

1507 Chambers Road / Columbus OH, 43212 (614) 488-1022

April 29<sup>th</sup>, 2016

**Attention:** Christopher Potts, Executive Director of Business Services  
Upper Arlington City Schools

**phone:** (614) 487-5000

**email:** [cpotts@uaschools.org](mailto:cpotts@uaschools.org)

**Re:** Drinking water testing at:

Nine (9) Upper Arlington Schools

**Sampling Date:** April 23<sup>rd</sup>, 2016  
**Analytes:** Copper, Lead, Zinc

Dear Mr. Potts,

Enclosed please find the results of the drinking water testing done at nine (9) Upper Arlington schools in Upper Arlington, Ohio.

The following is an overview of the applicable state and federal regulations, a summary of the work effort, and a discussion of the results.

# I. Applicable Regulations:

## Environmental Protection Agency (EPA):

Lead and copper enter drinking water primarily through plumbing materials. Exposure to lead and copper may cause health problems ranging from stomach distress to brain damage.

In 1991, EPA published a regulation to control lead and copper in drinking water. This regulation is known as the Lead and Copper Rule (also referred to as the LCR). Since 1991 the LCR has undergone various revisions.

The treatment technique for the rule requires systems to monitor drinking water at customer taps. If lead concentrations exceed an action level of 15 ppb or copper concentrations exceed an action level of 1.3 ppm in more than 10% of customer taps sampled, the system must undertake a number of additional actions to control corrosion.

If the action level for lead is exceeded, the system must also inform the public about steps they should take to protect their health and may have to replace lead service lines under their control.

The EPA currently has no established action level for zinc. See the table below.

### Table of Secondary Drinking Water Standards

<b>Contaminant</b>	<b>Secondary MCL</b>	<b>Noticeable Effects above the Secondary MCL</b>
Aluminum	0.05 to 0.2 mg/L*	colored water
Chloride	250 mg/L	salty taste
Color	15 color units	visible tint
Copper	1.0 mg/L	metallic taste; blue-green staining
Corrosivity	Non-corrosive	metallic taste; corroded pipes/ fixtures staining
Fluoride	2.0 mg/L	tooth discoloration
Foaming agents	0.5 mg/L	frothy, cloudy; bitter taste; odor
Iron	0.3 mg/L	rusty color; sediment; metallic taste; reddish or orange staining
Manganese	0.05 mg/L	black to brown color; black staining; bitter metallic taste
Odor	3 TON (threshold odor number)	"rotten-egg", musty or chemical smell

pH	6.5 - 8.5	low pH: bitter metallic taste; corrosion high pH: slippery feel; soda taste; deposits
Silver	0.1 mg/L	skin discoloration; graying of the white part of the eye
Sulfate	250 mg/L	salty taste
Total Dissolved Solids (TDS)	500 mg/L	hardness; deposits; colored water; staining; salty taste
Zinc	5 mg/L	metallic taste

\*mg/L is milligrams of substance per liter of water.

## II. Summary:

On Saturday, April 23<sup>rd</sup>, 2016, Lyle Environmental personnel (technician: Tom Eggers) conducted drinking water testing at the following schools (times included):

- 1) Greensview Elementary School  
4301 Greensview Dr.  
Columbus, OH 43220  
Testing time: 7:55 am
- 2) Burbank Early Childhood School  
4770 Burbank Dr.  
Columbus, OH 43220  
Testing time: 8:12 am
- 3) Windermere Elementary School  
4101 Windermere Rd.  
Columbus, OH 43220  
Testing time: 8:34 am
- 4) Hastings Middle School  
1850 Hastings Ln.  
Columbus, OH 43220  
Testing time: 8:52 am
- 5) Upper Arlington High School  
1650 Ridgeview Rd.  
Columbus, OH 43221  
Testing time: 9:11 am
- 6) Tremont Elementary School  
2900 Tremont Rd.  
Upper Arlington, OH 43221  
Testing time: 9:28 am

- |    |  |                        |
|----|--|------------------------|
| 7) | Wickliffe Elementary School<br>2405 Wickliffe Rd.<br>Columbus, OH 43221        | Testing time: 9:47 am  |
| 8) | Jones Middle School<br>2100 Arlington Ave.<br>Columbus, OH 43221               | Testing time: 10:04 am |
| 9) | Barrington Road Elementary School<br>1780 Barrington Rd.<br>Columbus, OH 43221 | Testing time: 10:22 am |

At each school, water samples were taken in two places: in (what was determined on-site to be) the main faucet in the school kitchen, and (what was determined on-site to be) a heavily used drinking fountain. As the sampling was done on a Saturday morning, and as the areas appeared dry, it is assumed that the faucets and drinking fountains sat unused for a minimum of 8 hours before sampling. After sampling at each location, meter readings were taken, including temperature, pH, electrical conductivity (EC; milli-Siemens/cm), and dissolved solids (ppm).

