ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

46555 Humboldt Drive
Novi, Michigan 48377
Telephone 248-669-5140
www.atcgroupservices.com

September 7, 2018

Mathew Sam
Detroit Public Schools
1601 Farnsworth
Detroit, Michigan 48202

SUBMITTED VIA EMAIL TO: mathew.sam@detroitk12.org

SUBJECT: **Drinking Water Screening Report**
Ann Arbor Trail Magnet School
7635 Chatham
Detroit, Michigan

Dear Mr. Sam:

ATC Group Services, LLC (ATC) is pleased to submit this Drinking Water Screening Report for the subject school. The drinking water samples collected from the school were submitted to Pace Analytical Services, LLC, for Michigan Department of Environmental Quality (MDEQ) Drinking Water Certified lead and copper analysis.

SCOPE OF WORK

At the request of the Detroit Public Schools (DPS), ATC collected drinking water samples as a general screening for copper and lead at the subject school. The water sampling conducted included the sampling of fixtures within teacher's lounges, kitchens, water fountains and pre-k classrooms. One (1) sample was collected at each outlet: a first draw (Primary) sample. The Primary samples were collected from outlets that had been inactive for a minimum of eight to eighteen hours. The fixture inventory locations including the sample locations are shown on the Fixture Inventory Locations Map included under Attachment A and fixture inventory photos including the sample location photos are included in a Fixture Inventory Photo Log under Attachment B.

The drinking water samples were collected in 125 milliliter, wide-mouth sample containers, containing nitric acid (preservative). Each sample container was labeled utilizing a unique coding system that identified: the type of drinking outlet sampled as well as the location.

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The samples were transported under chain of custody to Pace Analytical Services, LLC, located at 5560 Corporate Exchange Ct. SE Grand Rapids, MI for MDEQ drinking water certified lead and copper analysis, using analytical method EPA 200.8 rev 5.4.

FINDINGS

Analytical results indicate that 1 of the samples analyzed were above the EPA recommended limits of 15 micrograms per liter (ug/L) for lead. None of the samples analyzed were above the EPA recommended limits of 1300 micrograms per liter (ug/L) for copper. The table below summarizes the analytical results for the samples submitted. The laboratory analytical reports and chain of custody are provided in Attachment C.

Table 1 – Water Testing Results (July 31, 2018)

Sample Number	Location	Description	Total Lead (ug/l)	Total Copper (ug/l)
1-Hall- B- 1	Next to room 109	left	13.8 ug/L	253 ug/L
1-Hall- B-2	Next to room 109	right	9.9 ug/L	307 ug/L
1-Hall- B- 3	Across from room 110	left	6.5 ug/L	118 ug/L
1-Hall- B- 4	Across from room 110	right	2.8 ug/L	77.1 ug/L
1-107-CF-5	Room 107- Pre K	single faucet	2.8 ug/L	103 ug/L
1-108-CF/B-6	Room 108- Pre K	single faucet	6.4 ug/L	138 ug/L
1-Hall- B-7	Next to gym	left	2.0 ug/L	30 ug/L
1-Hall- B-8	Next to gym	right	2.8 ug/L	31.5 ug/L
1-Hall- B-9	Across from room 104	left	4.2 ug/L	156 ug/L
1-Hall- B-10	Across from room 104	right	4.0 ug/L	227 ug/L

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Sample Number	Location	Description	Total Lead (ug/l)	Total Copper (ug/l)
1-Hall- B-11	Across from room 102	left	4.0 ug/L	99.1 ug/L
1-Hall- B-12	Across from room 102	right	2.4 ug/L	112 ug/L
1-101-B-13	Room 101	Bubbler	**26.2 ug/L**	275 ug/L
1-K-KS-14	Kitchen	3 chamber sink, 1 faucet	2.3 ug/L	569 ug/L
1-K-KS-15	Kitchen	Hand sink	2.3 ug/L	307 ug/L
1-MO-SRF-16	Main Office	single faucet	5.2 ug/L	338 ug/L
1-Port-B-17	Portable M1	left	2.3 ug/L	1150 ug/L
1-Port-B-18	Portable M1	right	2.3 ug/L	1020 ug/L

Key: NA - Not Analyzed

ug/L- micrograms per liter /parts per billion (ppb)

Analysis of samples of the bubbler in room 101 indicate that lead levels were above the MCL. No samples indicate that copper levels were above the MCL. See recommendations below.

