw sampling is completed within a school, Newark Public Schools will collect a flushed sample from each tap located in the following areas:

Water fountains
Kitchen
Cafeteria
Food Preparation
Teacher Lounge
Nurse’s Office

Flushed samples will be collected after running the tap for 30 seconds.

Newark Public Schools is collecting flushed samples at the above locations initially to determine if flushing procedures will minimize lead exposure in the high consumption areas of the school.

Point of entry samples will be flushed to have the initial service connection sample be a flushed sample to compare the lead level from the facility service connection to water that has remained stagnant in a tap.

Point of entry sampling will be the last sampling event at each school.

Follow-up Sampling

Upon receiving the results, Newark Public Schools will collect a flushed sample at any location with a first draw result greater than 15 ug/L (which is 15.5 ug/L or greater).

Flushed samples will be collected to assist in pinpointing the source of lead. The analytical result will be used to determine whether the header/riser pipe that supplies that tap with water is a source of lead. This sample will also indicate the extent to which a brief flush can provide temporary remediation at taps where elevated lead levels are detected in the first draw (initial) sample.

All flushed sampling must be conducted in accordance with the sampling plan and Quality Assurance Program Plan.

NJ Certified Laboratories

The following New Jersey certified laboratories will be utilized for the above sampling procedures.

NEWARK PUBLIC SCHOOLS TO PROVIDE LIST

Laboratory	Certification Number	Contact Information
AGRA		
Precision Labs		
Garden State Labs		
Aqua Pro Tech		

Each New Jersey certified laboratory must elect one sampler to conduct the sampling in the Newark Public Schools. If the New Jersey certified laboratory elects to utilize more than one sampler to allow more than one school to be sampled per day, the laboratory

must provide documentation to Newark Public Schools that all personnel have been trained and have been provide with Newark Public Schools' Lead Sampling Plan and Quality Assurance Program Plan. Each laboratory must also document laboratory personnel have sampled for lead in drinking water previously and personnel designated for the analysis have been properly trained to conduct EPA Method 200.8 or other methods that are approved EPA methods for the analysis of lead in drinking water (EPA Method 200.9, EPA Method 200.5, SM3113B, ASTM3559-D) provided that the reporting limited used by the laboratory for that method is less than or equal to 0.5ug/L.

Samplers identified by each laboratory are as follows:

Laboratory	Sampler Name	Contact Information

Each sampler will be responsible for the following:

- Preparation of pre-printed waterproof labels, which will include, the sampler's name, school name, sample station identifier, 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.
- Prior to the sampling event, the sampler will collect from the Laboratory ASTM Type I reagent-grade water (RGW) into a sample container that will be used as a FRB as outlined in the Method. The sampler will transport this container with RGW to the school to be sampled. Before the first sample is collected the RGW collected at the Laboratory will be transferred to another 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 the samples collected at that school.
- The sampler shall document any observations such as automatic sensors, odors, change in water color, low water flow, tap water leaks (i.e. 1 second drip), irregular water spray, if a filter is attached, if the screen/aerator is on/off the tap or if the water becomes warm/hot.
- For each tap sampled, a new pair of non-colored latex gloves will be used to collect both the first draw (initial) and follow-up (30 seconds) samples. This is to minimize the potential for cross contamination of sample taps by sampling personnel. The water will be collected from the tap directly into each container.
- Transcribing the sample ID, in indelible marker, on the underside of the sampling fixture, in the event the SD has to re-visit the sampling location.

- Remove the tag from the sample tap and provide to the individual school project manager.
- The sampler is responsible for following all of the sampling procedures outlined in Newark Public schools' Quality Assurance Program Plan.

All samples will be analyzed of lead utilizing EPA Certified Methods for Lead in Drinking Water.

The laboratory will conduct analysis of a laboratory fortified 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 Newark Public Schools within 24 hours of verification.

Intermediate Remedial Measures

Upon receiving the first draw sample results, Newark Public Schools will turn off all taps greater than 15 ug/L. If these locations include bathrooms, at least one sink will remain on for sanitary purposes and a "do not drink" sign will be posted.

Flushed samples will be scheduled to be collected from those taps with results greater than 15 ug/L.

Data Summary

Newark Public Schools will obtain the lead sample results from the laboratories via electronic copy within 24 hours of verification. A spreadsheet of all results must be included.

Newark Public Schools will provide a detailed summary of the results to the New Jersey Department of Environmental Protection within 24 hours of receipt.

Conclusion

This Lead Water Testing Sampling Plan was developed specifically for Newark Public Schools in response to the results of testing performed in its schools in 2015-2016 and to due to uncertainty about the sampling and testing protocols and procedures

performed in previous years, as well as any remediation based on testing results in those years.

This plan will provide a baseline for every tap in every school. That baseline will be used to determine whatever remediation is necessary and to inform future lead water testing. It is expected that future testing will be performed in accordance with the protocols and procedures recommended by the United States Environmental Protection Agency in its publication, 3Ts for Reducing Lead in Drinking Water in Schools and in consultation with the DEP.