See results below.

### III. Sampling Results:

**Note:** ND = Not Detected

**Sample ID: #1**

Sampling Site: Greensview Elementary School  
Description: Kitchen Faucet

Temperature:	22.1 °C
pH:	7.53
EC:	.34 mS/cm
solids:	240 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	ND	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.221	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #2**

Sampling Site: Greensview Elementary School  
 Description: Drinking Fountain (outside cafeteria)

Temperature: 16.3 °C  
 pH: 7.63  
 EC: .35 mS/cm  
 solids: 250 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	ND	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.119	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #3**

Sampling Site: Burbank Early Childhood School  
 Description: Kitchen Faucet

Temperature: 23.1 °C  
 pH: 7.51  
 EC: .26 mS/cm  
 solids: 180 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.026	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.259	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #4**

Sampling Site: Burbank Early Childhood School  
 Description: Drinking Fountain (outside cafeteria)

Temperature: 24.9 °C  
 pH: 7.57  
 EC: .28 mS/cm  
 solids: 200 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	ND	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.191	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #5**

Sampling Site: Windermere Elementary School  
Description: Kitchen Faucet

Temperature: 19.9 °C  
pH: 7.58  
EC: .09 mS/cm  
solids: 60 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.165	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.278	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #6**

Sampling Site: Windermere Elementary School  
Description: Drinking Fountain (across from room 116)

Temperature: 22.8 °C  
pH: 7.44  
EC: .29 mS/cm  
solids: 200 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.100	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.164	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #7**

Sampling Site: Hastings Middle School  
Description: Kitchen Faucet (main sink)

Temperature: 21.4 °C  
pH: 7.62  
EC: .32 mS/cm  
solids: 220 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	ND	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.286	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #8**

Sampling Site: Hastings Middle School  
 Description: Drinking Fountain (near teachers' lounge)

Temperature: 14.6 °C  
 pH: 7.68  
 EC: .29 mS/cm  
 solids: 210 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.035	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.221	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #9**

Sampling Site: Upper Arlington High School  
 Description: Kitchen Faucet (sink near coffee maker)

Temperature: 21.9 °C  
 pH: 7.40  
 EC: .37 mS/cm  
 solids: 260 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.036	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.260	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #10**

Sampling Site: Upper Arlington High School  
 Description: Drinking Fountain (near auditorium entrance, section c)

Temperature: 11.5 °C  
 pH: 7.58  
 EC: .36 mS/cm  
 solids: 250 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.132	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.180	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #11**

Sampling Site: Tremont Elementary School  
 Description: Kitchen Faucet

Temperature: 21.1 °C  
 pH: 7.51  
 EC: .36 mS/cm  
 solids: 250 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.109	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.234	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #12**

Sampling Site: Tremont Elementary School  
 Description: Drinking Fountain (outside cafeteria)

Temperature: 12.5 °C  
 pH: 7.65  
 EC: .34 mS/cm  
 solids: 230 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.155	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.193	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #13**

Sampling Site: Wickliffe Elementary School  
 Description: Kitchen Faucet (main sink)

Temperature: 23.7 °C  
 pH: 7.06  
 EC: .05 mS/cm  
 solids: 30 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.125	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	1.00	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB



**Sample ID: #14**

Sampling Site: Wickliffe Elementary School  
Description: Drinking Fountain (cafeteria)

Temperature: 16.6 °C  
pH: 7.44  
EC: .29 mS/cm  
solids: 200 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	ND	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.168	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #15**

Sampling Site: Jones Middle School  
Description: Kitchen Faucet (main sink)

Temperature: 23.4 °C  
pH: 7.21  
EC: .37 mS/cm  
solids: 260 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.188	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	11.3	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.869	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #16**

Sampling Site: Jones Middle School  
Description: Drinking Fountain (cafeteria)

Temperature: 14.8 °C  
pH: 7.40  
EC: .31 mS/cm  
solids: 210 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.048	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.203	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #17**

Sampling Site: Barrington Road Elementary School  
Description: Kitchen Faucet (main sink, left faucet)

Temperature: 23.4 °C  
pH: 7.15  
EC: .37 mS/cm  
solids: 260 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.055	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.362	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Sample ID: #18**

Sampling Site: Barrington Road Elementary School  
Description: Drinking Fountain (short fountain near cafeteria)

Temperature: 15.6 °C  
pH: 7.31  
EC: .04 mS/cm  
solids: 30 ppm

Metals by EPA 200 Series Methods

Analyte	Results	Units	Limit	Reporting Prepared	Analyzed	Method	Analyst
Copper	0.087	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB
Lead	ND	ug/l (ppb)	5.00	4/26/16	4/28/16	EPA 239.2	MWB
Zinc	0.207	mg/L (ppm)	0.025	4/26/16	4/28/16	EPA 200.7	MWB

**Note:** See Laboratory Results in Appendix A

## V. Discussion:

All of the lead and copper testing results came back under EPA's established action levels (Zinc has no applicable action level). The only testing site that approached an action level was the main sink at Jones Middle School (sample #15). The lead level at this testing location was measured at 11.3 parts per billion (ppb). Keep in mind that EPA's action level for lead is 15 ppb.