RECOMMENDATIONS

For drinking water fixtures that exceed the MCL after the initial sampling, ATC recommends the following:

1. Implement a plan in accordance with MDEQ Guidance on Drinking Water Sampling for Lead and Copper, April, 2016 Version2; OR
2. Remove fixture from service.
3. Implement a flush plan for fixtures that exceed the MCL of the initial sample according to MDEQ Guidance and the EPA's 3T's for Reducing Lead in Drinking Water in Schools.

LIMITATIONS

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The sampling and analysis completed was: a preliminary screening for lead and copper only, to assess lead and copper concentrations (ug/L) at drinking water outlets in the school designated as high use by DPS, and may not be representative of all drinking water outlets within the school. If lead or copper concentrations were identified above their respective MCL's at any of the drinking water outlets tested, further review of the plumping system, fixtures affected, and testing may be completed to assess the source of the elevated levels of lead and/or copper, as well as, any other response actions deemed necessary by DPS.

Future drinking water evaluation and sampling in accordance with the recommendations may be predicated on applicable guidelines by the MDEQ or EPA and will be determined prior to developing a sampling plan for the school.

Sincerely,

ATC Group Services, LLC

Martin K. Gamble
Senior Project Manager

Robert C. Smith
Building Science Department Manager

Attachments

Attachment A: Fixture Inventory Locations Map/Form
Attachment B: Fixture Inventory Photo Log
Attachment C: Laboratory Analytical Report

School Name: Ann Arbor Trail Magnet School

Address 7635 Chatham

Fixture Identification	Fixture Location	Fixture Description	Photo #
1-Hall- B- 1	Next to room 109	left	1
1-Hall- B-2	Next to room 109	right	2
1-Hall- B- 3	Across from room 110	left	3
1-Hall- B- 4	Across from room 110	right	4
1-107-CF-5	Room 107- Pre K	single faucet	5
1-108-CF/B-6	Room 108- Pre K	single faucet	6
1-Hall- B-7	Next to gym	left	7
1-Hall- B-8	Next to gym	right	8
1-Hall- B-9	Across from room 104	left	9
1-Hall- B-10	Across from room 104	right	10
1-Hall- B-11	Across from room 102	left	11
1-Hall- B-12	Across from room 102	right	12

1-101-B-13	Room 101		13
1-K-KS-14	Kitchen	3 chamber sink, 1 faucet	14
1-K-KS-15	Kitchen	Hand sink	15
1-MO-SRF-16	Main Office	single faucet	16
1-Port-B-17	Portable M1	left	17
1-Port-B-18	Portable M1	right	18

Photo 1: Bubbler located on the 1st floor in the hallway.

Photo 2: Bubbler located on the 1st floor in the hallway.

Photo 3: Bubbler located on the 1st floor in the hallway.

Photo 4: Bubbler located on the 1st floor in the hallway. .

Photo 5: Classroom faucet, located on the 1st floor in room 107.

Photo 6: Classroom faucet, located on the 1st floor in room 108.

Photo 7: Bubbler located on the 1st floor in the hallway.

Photo 8: Bubbler located on the 1st floor in the hallway.

Photo 9: Bubbler located on the 1st floor in the hallway.

Photo 10: Bubbler located on the 1st floor in the hallway.

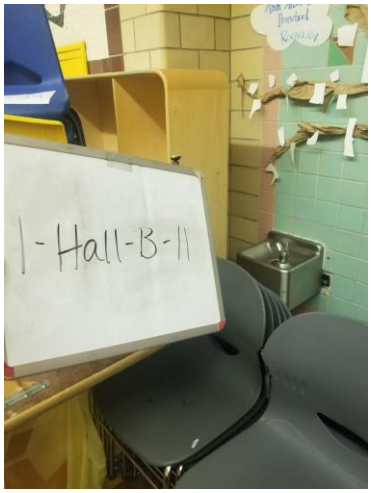

Photo 11: Bubbler located on the 1st floor in the hallway.

