Leader
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920.001

December 14, 2016

Mr. Jose Correa
Director of Facilities
East Rochester School District
222 Woodbine Avenue
East Rochester, New York 14445

Re: Final Report of Drinking Water Sampling Results - BOCES School
East Rochester School District
East Rochester, New York

Dear Mr. Correa:

Leader Professional Services, Inc. ("Leader") has received the sample results for the East Rochester School District ("ERSD") drinking water sampling conducted on November 3, 2016. During this event 98 first draw samples were collected from the ERSD BOCES school on East Avenue.

Sampling Plan

Leader prepared a Sampling Plan for the ERSD project, which was originally prepared following USEPA's guidance document for investigating lead in drinking water at schools, "*3Ts for Reducing Lead in Drinking Water in Schools*" ("3T's"). Following the issuance of New York State Law and emergency regulations established by New York State Department of Health ("NYSDOH") for the sampling of drinking water in schools (A.10740/5.8158), the plan was reviewed and revised as needed. A copy of the sampling plan is provided as Appendix 1.

Leader sampled the potential outlets and fixtures of potable water as directed by ERSD. These initial samples were collected immediately after opening the outlet or fixture and after the school's plumbing has been inactive for at least 8 hours and no more than 18 hours. This sampling is referred to as "first draw" sampling. In addition to drinking water outlets, two samples were collected in each building to evaluate the water quality coming into the buildings and before it enters the building's distribution system. This is conducted by allowing the fixture closest to the main water supply line's entry into the building to flow after a first draw sample is collected. The amount of time the water is allowed to flow is based on the distance between the fixture and the point of entry. The water is allowed to flow for 30 seconds for the service water line sample and three minutes for the main water supply line sample following the USEPA's 3T's guidance document.

Sample Results

Tables 1 and 2 presents the lead concentrations in units of micrograms per liter ("ug/l") or parts per billion ("ppb"). Table 1 provides all of the sample results and Table 2 provides the results for locations which exceed the NYSDOH's action level of 15.0 ug/l (or 15.0 ppb). The sample results show that there are several potential drinking water locations that need to be addressed.

Leader retained ECS Laboratory Sciences ("ESC") to conduct the laboratory analysis of the drinking water samples. ESC's NYSDOH Environmental Laboratory Approval Program ("ELAP") certification number is 11742.

Remediation Plan

The New York State Law requires all fixtures and devices where lead is found above the action level be remediated. This may require termination of the use of the particular outlet, installation of a new fixture, installation of new plumbing or a filtering device. USEPA 3T's guidance identifies labeling as a solution, but NYSDOH considers this as only a temporary solution.

Leader recommends the following to guide ERSD's remediation steps:

- Terminate the water flow to the outlets fixtures with exceedances.
- Where a water outlet or fixture has been shut off, ERSD must provide another source of drinking water if one is not available. For example, if a classroom drinking water fountain must be shut off a drinking water fountain in the hallway is an adequate solution.
- Outlets that can not be shut off because the water is needed for other than drinking water (sanitation in restrooms, cleaning, classroom laboratories, etc.) are to be provided with a label that reads: not suitable for drinking water or not for consumption.
- ERSD should prioritize the remediation schedule; for example, drinking water fountains versus restroom sinks.
- Outlets identified for replacement should be re-sampled to determine if the fixture or the local plumbing is providing the lead to the water. Prior to sampling, the aerator screen, if present should be removed and cleaned. Where aerators are found to be dirty Leader recommends that the fixture be resampled to determine if it was the aerator contributing lead to the sample and then sampled again following flushing the fixture for 30 seconds. These samples will help determine if it was the aerator or the plumbing causing the lead. NYSDOH does not recommend only collecting the follow first draw sample because it may be masking a plumbing problem. The plumbing should be inactive for at least 8 hours and no more than 18 hours prior to sampling.
- Removing the fixture or terminating the water flow to the fixture, if the fixture is not needed.

- If the fixture is replaced, the plumbing is replaced or a filter is installed, a new first draw sample will be collected and analyzed.

Summary

Recently, Leader met with the Monroe County Department of Health ("MCDOH") regarding drinking water sampling. According to MCDOH, NYSDOH considers labeling as a non-permanent solution which can be removed by a student or a vandal. According to NYSDOH, warm water sources are not a strong enough deterant to prevent a child from drinking the water. ERSD should provide information to the school community (as required by the NYSDEOH regulations) that the school community should only use drinking water fountains or specific sinks designated for water consumption and allow the fixture to flow for approximately 10 seconds before using the fixture. The New York State Law and the NYSDOH regulations require continued monitoring to be conducted in 2020 or earlier.