Attachment A
List of Newark Public Schools
Priority for Sampling

School Name	Scheduled Date of Sampling
PRIORITY 1	Start Date of March 19, 2016
Alexander Street	Start Date of March 19, 2016
Alexander Street / Boylan Annex	Start Date of March 19, 2016
Bragaw	Start Date of March 19, 2016
Burnet	Start Date of March 19, 2016
Fifteenth Avenue	Start Date of March 19, 2016
Madison	Start Date of March 19, 2016
Malcolm X. Shabazz Shabazz Field House/Athletics Field + Parking	Start Date of March 19, 2016
Marion Bolden Center	Start Date of March 19, 2016
MLK	Start Date of March 19, 2016
Newark Schools Stadium	Start Date of March 19, 2016
Untermannn Field	Start Date of March 19, 2016
West Side Park Gym: leased from United Community Corporation (S.17th)	Start Date of March 19, 2016
PRIORITY 2	Target Start Date March 21, 2016
Abington Avenue	
American History High School	
Barringer HS	
Benjamin Franklin	
Berliner	
Branch Brook	
Camden Street Middle	
Carver	
Cleveland	
Fourteenth Avenue	
Hawthorne Avenue	
Ivy Hill	
John F. Kennedy	
Luis Munoz Marin	
Maple Avenue Annex	
Miller Street School	
Mount Vernon	
New Jersey Regional Day	
Newark Leadership Academy	
Newton	

Old First Avenue/Old Elliott Annex	
Old Speedway	
Quitman Street	
Ridge Street K-1 Annex	
Ridge Street Main Building (Gr 2-8)	
Roberto Clemente	
South Seventeenth Street	
South Street	
Spencer	
Thirteenth Avenue	
Weequahic	
West Side High School	
Wilson Avenue	
Central Office	
Harold Wilson	
Warehouse (Parker Street)	
Warehouse (Railroad Ave)	
PRIORITY 3	Target Start Date April 11, 2016
Ann Street	
Ann Street Annex	
Arts High School	
Avon Avenue	
Belmont Runyon	
Camden Street	
Central High School	
Chancellor Ave Annex	
Chancellor Avenue	
Dr. E. Alma Flagg	
Dr. William H. Horton	
East Side High School	
Elliott building (new)	
First Avenue	
Gladys Hillman Jones	
Harriet Tubman	
Hawkins Street	
Lafayette Annex #1: Immaculate Heart of Mary	
Lafayette Annex #3: St James	
Lafayette Street	
Lincoln	
Malcolm X. Shabazz High School	
McKinley	
Oliver Street	
Park Elementary	

Peshine Avenue	
Rafael Hernandez	
Science Park High School	
Speedway Avenue	
Sussex Avenue	
Technology High School	
University High School	
Wilson Avenue Annex	

Attachment B
Material Evaluation Inventory
(To be completed for each school)

Name of School:_____
Address: _____
Grade Levels: _____
Individual School Project Manager Signature: _____
Date: _____

Material of service line		
Material of internal plumbing/plumbing profile		
Point of entry or point of use treatment being utilized	Type	Locations
Filters	See Attachment C	
Drinking Water Fountains • Make and Model	Type	Locations
Out-of-service taps (permanent)	Type	Location
Plumbing repairs and replacements	Location	Description
Electrical wires grounded to water pipes	Location	

Attachment C
Filter Inventory
(To be completed for each school)

Name of School:_____
Address: _____
Grade Levels: _____
Individual School Project Manager Signature: _____
Date: _____

Location	Brand	Type	Date installed or Replace	Replacement Frequency	Capable of removing lead? Y/N

Attachment D
Water Outlet Inventory
(To be completed for each school)

Name of School:_____
Address:_____
Grade Levels:_____
Individual School Project Manager Signature: _____
Date: _____

Type	Code	Right or Left 1^{st}, 2^{nd}, 3^{rd} If applicable	Floor	Location/Description	Code for Sampling	Notes
EXAMPLE Kitchen faucet	KC	Left	1st	Back Kitchen Room 201	**KC201P** Kitchen Room 201 First Draw	**NA**

Attachment E

Flushing Log

(To be completed for each school)

Name of School: ____

Address:____

Grade Levels:____

Individual School Project Manager Signature: ______________________

Date: ___________

Sample Location Description	Sampling Code	Date	Time	How long flushed

Attachment F
Pre – Sampling Water Use Certification
(To be completed for each school)

TO BE COMPLETED BY THE NEWARK PUBLIC SCHOOL DISTRICT REPRESENTATIVE:		
School Name:		
Sample collection address:		
Water was last used:	Time:	Date:
Sample commencement:	Time:	Date:
I have read the Newark Public School Lead Sampling Plan and Quality Assurance Project Plan and I am certifying that samples were collected in accordance with these plans.		
Signature		Date