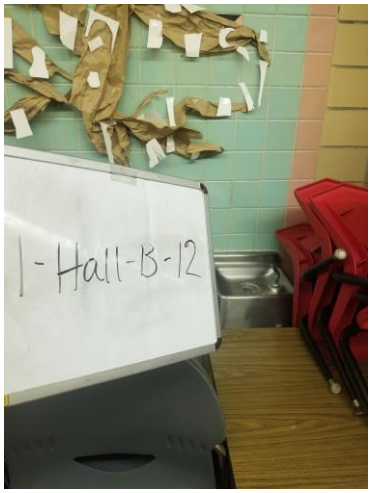

Photo 12: Bubbler located on the 1st floor in the hallway.

Photo 13: Bubbler located on the 1st floor in room 101.

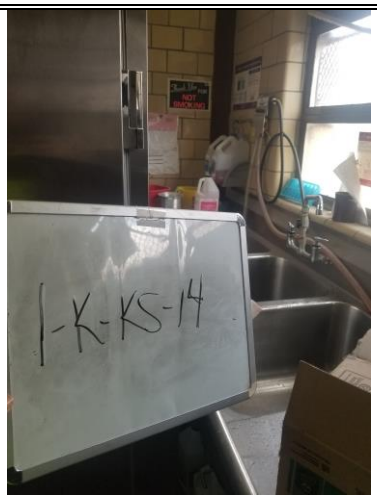

Photo 14: Kitchen sink, located on the 1st floor in the kitchen.

Photo 15: Kitchen sink, located on the 1st floor in the kitchen.

Photo 16: Staff room faucet, located in the main office on the 1st floor.

Photo 17: Bubbler located on the 1st floor in the portable building.

Photo 18: Bubbler located on the 1st floor in the portable building.

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

July 31, 2018

Robert Smith
ATC Group Services
46555 Humboldt
Suite 100
Novi, MI 48377

RE: Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Dear Robert Smith:
Enclosed are the analytical results for sample(s) received by the laboratory on July 25, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Will Cole
will.cole@pacelabs.com
(616)975-4500
Project Manager

Enclosures

cc: AP c/o Abigail Jardine, ATC Group Services
Michael Hauswirth, ATC Group Services

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Grand Rapids Certification ID's

5560 Corporate Exchange Ct SE, Grand Rapids, MI 49512
Minnesota Department of Health, Certificate #1385941
Arkansas Department of Environmental Quality, Certificate #18-046-0
Georgia Environmental Protection Division, Stipulation
Illinois Environmental Protection Agency, Certificate #004325
Michigan Department of Environmental Quality, Laboratory #0034
New York State Department of Health, Serial #57971 and 57972
North Carolina Division of Water Resources, Certificate #659
Virginia Department of General Services, Certificate #9780
Wisconsin Department of Natural Resources, Laboratory #999472650
U.S. Department of Agriculture Permit to Receive Soil, Permit #P330-17-00278

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SAMPLE SUMMARY

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4615403001	**1-Hall-B-1**	Drinking Water	07/24/18 09:00	07/25/18 19:20
4615403002	**1-Hall-B-2**	Drinking Water	07/24/18 09:00	07/25/18 19:20
4615403003	**1-Hall-B-3**	Drinking Water	07/24/18 09:03	07/25/18 19:20
4615403004	**1-Hall-B-4**	Drinking Water	07/24/18 09:03	07/25/18 19:20
4615403005	**1-107-CF-5**	Drinking Water	07/24/18 09:08	07/25/18 19:20
4615403006	**1-108-CF/B-6**	Drinking Water	07/24/18 09:10	07/25/18 19:20
4615403007	**1-Hall-B-7**	Drinking Water	07/24/18 09:18	07/25/18 19:20
4615403008	**1-Hall-B-8**	Drinking Water	07/24/18 09:18	07/25/18 19:20
4615403009	**1-Hall-B-9**	Drinking Water	07/24/18 09:13	07/25/18 19:20
4615403010	**1-Hall-B-10**	Drinking Water	07/24/18 09:13	07/25/18 19:20
4615403011	**1-Hall-B-11**	Drinking Water	07/24/18 09:23	07/25/18 19:20
4615403012	**1-Hall-B-12**	Drinking Water	07/24/18 09:23	07/25/18 19:20
4615403013	**1-101-B-13**	Drinking Water	07/24/18 09:27	07/25/18 19:20
4615403014	**1-K-KS-14**	Drinking Water	07/24/18 09:44	07/25/18 19:20
4615403015	**1-K-KS-15**	Drinking Water	07/24/18 09:44	07/25/18 19:20
4615403016	**1-MO-SRF-16**	Drinking Water	07/24/18 09:40	07/25/18 19:20
4615403017	**1-Port-B-17**	Drinking Water	07/24/18 09:53	07/25/18 19:20
4615403018	**1-Port-B-18**	Drinking Water	07/24/18 09:54	07/25/18 19:20