If you have any questions about our report or the results, please call us at 585-248-2413.

Very truly yours,
LEADER PROFESSIONAL SERVICES, INC.

Peter von Schondorf
Senior Project Manager

Michael P. Rumrill
President

Attachment

cc: Donald Case, CIH, CSP – GVEP

TABLE 1
Lead in Drinking Water Sample Results
East Rochester School District - BOCES School
East Rochester, New York

Location	Room/Location	Sample Id.	Result	Type of Device	Notes
Morgan	M1	1	6.14	Janitorial sink	
Morgan	M1	2	<1.0	Janitorial sink	Service sample 30 sec.
Morgan	M1	3	<1.0	Janitorial sink	Main sample 3 min.
Morgan	M4	4	3.67	Hose bib	
Morgan	M5	5	6.18	Hand sink	Wood shop left sink first room
Morgan	M5	6	8.76	Hand sink	Wood shop right sink first room
Morgan	M5	7	6.93	Hand sink	Metal shop right sink
Morgan	M4	8	7.35	Janitorial sink	Paint room
Morgan	M33	9	3.2	Restroom sink	Men's RR left sink
Morgan	M33	10	2.63	Restroom sink	Men's RR right sink
Morgan	M34	11	3.62	Restroom sink	Women's RR left sink
Morgan	M34	12	7.62	Restroom sink	Women's RR right sink
Morgan	M37	13	81.1	Restroom sink	Womens RR left sink
Morgan	M37	14	10.6	Restroom sink	Womens RR middle sink
Morgan	M37	15	27.6	Restroom sink	Womens RR right sink
Morgan	M38	16	3.24	Restroom sink	Men's RR left sink
Morgan	M38	17	134	Restroom sink	Men's RR right sink
Morgan	M16	18	1.62	Kitchen sink	Home & Careers Island sink right
Morgan	M16	19	5.49	Kitchen sink	Home & Careers sink right
Morgan	MS20D	20	3.08	Janitorial sink	
Morgan	M10	21	5.63	Restroom	Womens locker room Left
Morgan	M10	22	6.16	Restroom	Womens locker room left center
Morgan	M10	23	44.1	Restroom	Womens locker room right center
Morgan	M10	24	34.7	Restroom	Womens locker room right center
Morgan	Gym	25	3.01	Restroom	Mens locker room left sink
Morgan	Gym	26	16.4	Restroom	Mens locker room right sink
Morgan	M110	27	35.3	Restroom	
Morgan	M134	28	2.2	Restroom	Men's RR left sink
Morgan	M134	29	2.16	Restroom	Men's RR right sink
Morgan	M218	30	3.18	Janitorial sink	
Morgan	M133	31	<1.0	Restroom	Men's RR left sink

Notes:
All results shown in units of micrograms per liter also known as parts per billion (ppb).

< = Value is below the laboratory reporting limit.

TABLE 1
Lead in Drinking Water Sample Results
East Rochester School District - BOCES School
East Rochester, New York

Morgan	M133	32	24.3	Restroom	Men's RR right sink
Morgan	M138	33	1.58	Restroom	Men's RR left sink
Morgan	M138	34	2.62	Restroom	Men's RR right sink
Morgan	M137	35	2.83	Restroom	Women's RR left sink
Morgan	M137	36	1.04	Restroom	Women's RR right sink
Morgan	M120A	37	32.6	Janitorial sink	
Morgan	M116	38	1.71	Classroom sink	1st. island east sink
Morgan	M116	39	3.44	Classroom sink	1st island west sink
Morgan	M116	40	9.52	Classroom sink	2nd. Island
Morgan	M116	41	1.5	Classroom sink	
Morgan	M234	42	2.03	Restroom sink	Mens RR left sink
Morgan	M234	43	3.68	Restroom sink	Mens RR right sink
Morgan	M233A	44	1.52	Janitorial sink	
Morgan	M233	45	1.18	Restroom sink	Womens RR left sink
Morgan	M233	46	1.98	Restroom sink	Womens RR right sink
Morgan	M242	47	4.01	Restroom sink	
Morgan	M232	48	1.69	Restroom sink	Mens RR left sink
Morgan	M232	49	2.3	Restroom sink	Mens RR right sink
Morgan	M231	50	1.27	Restroom sink	Womens RR left sink
Morgan	M231	51	1.44	Restroom sink	Womens RR right sink
Morgan	M218	52	94.1	Classroom sink	
Morgan	M218A	53	10.4	Janitorial sink	
Morgan	Tower Room	54	229	Classroom sink	
Morgan	Tower Room	55	448	Janitorial sink	
Bird	A4	56	<1.0	Restroom sink	Womens RR left sink
Bird	A4	57	1.59	Restroom sink	Womens RR right sink
Bird	A3	58	<1.0	Janitorial sink	
Bird	A2	59	<1.0	Restroom sink	Mens RR left sink
Bird	A2	60	1.81	Restroom sink	Mens RR right sink
Bird	Food Service Area	61	4.74	Janitorial sink	
Bird	Ice machine	62	<1.0		
Bird	Food Service Area	63	1.79	Hand sink	

