ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

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

September 13, 2018

Mathew Sam
Detroit Public Schools
1601 Farnsworth
Detroit, Michigan 48202

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

SUBJECT: **Drinking Water Screening Report**
Chrysler Elementary School
1445 East Lafayette Street
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 one (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 (August 13, 2018)

Sample Number	Location	Description	Total Lead (ug/l)	Total Copper (ug/l)
1-Hall- DWF-1	Drinking water fountain, located in the hall on the 1st floor	Next to restroom near front entrance	<1.0 ug/L	33.2 ug/L
1-5-B-3	Bubbler, located on the first floor Room 5	Bubbler	5.2 ug/L	145 ug/L
1-Hall- DWF-4	Drinking water fountain, located in the hall on the 1st	Across from room 5	<1.0 ug/L	37.1 ug/L
1-7-B-6	Bubbler, located on the first floor room 7	Bubbler	5.9 ug/L	112 ug/L
1-8-B-7	Bubbler, located on the first floor in room 8	BUBBLER NOT WORKING, SAMPLED SINK. Bubbler and sink in room.	4.2 ug/L	194 ug/L
1-6-B-8	Bubbler, located on the first floor in room 6	Bubbler and sink in room.	4.8 ug/L	81.6 ug/L
1-3-B-9	Bubbler, located on the first floor in room 3	Bubbler and sink in room.	2.6 ug/L	144 ug/L
1-4-B-10	Bubbler, located on the first floor in room 4	Bubbler and sink in room.	2.6 ug/L	24.9 ug/L

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Sample Number	Location	Description	Total Lead (ug/l)	Total Copper (ug/l)
1-2-B-11	Bubbler, located on the first floor in room 2	BUBBLER NOT WORKING, SAMPLED SINK. Bubbler and sink in room.	1.4 ug/L	49.5 ug/L
1-1-B-12	Bubbler, located on the first floor in room 1	Bubbler does not have good flow. Bubbler and sink in room.	16.4 ug/L	1130 ug/L
1-Gym-B-13	Bubbler, located on the first floor in the gym	Left bubbler	2.8 ug/L	72.1 ug/L
1-K-KS-16	Kitchen sink, located in the kitchen on the 1st floor	3 Chamber Dishwasher Sink, left	4.5 ug/L	110 ug/L
1-K-KS-17	Kitchen sink, located in the kitchen on the 1st floor	3 Chamber Dishwasher Sink, right	1.7 ug/L	42.4 ug/L
1-K-KS-18	Kitchen sink, located in the kitchen on the 1st floor	Dishwasher Sink, in corner	**71.8 ug/L**	806 ug/L
1-MO-S-19	Main Office	single faucet sink	6.6 ug/L	180 ug/L

Key: NA - Not Analyzed

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

Analysis of samples of the kitchen sink, located on the 1st floor 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.

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LIMITATIONS

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: Chrysler Elementary School

Address 1445 East Lafayette Street

Fixture Identification	Fixture Location	Fixture Description	Photo #
1-Hall- DWF-1	Drinking water fountain, located in the hall on the 1st floor	Next to restroom near front entrance	1
1-5-CF-2	Classroom faucet, located on the 1st floor in room 5	classroom fountain	2
1-5-B-3	Bubbler, located on the first floor Room 5	Bubbler	3
1-Hall- DWF-4	Drinking water fountain, located in the hall on the 1st	Across from room 5	4
1-7-CF-5	Classroom faucet, located on the 1st in room 7	classroom fountain	5
1-7-B-6	Bubbler, located on the first floor room 7	Bubbler	6
1-8-B-7	Bubbler, located on the first floor in room 8	BUBBLER NOT WORKING, SAMPLED SINK. Bubbler and sink in room.	7
1-6-B-8	Bubbler, located on the first floor in room 6	Bubbler and sink in room.	8
1-3-B-9	Bubbler, located on the first floor in room 3	Bubbler and sink in room.	9
1-4-B-10	Bubbler, located on the first floor in room 4	Bubbler and sink in room.	10
1-2-B-11	Bubbler, located on the first floor in room 2	BUBBLER NOT WORKING, SAMPLED SINK. Bubbler and sink in room.	11