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4615403001	**1-Hall-B-1**	EPA 200.8	DWJ	2
4615403002	**1-Hall-B-2**	EPA 200.8	DWJ	2
4615403003	**1-Hall-B-3**	EPA 200.8	DWJ	2
4615403004	**1-Hall-B-4**	EPA 200.8	DWJ	2
4615403005	**1-107-CF-5**	EPA 200.8	DWJ	2
4615403006	**1-108-CF/B-6**	EPA 200.8	DWJ	2
4615403007	**1-Hall-B-7**	EPA 200.8	DWJ	2
4615403008	**1-Hall-B-8**	EPA 200.8	DWJ	2
4615403009	**1-Hall-B-9**	EPA 200.8	DWJ	2
4615403010	**1-Hall-B-10**	EPA 200.8	DWJ	2
4615403011	**1-Hall-B-11**	EPA 200.8	DWJ	2
4615403012	**1-Hall-B-12**	EPA 200.8	DWJ	2
4615403013	**1-101-B-13**	EPA 200.8	DWJ	2
4615403014	**1-K-KS-14**	EPA 200.8	DWJ	2
4615403015	**1-K-KS-15**	EPA 200.8	DWJ	2
4615403016	**1-MO-SRF-16**	EPA 200.8	DWJ	2
4615403017	**1-Port-B-17**	EPA 200.8	DWJ	2
4615403018	**1-Port-B-18**	EPA 200.8	DWJ	2

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Hall-B-1 **Lab ID: 4615403001** Collected: 07/24/18 09:00 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**253**	ug/L	5.0	1300	5		07/30/18 12:08	7440-50-8	
Lead	**13.8**	ug/L	1.0	15	1		07/27/18 15:44	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Hall-B-2 **Lab ID: 4615403002** Collected: 07/24/18 09:00 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**307**	ug/L	5.0	1300	5		07/30/18 12:41	7440-50-8	
Lead	**9.9**	ug/L	1.0	15	1		07/27/18 16:28	7439-92-1	

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Hall-B-3 **Lab ID: 4615403003** Collected: 07/24/18 09:03 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**118**	ug/L	5.0	1300	5		07/30/18 12:16	7440-50-8	
Lead	**6.5**	ug/L	1.0	15	1		07/27/18 15:54	7439-92-1	

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Hall-B-4 **Lab ID: 4615403004** Collected: 07/24/18 09:03 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**77.1**	ug/L	1.0	1300	1		07/27/18 15:55	7440-50-8	
Lead	**2.8**	ug/L	1.0	15	1		07/27/18 15:55	7439-92-1	

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-107-CF-5 **Lab ID: 4615403005** Collected: 07/24/18 09:08 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**103**	ug/L	5.0	1300	5		07/30/18 12:18	7440-50-8	
Lead	**2.8**	ug/L	1.0	15	1		07/27/18 15:57	7439-92-1	

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-108-CF/B-6 **Lab ID: 4615403006** Collected: 07/24/18 09:10 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**138**	ug/L	5.0	1300	5		07/30/18 12:19	7440-50-8	
Lead	**6.4**	ug/L	1.0	15	1		07/27/18 15:58	7439-92-1	