Notes:
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TABLE 1
Lead in Drinking Water Sample Results
East Rochester School District - BOCES School
East Rochester, New York

Bird	A3B	64	1.01	Kitchen sink	Left side food prep sink
Bird	A3B	65	7.94	Kitchen sink	Food prep sprayer
Bird	A3B	66	4.48	Kitchen sink	Disposal sprayer
Bird	B10	67	1.05	Restroom sink	
Bird	B11	68	27.8	Restroom sink	Gym office
Bird	J01	69	8.88	Janitorial sink	
Bird	T1	70	2.71	Restroom sink	Mens RR left sink
Bird	T1	71	2.31	Restroom sink	Mens RR right sink
Bird	T2	72	3.7	Restroom sink	Womens RR left sink
Bird	T2	73	2.63	Restroom sink	Womens RR right sink
Bird	B6	74	2.61	Hand sink	
Bird	A104	75	1.55	Restroom sink	
Bird	B102	76	<1.0	Hand sink	Nurse's office near bandage station
Bird	B102	77	1.6	Restroom sink	Nurse's office
Bird	B102	78	19.2	Janitorial sink	
Bird	T14	79	5.21	Restroom sink	
Bird	T13	80	3.41	Restroom sink	
Bird	J11	81	2.22	Janitorial sink	
Bird	T11	82	2.28	Restroom sink	Mens RR left sink
Bird	T11	83	<1.0	Restroom sink	Mens RR center sink
Bird	T11	84	13.2	Restroom sink	Mens RR right sink
Bird	B109	85	2.46	Restroom sink	
Bird	B110	86	5.53	Restroom sink	
Bird	T12A	87	3.91	Restroom sink	
Bird	T12	88	1.95	Restroom sink	Womens RR left sink
Bird	T12	89	1.15	Restroom sink	Womens RR middle sink
Bird	T12	90	3.44	Restroom sink	Womens RR right sink
Bird	BT22	91	1.52	Restroom sink	Womens RR left sink
Bird	BT22	92	1.62	Restroom sink	Womens RR middle sink
Bird	BT22	93	1.65	Restroom sink	Womens RR right sink
Bird	BT23	94	2.27	Restroom sink	
Bird	BJ21	95	3.23	Janitorial sink	

Notes:
All results shown in units of micrograms per liter also known as parts per billion (ppb).

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TABLE 1
Lead in Drinking Water Sample Results
East Rochester School District - BOCES School
East Rochester, New York

Bird	BT21	96	1.9	Restroom sink	Mens RR left sink
Bird	BT21	97	1.82	Restroom sink	Mens RR center sink
Bird	BT21	98	1.82	Restroom sink	Mens RR right sink

Notes:
All results shown in units of micrograms per liter also known as parts per billion (ppb).

< = Value is below the laboratory reporting limit.

TABLE 2
Lead in Drinking Water Sample Result Exceedances
East Rochester School District - BOCES School
East Rochester, New York

Location	Room/Location	Sample Id.	Result	Type of Device	Notes
Morgan	Gym	26	16.4	Restroom	Mens locker room right sink
Bird	B102	78	19.2	Janitorial sink	
Morgan	M133	32	24.3	Restroom	Men's RR right sink
Morgan	M37	15	27.6	Restroom sink	Womens RR right sink
Bird	B11	68	27.8	Restroom sink	Gym office
Morgan	M120A	37	32.6	Janitorial sink	
Morgan	M10	24	34.7	Restroom	Womens locker room right center
Morgan	M110	27	35.3	Restroom	
Morgan	M10	23	44.1	Restroom	Womens locker room right center
Morgan	M37	13	81.1	Restroom sink	Womens RR left sink
Morgan	M218	52	94.1	Classroom sink	
Morgan	M38	17	134	Restroom sink	Men's RR right sink
Morgan	Tower Room	54	229	Classroom sink	
Morgan	Tower Room	55	448	Janitorial sink	

Notes:
All results shown in units of micrograms per liter also known as parts per billion (ppb).