All other testing results were within normal ranges.

Respectfully submitted,

*Thomas Eggers*

*April 29<sup>th</sup>, 2016*

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Thomas Eggers  
Manager  
Lyle Environmental

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Date

ELECTRONICALLY CERTIFIED

# **Appendix A**



# ADVANCED ANALYTICS LABORATORIES, INC.

1025 CONCORD AVENUE  
COLUMBUS, OHIO 43212  
(614) 299-9922 FAX (614) 299-4002

*Analysis & Testing - Quality Control Programs - Research & Development*

Lyle Environmental  
1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

## ANALYTICAL RESULTS

Client Sample I.D.: #1  
AALI Sample I.D.: 1604081-01 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	ND	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.221	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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Advanced Analytics Laboratories, Inc.

L. Eve Karnitis, President



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Lyle Environmental  
1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #2  
AALI Sample I.D.: 1604081-02 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	ND	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	<b>0.199</b>	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

## ANALYTICAL RESULTS

Client Sample I.D.: #3  
AALI Sample I.D.: 1604081-03 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

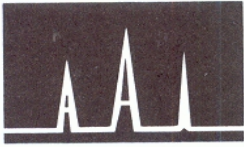
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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<hr/> <b>Metals by EPA 200 Series Methods</b> <hr/>								
Copper	0.026	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.259	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #4  
AALI Sample I.D.: 1604081-04 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	ND	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	<b>0.191</b>	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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Lyle Environmental  
1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

## ANALYTICAL RESULTS

Client Sample I.D.: #5  
AALI Sample I.D.: 1604081-05 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<hr/> <b>Metals by EPA 200 Series Methods</b> <hr/>								
Copper	0.165	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.278	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #6  
AALI Sample I.D.: 1604081-06 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	0.100	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.164	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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1507 Chambers Road  
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Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #7  
AALI Sample I.D.: 1604081-07 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	ND	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	<b>0.286</b>	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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(614) 299-9922 FAX (614) 299-4002

*Analysis & Testing - Quality Control Programs - Research & Development*

Lyle Environmental  
1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #8  
AALI Sample I.D.: 1604081-08 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	0.035	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.221	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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*Analysis & Testing - Quality Control Programs - Research & Development*

Lyle Environmental  
1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #9  
AALI Sample I.D.: 1604081-09 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	0.036	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.260	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #10  
AALI Sample I.D.: 1604081-10 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	0.132	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.180	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

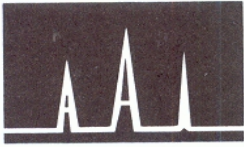
Client Sample I.D.: #11  
AALI Sample I.D.: 1604081-11 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	0.109	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.234	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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Lyle Environmental  
1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #12  
AALI Sample I.D.: 1604081-12 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	0.155	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.193	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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Lyle Environmental  
1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #13  
AALI Sample I.D.: 1604081-13 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	0.125	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	1.00	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #14  
AALI Sample I.D.: 1604081-14 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	ND	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	<b>0.168</b>	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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Lyle Environmental  
1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

## ANALYTICAL RESULTS

Client Sample I.D.: #15  
AALI Sample I.D.: 1604081-15 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<hr/> <b>Metals by EPA 200 Series Methods</b> <hr/>								
Copper	0.188	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	11.3	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.869	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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Lyle Environmental  
1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #16  
AALI Sample I.D.: 1604081-16 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

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Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	0.048	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.203	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #17  
AALI Sample I.D.: 1604081-17 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	0.055	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.362	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

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Lyle Environmental  
1507 Chambers Road  
Columbus, OH 43212

Date Reported: 4/29/16

Project: 042316-1  
P.O. Number: [none]  
Project Manager: Tom Eggers Jr.

**ANALYTICAL RESULTS**

Client Sample I.D.: #18  
AALI Sample I.D.: 1604081-18 (Water)

Date Collected: 4/23/16  
Date Received: 4/25/16

Analyte	Result	Units	Reporting Limit	Prepared	Analyzed	Method	Analyst	Notes
<b>Metals by EPA 200 Series Methods</b>								
Copper	0.087	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	
Lead	ND	ug/L	5.00	4/26/16	4/28/16	EPA 239.2	MWB	
Zinc	0.207	mg/L	0.025	4/26/16	4/28/16	EPA 200.7	MWB	

**Notes and Definitions**

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit

Advanced Analytics Laboratories, Inc.

L. Eve Karnitis, President