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Hall-B-7 **Lab ID: 4615403007** Collected: 07/24/18 09:18 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**30.0**	ug/L	1.0	1300	1		07/27/18 15:59	7440-50-8	
Lead	**2.0**	ug/L	1.0	15	1		07/27/18 15:59	7439-92-1	

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Hall-B-8 **Lab ID: 4615403008** Collected: 07/24/18 09:18 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**31.5**	ug/L	1.0	1300	1		07/27/18 16:01	7440-50-8	
Lead	**2.8**	ug/L	1.0	15	1		07/27/18 16:01	7439-92-1	

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Hall-B-9 **Lab ID: 4615403009** Collected: 07/24/18 09:13 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**156**	ug/L	5.0	1300	5		07/30/18 12:20	7440-50-8	
Lead	**4.2**	ug/L	1.0	15	1		07/27/18 16:02	7439-92-1	

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Hall-B-10 **Lab ID: 4615403010** Collected: 07/24/18 09:13 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**227**	ug/L	5.0	1300	5		07/30/18 12:22	7440-50-8	
Lead	**4.0**	ug/L	1.0	15	1		07/27/18 16:04	7439-92-1	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Hall-B-11 **Lab ID: 4615403011** Collected: 07/24/18 09:23 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**99.1**	ug/L	5.0	1300	5		07/30/18 12:23	7440-50-8	
Lead	**4.0**	ug/L	1.0	15	1		07/27/18 16:08	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Hall-B-12 **Lab ID: 4615403012** Collected: 07/24/18 09:23 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**112**	ug/L	5.0	1300	5		07/30/18 12:24	7440-50-8	
Lead	**2.4**	ug/L	1.0	15	1		07/27/18 16:09	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-101-B-13 **Lab ID: 4615403013** Collected: 07/24/18 09:27 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**275**	ug/L	5.0	1300	5		07/30/18 12:26	7440-50-8	
Lead	**26.2**	ug/L	1.0	15	1		07/27/18 16:10	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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(616)975-4500

ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-K-KS-14 **Lab ID: 4615403014** Collected: 07/24/18 09:44 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**569**	ug/L	10.0	1300	10		07/30/18 12:27	7440-50-8	
Lead	**2.3**	ug/L	1.0	15	1		07/27/18 16:12	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-K-KS-15 **Lab ID: 4615403015** Collected: 07/24/18 09:44 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**307**	ug/L	5.0	1300	5		07/30/18 12:32	7440-50-8	
Lead	**2.3**	ug/L	1.0	15	1		07/27/18 16:13	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-MO-SRF-16 **Lab ID: 4615403016** Collected: 07/24/18 09:40 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**338**	ug/L	5.0	1300	5		07/30/18 12:33	7440-50-8	
Lead	**5.2**	ug/L	1.0	15	1		07/27/18 16:15	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Port-B-17 **Lab ID: 4615403017** Collected: 07/24/18 09:53 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**1150**	ug/L	25.0	1300	25		07/30/18 12:34	7440-50-8	
Lead	**2.3**	ug/L	1.0	15	1		07/27/18 16:16	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Sample: 1-Port-B-18 **Lab ID: 4615403018** Collected: 07/24/18 09:54 Received: 07/25/18 19:20 Matrix: Drinking Water

Parameters	Results	Units	Report Limit	Reg. Limit	DF	Prepared	Analyzed	CAS No.	Qual
200.8 MET ICPMS Drinking Water	Analytical Method: EPA 200.8								
Copper	**1020**	ug/L	25.0	1300	25		07/30/18 12:36	7440-50-8	
Lead	**2.3**	ug/L	1.0	15	1		07/27/18 16:17	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

QUALITY CONTROL DATA

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

QC Batch: 29184 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, No Prep
Associated Lab Samples: 4615403001, 4615403002, 4615403003, 4615403004, 4615403005, 4615403006, 4615403007, 4615403008, 4615403009, 4615403010, 4615403011, 4615403012, 4615403013, 4615403014, 4615403015, 4615403016, 4615403017, 4615403018