NYSDOH Action Level for lead is 15 ppb.

Appendix 1
Sampling Plan

SAMPLING AND ANALYSIS PLAN
East Rochester School District

Prepared for:
East Rochester School District
222 Woodbine Avenue
East Rochester, New York 14445

Prepared by:
Leader Professional Services, Inc.
271 Marsh Road, Suite 2
Pittsford, New York

December 2016

920.001

Leader

INTRODUCTION

This plan was prepared by Leader Professional Services, Inc. ("Leader") for the East Rochester School District ("ESD") drinking water project. The plan covers the goals for the project, including management, health and safety, sampling protocols, data review and sample handling.

Project Goals

The goal of the project is to sample all sources of drinking water within the school buildings and grounds of ESD; analyze the samples for lead; and to evaluate the data in accordance with the USEPA's 2006 Revised Technical Guidance, *3T's for Reducing Lead in Drinking Water in Schools* and New York State new law (A.10740/5.8158) for public schools.

The drinking water sampling for this project will be conducted in phases: the first phase will be to collect first draw samples to measure the worst case concentration of lead from the drinking water devices and fixtures. Drinking water devices will be defined as fountains, bubblers, sinks (found in the offices of the school Nurse, kitchen, concession stands, etc.), and faucets where water could be taken and used for drinking purposes (athletic fields, concessions, etc.). The second phase of the sampling will be performed, as needed, after the first draw samples are reviewed and problematic devices are identified. These devices may be sampled after allowing the water to flow for 30 seconds. This type of sampling is also known as post-flush sampling. The sampling procedure will help define if the device is the problem or the piping leading to the source is the problem.

Project Management

Michael Rumrill – Project Director, will authorize any substantive changes to the scope of work and authorize the analysis of additional samples.

Katherine Root, CIH, CSP – Health and Safety and Sampling Protocols, Ms. Root will address all health and safety issues and sampling protocol questions.

Peter von Schondorf – Project Manager, Mr. von Schondorf will manage sampling paper work, address sampling issues and project concerns related to sampling problems, laboratory issues, and logistics.

Health and Safety

Personal Protective Equipment
There are no personal protective equipment requirements for this project with the exception of using latex gloves. The latex gloves will be used to remove any contact with the sample, the preserving acid and sources of contamination. Gloves should be worn at each sample location to remove a potential for injury due to a spill of the preserving acid (nitric acid), acidified sample and cross contamination from handling things including doors, car doors, sample coolers, and fixture

controls. Safety glasses can also be worn, however, it is optional because the amount of acid present in the sample bottle is small.

Chemical Hazard
Each of the bottles will have a few milliliters of nitric acid to preserve sample. Consequently there is a risk of getting burned if the acid is spilled. There is also a risk of a burn if the acidified sample is spilled.

If the acid spills on you, wash it off immediately using a nearby sink or fountain. If the acid or the acidified water falls on the floor, alert our escort and attempt to clean up the spill with absorbent material. Wear gloves. Use paper towels and water to absorb the spill and dispose in plastic lined trash can or as directed by our escort. Do not attempt to use an uncovered hand.

Physical Hazard
Two physical hazards have been identified; slip/trip hazards and lifting hazards. The spillage of a sample or splashing of water onto the floor around the device can cause a slipping hazard. If water is spilled, notify our escort and attempt to clean it up. Also, walking up and down stairs while carrying sampling equipment or writing notes can lead to a fall. Write notes either at the central receiving desk or at the sampling location. A sample cooler filled with sample bottles and ice will weigh about 40 pounds. Ask for assistance when attempting to move or carry a filled sample cooler.

Sample Bottles
Sample bottles will arrive from the laboratory in shipping coolers for each project. Please be aware depending on the laboratory completing the analysis, the sample bottle may have a small drop of acid in them so if you spill the sample or open the bottle and get acid on you, wash it off immediately.

Each bottle will be the labeled and given a unique sample number appropriate for the project, project number, date and time. The Project Manager will specify the numbering scheme for each project. It will be the sampler's responsibility to complete some or all of sample label and to complete the sample form for each sample.