1-1-B-12	Bubbler, located on the first floor in room 1	Bubbler does not have good flow. Bubbler and sink in room.	12
1-Gym-B-13	Bubbler, located on the first floor in the gym	Left bubbler	13
1-Gym-B-14	Bubbler, located on the first floor in the gym	Right bubbler- NOT WORKING	14
1-K-KS-15	Kitchen sink, located in the kitchen on the 1st floor	Hand sink, next to entrance	15
1-K-KS-16	Kitchen sink, located in the kitchen on the 1st floor	3 Chamber Dishwasher Sink, left	16
1-K-KS-17	Kitchen sink, located in the kitchen on the 1st floor	3 Chamber Dishwasher Sink, right	17
1-K-KS-18	Kitchen sink, located in the kitchen on the 1st floor	Dishwasher Sink, in corner	18
1-MO-S-19	Main Office	single faucet sink	19

Photo 1: Drinking water fountain, located in the hall on the 1st floor.

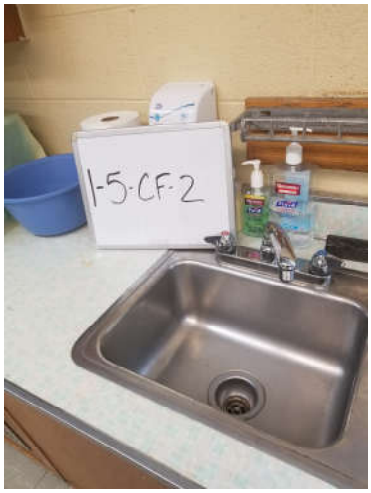

Photo 2: Classroom faucet, located on the 1st floor in room 5.

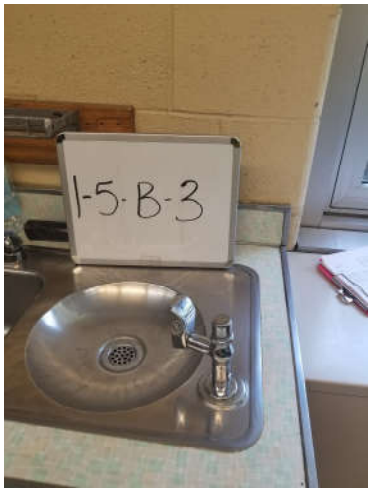

Photo 3: Bubbler, located on the first floor room 5.

Photo 4: Drinking water fountain, located in the hall on the 1st floor.

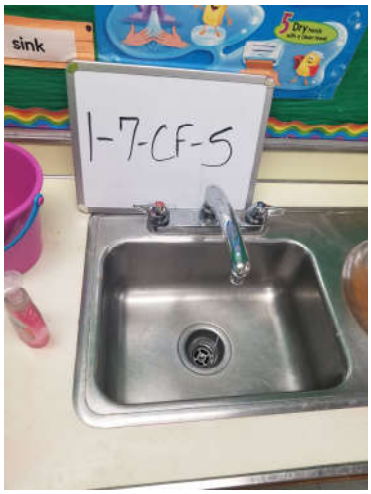

Photo 5: Classroom faucet, located on the 1st floor in room 7.

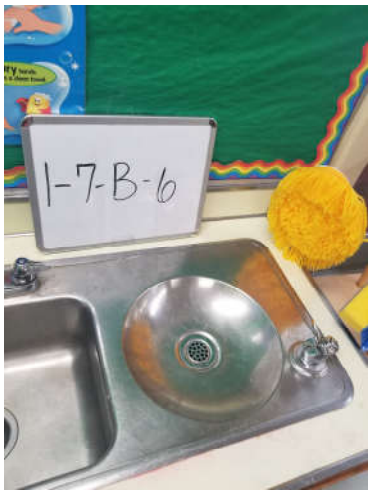

Photo 6 Bubbler, located on the first floor room 7.