METHOD BLANK: 116626 Matrix: Water
Associated Lab Samples: 4615403001, 4615403002, 4615403003, 4615403004, 4615403005, 4615403006, 4615403007, 4615403008, 4615403009, 4615403010, 4615403011, 4615403012, 4615403013, 4615403014, 4615403015, 4615403016, 4615403017, 4615403018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<1.0	1.0	07/27/18 15:41	
Lead	ug/L	<1.0	1.0	07/27/18 15:41	

LABORATORY CONTROL SAMPLE: 116627

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	20	21.9	109	85-115	
Lead	ug/L	20	21.6	108	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116628 116629

Parameter	Units	4615403001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	253	100	100	355	355	103	103	70-130	0	20	
Lead	ug/L	13.8	20	20	36.3	35.2	113	107	70-130	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 116631 116632

Parameter	Units	4615403018 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	1020	500	500	1500	1550	96	106	70-130	3	20	
Lead	ug/L	2.3	20	20	25.1	25.3	114	115	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

QUALIFIERS

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: DW-AA Trail Magnet School
Pace Project No.: 4615403

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4615403001	**1-Hall-B-1**	EPA 200.8	29184		
4615403002	**1-Hall-B-2**	EPA 200.8	29184		
4615403003	**1-Hall-B-3**	EPA 200.8	29184		
4615403004	**1-Hall-B-4**	EPA 200.8	29184		
4615403005	**1-107-CF-5**	EPA 200.8	29184		
4615403006	**1-108-CF/B-6**	EPA 200.8	29184		
4615403007	**1-Hall-B-7**	EPA 200.8	29184		
4615403008	**1-Hall-B-8**	EPA 200.8	29184		
4615403009	**1-Hall-B-9**	EPA 200.8	29184		
4615403010	**1-Hall-B-10**	EPA 200.8	29184		
4615403011	**1-Hall-B-11**	EPA 200.8	29184		
4615403012	**1-Hall-B-12**	EPA 200.8	29184		
4615403013	**1-101-B-13**	EPA 200.8	29184		
4615403014	**1-K-KS-14**	EPA 200.8	29184		
4615403015	**1-K-KS-15**	EPA 200.8	29184		
4615403016	**1-MO-SRF-16**	EPA 200.8	29184		
4615403017	**1-Port-B-17**	EPA 200.8	29184		
4615403018	**1-Port-B-18**	EPA 200.8	29184		

WO# : 4615403

4615403

#19619

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A — Required Client Information:

Company: ATC Group Services LLC	Report To: Robert Smith	Attention:	
Address: 46555 Humboldt Drive, Suite 100	Copy To:	Company Name:	Regulatory Agency
Novi, MI 48377		Address:	
Email: robert.smith@atcgs.com	Purchase Order #:	Pace Quote:	
Phone: 248-669-5140 Fax: 248-669-5147	Project Name: Lead & Copper Testing	Pace Project Manager: Will Cole	State / Location
Requested Due Date:	Project #: Ann Arbor Trail Magnet School	Pace Profile #: Profile 236 - Line 2	MI

Section C — Invoice Information:

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Lead & Copper	Residual Chlorine (Y/N)
1	1-Hall- B- 1	DW	G	07/24/18	9:00				1			X							X	
2	1-Hall- B-2	DW	G	07/24/18	9:00				1			X							X	
3	1-Hall- B- 3	DW	G	07/24/18	9:03				1			X							X	
4	1-Hall- B- 4	DW	G	07/24/18	9:03				1			X							X	
5	1-107-CF-5	DW	G	07/24/18	9:08				1			X							X	
6	1-108-CF/B-6	DW	G	07/24/18	9:10				1			X							X	
7	1-Hall- B-7	DW	G	07/24/18	9:18				1			X							X	
8	1-Hall- B-8	DW	G	07/24/18	9:18				1			X							X	
9	1-Hall- B-9	DW	G	07/24/18	9:13				1			X							X	
10	1-Hall- B-10	DW	G	07/24/18	9:13				1			X							X	
11	1-Hall- B-11	DW	G	07/24/18	9:23				1			X							X	
12	1-Hall- B-12	DW	G	07/24/18	9:23				1			X							X	