Whatever number is used on the sample bottle it will correspond to the sample completion form and the chain of custody form. The chain of custody form is not only a contract between Leader and the laboratory, it is the link between the sample, sample location and the laboratory identification number used by the laboratory in their data management system.

After you collect our sample set, return the sample bottles to the appropriate cooler. Completed forms will be placed in a box on the desk.

Protocols for Sampling Based on USEPA's Technical Guidance for Reducing Lead in Drinking Water in Schools (Revised 2006)

First Draw Samples

Identify the location of the sample. The location number will match either the number on the sampling bottle or specific locations you were given. At the time of sampling also evaluate the fixture and the setting: Does the fixture potentially have a chiller or a remote cooling source? Does the faucet have an aerator? Does the fixture leak? Does the fixture appear not to be in regular use? These notes will help evaluate the sample results and make decisions on further action (no additional sampling, labeling, cleaning the aerator, or removing the source). Carry a paper towel or cloth to dry the sample exterior of the bottle as needed.

The purpose of the first draw sample is to obtain water that has been sitting in the fixture for 8-18 hours. The sample will be collected in a 250 milliliter plastic bottle from a low flow stream of water from the source. Fill the bottle to the neck and secure the lid. Wipe off any drips and complete the label and sampling form. Use the sample number identified at the source.

Bring the filled sample bottles back to the desk and place the bottle in the appropriate cooler. Place the completed sampling forms in the appropriate box. Obtain new bottles and return to sampling.

Post-Flush Samples

The EPA provides specific instructions for the flushed samples based on individual device type. Follow-up flush samples are taken only from outlets identified as problem locations based on the first draw sampling. The purpose of the follow-up flush sample is to determine the lead level of water that has been stagnant in the upstream plumbing, but not in the outlet fixture. In general, a small pencil-size stream of water is released for 30 seconds prior to collecting the sample.

Depending on the device, in which water is stored in a pipe coil or reservoir, problem devices will be flushed for 15 minutes to ensure all stagnant water has been removed, prior to collecting the follow-up flush sample. This should be done in the afternoon. The following morning, an additional follow-up first draw sample will be collected from the water cooler. This follow-up first draw sample is representative of water that has been in contact with the cooler overnight not in extended contact with the plumbing upstream.

The sample will be collected in a 250 milliliter plastic bottle from a low flow stream of water from the source. Fill the bottle to the neck and secure the lid. Wipe off any drips and complete the label and sampling form. Use the sample number identified at the source. Bring the filled sample bottles back to the desk and place the bottle in the appropriate cooler. Place the completed sampling forms in the appropriate box. Obtain new bottles and return to sampling.

Sample Analysis

All samples sent to ESC Lab Sciences ("ESC") will be analyzed using drinking water methods for lead (USEPA Method 200.7 or 200.9). ESC is certified by the NYSDOH for conducting lead and copper analysis in drinking water in New York. Prior to the sample being submitted for analysis, the samples will be acidified to a pH of <2. Once the samples have been acidified they will have a holding time of six (6) months. Samples will be submitted to ESC at the completion of the sampling

day or when it makes sense to submit the samples. ESC provides FedEx shipping with the analysis. It is the Project Manager's responsibility to arrange for dropping off the samples or notifying FedEx to pick up the samples at Leader's office.

Data Review and Management

Data will be submitted to Leader electronically through ESC Project Management online software. The reviewer will check the data package narrative for problems associated with the analysis and a summary of testing. This will include a review of the chain of custody to make sure samples were received on time and the analysis was done promptly. The reviewer will download the data and review any qualifier placed on the results and refer to the narrative for an explanation.

The data reviewer will then sort the data and add appropriate geographic information regarding the sample results. This will take matching the laboratory identifications with the chain of custody identifications and the sample form. The data will be reviewed to identify exceedances to the NYSDOH's 15 µg/L Action Level for public school systems. The data will also be analyzed to determine if there are any similarities between the sample locations and concentration. The sampling notes will also be reviewed to determine which sample may be influenced by the type of fixture (bubbler, chilled water fountain or faucet), or if the fixture did not appear to be in regular use. For example, are elevated levels in one wing, on one floor, sinks, etc. Sample set maximum and minimum, and average will be determined for each building, and the number of samples, as a percentage, which exceed the appropriate action level. These data will be utilized as the basis for corrective action recommendation

Appendix 2
Laboratory Reports