

# POST-FIXTURE REPLACEMENT SAMPLING RESULTS REPORT

Sand Castles Child Development



October 13, 2016

## INTRODUCTION

During the week of April 4, 2016, the Department of Licensing and Regulatory Affairs (DLARA) completed replacement of drinking water fixtures at Sand Castles Child Development. These fixture replacements were required because testing results indicated that the older fixtures at most schools were imparting lead to the drinking water. After the fixtures were replaced, a more thorough flushing of the plumbing lines was completed to remove any remaining material from the building's water supply system.

On Saturday, April 9, 2016, the Department of Environmental Quality conducted a post-fixture sampling assessment of the plumbing system at the facility.

For the protection of public health, DLARA started offering the installation of filters at schools and daycare facilities in Flint. This work began in July, 2016.

### Water Main Description

The water main enters the building on the Northeast corner of the building under the floor. The water main was underwater. The water distribution consisted of copper piping.

## SAMPLING METHODS

### Fixture Sampling

There are nineteen drinking water fixtures that were identified at the facility. After a minimum six-hour stagnation period, four samples were collected at each of the fixtures identified. Two initial samples were collected immediately after turning on the tap. The water was then flushed for 30 seconds and a third sample was collected. Finally, the water was flushed for another two minutes, and the fourth sample was collected. These samples were used to determine the impact of any lead sources in and around each specific fixture and its connecting plumbing.

### Deep Plumbing Sampling

A different sampling method is used to determine the impact of any lead sources located deep in the supply plumbing of the building. During this method, ten bottles are collected in a row (consecutively). These bottles are one liter in size, which is larger than those used for the fixture sampling method.

## Sampling Notes

- Seventy-six samples from nineteen fixtures were collected and sent to the lab for analysis.
- Ten samples from one specific fixture were collected and sent to the lab for analysis for the deeper plumbing assessment.
- The owners of the facility indicated that construction was being conducted in the neighborhood the week before sampling and they were noticing sediment in the water.
- Aerators were inspected and cleaned after the sampling. Many of the aerators had debris present.

## SAMPLING RESULTS

### Post-Fixture Replacement

April 9, 2016

Of the 86 samples:

- Lead Range: Non-Detected (ND) to 27 parts per billion (ppb)
- Copper Range: ND to 410 ppb

\* Where the result is non-detected for lead it means that the amount of lead in the water was less than 1 ppb.

\* Where the result is non-detected for copper it means that the amount of copper in the water was less than 50 ppb.

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Lead	Result ppb	Sample Description	Site Code	Copper	Result ppb
Lead	7	01 DW001	P1	Copper	160
Lead	11	01 DW001	P2	Copper	120
Lead	1	01 DW001	F01	Copper	ND
Lead	ND	01 DW001	F02	Copper	ND
Lead	6	01 CF002	P1	Copper	120
Lead	ND	01 CF002	P2	Copper	ND
Lead	ND	01 CF002	F01	Copper	ND
Lead	ND	01 CF002	F02	Copper	ND
Lead	12	01 CF003	P1	Copper	200
Lead	11	01 CF003	P2	Copper	140
Lead	ND	01 CF003	F01	Copper	ND
Lead	ND	01 CF003	F02	Copper	ND
Lead	13	01 CF004	P1	Copper	190
Lead	15	01 CF004	P2	Copper	180
Lead	ND	01 CF004	F01	Copper	ND
Lead	ND	01 CF004	F02	Copper	ND
Lead	15	01 CF005	P1	Copper	230
Lead	16	01 CF005	P2	Copper	150
Lead	ND	01 CF005	F01	Copper	ND
Lead	ND	01 CF005	F02	Copper	ND
Lead	3	01 DW006	P1	Copper	170
Lead	ND	01 DW006	P2	Copper	ND
Lead	ND	01 DW006	F01	Copper	ND
Lead	ND	01 DW006	F02	Copper	ND
Lead	8	01 CF007	P1	Copper	120
Lead	2	01 CF007	P2	Copper	ND
Lead	ND	01 CF007	F01	Copper	ND
Lead	ND	01 CF007	F02	Copper	ND
Lead	7	01 CF008	P1	Copper	410
Lead	5	01 CF008	P2	Copper	160
Lead	2	01 CF008	F01	Copper	ND
Lead	ND	01 CF008	F02	Copper	ND
Lead	7	01 CF009	P1	Copper	300
Lead	3	01 CF009	P2	Copper	180
Lead	ND	01 CF009	F01	Copper	ND
Lead	ND	01 CF009	F02	Copper	ND
Lead	27	01 CF010	P1	Copper	150
Lead	24	01 CF010	P2	Copper	160
Lead	2	01 CF010	F01	Copper	60
Lead	ND	01 CF010	F02	Copper	ND
Lead	13	01 DW011	P1	Copper	110
Lead	2	01 DW011	P2	Copper	ND
Lead	ND	01 DW011	F01	Copper	ND

Non-detected (ND) means; for lead the amount in water is less than

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Lead	Result ppb	Sample Description	Site Code	Copper	Result ppb
Lead	ND	01 DW011	F02	Copper	ND
Lead	2	01 CF012	P1	Copper	70
Lead	ND	01 CF012	P2	Copper	ND
Lead	1	01 CF012	F01	Copper	ND
Lead	2	01 CF012	F02	Copper	ND
Lead	1	01 KC013	P1	Copper	200
Lead	ND	01 KC013	P2	Copper	230
Lead	ND	01 KC013	F01	Copper	70
Lead	ND	01 KC013	F02	Copper	ND
Lead	7	01 DW014	P1	Copper	60
Lead	7	01 DW014	P2	Copper	150
Lead	2	01 DW014	F01	Copper	ND
Lead	ND	01 DW014	F02	Copper	ND
Lead	5	01 CF015	P1	Copper	90
Lead	ND	01 CF015	P2	Copper	ND
Lead	ND	01 CF015	F01	Copper	ND
Lead	ND	01 CF015	F02	Copper	ND
Lead	8	01 CF016	P1	Copper	330
Lead	6	01 CF016	P2	Copper	170
Lead	ND	01 CF016	F01	Copper	ND
Lead	ND	01 CF016	F02	Copper	ND
Lead	9	01 CF017	P1	Copper	190
Lead	9	01 CF017	P2	Copper	160
Lead	ND	01 CF017	F01	Copper	ND
Lead	ND	01 CF017	F02	Copper	ND
Lead	8	01 CF018	P1	Copper	130
Lead	8	01 CF018	P2	Copper	90
Lead	ND	01 CF018	F01	Copper	ND
Lead	ND	01 CF018	F02	Copper	ND
Lead	2	01 DW019	P1	Copper	120
Lead	ND	01 DW019	P2	Copper	ND
Lead	ND	01 DW019	F01	Copper	ND
Lead	ND	01 DW019	F02	Copper	ND
Lead	ND	01 KC013	CA1	Copper	ND
Lead	ND	01 KC013	CA2	Copper	ND
Lead	ND	01 KC013	CA3	Copper	ND
Lead	ND	01 KC013	CA4	Copper	ND
Lead	ND	01 KC013	CA5	Copper	ND
Lead	ND	01 KC013	CA6	Copper	ND
Lead	ND	01 KC013	CA7	Copper	ND
Lead	ND	01 KC013	CA8	Copper	ND
Lead	ND	01 KC013	CA9	Copper	ND
Lead	ND	01 KC013	CA10	Copper	ND

Non-detected (ND) means; for lead the amount in water is less than