14-27

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
AAT 1-18	[signature] /ATC	7/24/18	15:50	[signature]	7/25/18	1550	
	[signature]	7/25/18	1920	Water Pace	07/25/18	1920	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jennifer M. Fashbaugh

SIGNATURE of SAMPLER: [signature] DATE Signed: 07/24/18

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

WO# 46154O3

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

19620

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	ATC Group Services LLC	Report To:	Robert Smith	Attention:	
Address:	46555 Humboldt Drive, Suite 100	Copy To:		Company Name:	
Novi, MI 48377				Address:	
Email:	robert.smith@atcgs.com	Purchase Order #:		Pace Quote:	
Phone:	248-669-5140 Fax: 248-669-5147	Project Name:	Lead & Copper Testing	Pace Project Manager:	Will Cole
Requested Due Date:		Project #:	Ann Arbor Trail Magnet School	Pace Profile #:	Profile 236 - Line 2

Regulatory Agency
State / Location
MI

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Lead & Copper	Residual Chlorine (Y/N)
13	1-101-B-13	DW	G	07/24/18	9:27				1			X							X	
14	1-K-KS-14	DW	G	07/24/18	9:44				1			X							X	
15	1-K-KS-15	DW	G	07/24/18	9:44				1			X							X	
16	1-MO-SRF-16	DW	G	07/24/18	9:40				1			X							X	
17	1-Port-B-17	DW	G	07/24/18	9:53				1			X							X	
18	1-Port-B-18	DW	G	07/24/18	9:54				1			X							X	

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
AAT 1-18	Fashbaugh/ATC	7/24/18	15:50		7/25/18	1350	
		7/25/18	1920	Watts/Pace	07/25/18	1920	

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Jennifer M. Fashbaugh		
SIGNATURE of SAMPLER:	Jennifer Fashbaugh	DATE Signed:	07/24/18

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLE RECEIVING / LOG-IN CHECKLIST

Pace Analytical®

Client	ATC - AAT	Work Order #	46154403
Receipt Record Page/Line #	(14-27)		001-018

Recorded by (initials/date): AW 07/25/18

Cooler ☑ / Box ☐ / Other ☐ _____ | Qty Received: 1

Thermometer Used: ☑ IR Gun (#202) ☐ Digital Thermometer (#54) ☐ IR Gun (#402)

Cooler #	Time	Cooler #	Time	Cooler #	Time	Cooler #	Time
Pace 470	2030						

Custody Seals:
- Cooler: ☑ None / ☐ Present / Intact / ☐ Present / Not Intact
- Box: ☐ None / ☐ Present / Intact / ☐ Present / Not Intact
- Other: ☐ None / ☐ Present / Intact / ☐ Present / Not Intact

Coolant Type:
- Cooler: ☐ Loose Ice / ☐ Bagged Ice / ☐ Blue Ice / ☑ None
- Box: ☐ Loose Ice / ☐ Bagged Ice / ☐ Blue Ice / ☐ None
- Other: ☐ Loose Ice / ☐ Bagged Ice / ☐ Blue Ice / ☐ None

Coolant Location: Dispersed / Top / Middle / Bottom

Temp Blank Present: Cooler ☐ Yes ☑ No | Box ☐ Yes ☐ No | Other ☐ Yes ☐ No

If Present, Temperature Blank Location is: ☐ Representative ☐ Not Representative

	Observed °C	Correction Factor °C	Actual °C	Observed °C	Correction Factor °C	Actual °C	Observed °C	Correction Factor °C	Actual °C	Observed °C	Correction Factor °C	Actual °C
Temp Blank:												
Sample 1:	27.2		27.2									
Sample 2:	26.8		26.8									
Sample 3:	27.3		27.3									

When above 6 °C take a 3 Sample Average °C: Cooler 27.1 | Box _____ | Other _____ | _____ | _____

VOC Trip Blank received? ☐ | ☐ | ☐ | ☐

If any shaded areas checked, complete Sample Receiving Non-Conformance

Paperwork Received

Yes	No	
☑	☐	Chain of Custody record(s)? If No, Initiated By _____
☑		Received for Lab Signed/Date/Time?
☐	☑	USDA Soil Documents?
☐	☑	Sampling / Field Forms?
☐	☑	Other _____

COC Information

☑ Pace COC ☐ Other _____

COC ID Numbers: 19619, 19620

Check COC for Accuracy

Yes	No	
☑	☐	Analysis Requested?
☑	☐	Sample ID matches COC?
☑	☐	Sample Date and Time matches COC?
☑	☐	All containers indicated are received?

Sample Condition Summary

N/A	Yes	No	
	☐	☑	Broken containers/lids?
	☐	☑	Missing or incomplete labels?
	☐	☑	Illegible information on labels?
	☐	☑	Low volume received?
	☐	☑	Inappropriate or non-Pace containers received?
☑	☐	☐	VOC vials have headspace?
	☐	☑	Extra sample locations?
	☐	☑	Containers not listed on COC?

Check Sample Preservation

N/A	Yes	No	
	☑	☐	Temperature Blank **OR** average sample temperature, ≥6° C?
☐	☑	☐	If "Yes" was thermal preservation required?
☐	☑	☐	If "Yes" were ALL samples collected the same day as receipt?
☐	☑		Completed Sample Preservation Verification Form?
☐	☑	☐	Samples chemically preserved correctly?
☑	☑		If "No", add wire tag and fill out Non-Conformance Form? AW 07/25/18
☑	☐		Received unpreserved Terracore kit?
			If "Yes" unpreserved vials must be frozen

Work Order Not Logged In with Short Hold / Rush

☐ Copies of COC To Lab Areas

Notes

Yes	No	
☑	☐	Were all samples logged into Epic?
☑	☐	Were all samples labelled?
☑	☐	Were samples placed on scan locations?

Initial / Date : AW 07/25/18

Pace Analytical®

AQUEOUS SAMPLE PRESERVATION VERIFICATION

Client: ATC - AAT

Work Order #: 4615403

Receipt Log #: (14-27)

Completed By (initials/date): aw 07/25/18

COC ID #: 19619

Adjusted by: _____

Date: _____

Container Type	BP3C or AG3O		BP1-4S		AG2S		BP1-4N Total		BP1-4N Dissolved			
Preservative	NaOH >12		H_2SO_4 <2		H_2SO_4 <2		HNO_3 <2		HNO_3 <2			
pH	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted
COC Line #1							✓					
COC Line #2							✓					
COC Line #3							✓					
COC Line #4							✓					
COC Line #5							✓					
COC Line #6							✓					
COC Line #7							✓					
COC Line #8							✓					
COC Line #9							✓					
COC Line #10							✓					
COC Line #11							✓					
COC Line #12							✓					

Comments:

pH Strip Reagent or Lot #

☐ HC739245

☑ Other HC727135

Place a check mark in the Received box if pH is acceptable. If pH is not acceptable, document the Received and Adjusted pH values in the appropriate columns (project manager will review all adjustments at work order release). Never add more than 2x the default preservation volume (see table below for default volumes). Complete and attach a wire tag to all adjusted samples. A Sample Receiving Non-Conformance Report must be completed if a pH adjustment was required.

COC ID #: 19620

Adjusted by: _____

Date: _____

Container Type	BP3C or AG3O		BP1-4S		AG2S		BP1-4N Total		BP1-4N Dissolved			
Preservative	NaOH >12		H_2SO_4 <2		H_2SO_4 <2		HNO_3 <2		HNO_3 <2			
pH	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted	Received	Adjusted
COC Line #1							✓					
COC Line #2							✓					
COC Line #3							✓					
COC Line #4							✓					
COC Line #5							✓					
COC Line #6							✓					
COC Line #7												
COC Line #8												
COC Line #9												
COC Line #10												
COC Line #11												
COC Line #12												

Comments:

Container Size (mL)	Default Preservative Volume (mL)
Container Types 5 / 23	NaOH
250	1.3
Container Type 4	H_2SO_4
125	0.5
250	1.0
500	2.0
1000	4.0
Container Type 13	H_2SO_4
500	2.5
Container Types 6 / 15	HNO_3
125	0.7
250	1.25
500	2.5
1000	5.0