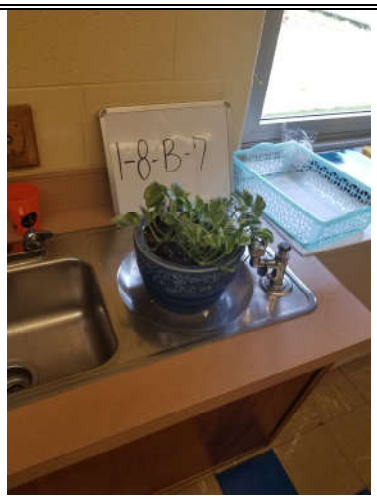

Photo 7: Bubbler, located on the first floor in room 8.

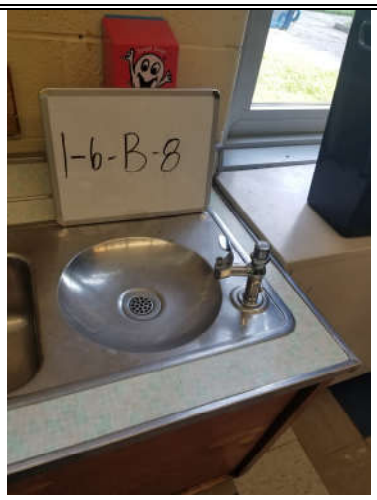

Photo 8: Bubbler, located on the first floor in room 6.

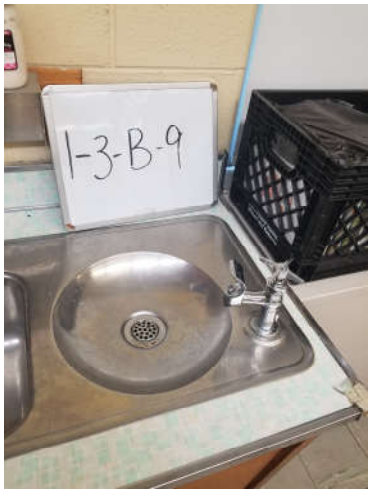

Photo 9: Bubbler, located on the first floor in room 3.

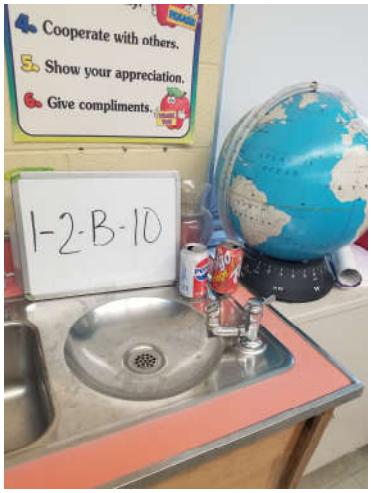

Photo 10: Bubbler, located on the first floor in room 2.

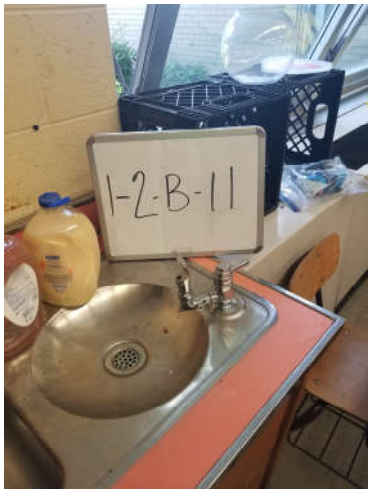

Photo 11: Bubbler, located on the first floor in room 2.

Photo 12: Bubbler, located on the first floor in room 1.

Photo 13: Bubbler, located on the first floor in the gym.

Photo 14 Bubbler, located on the first floor in the gym.

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

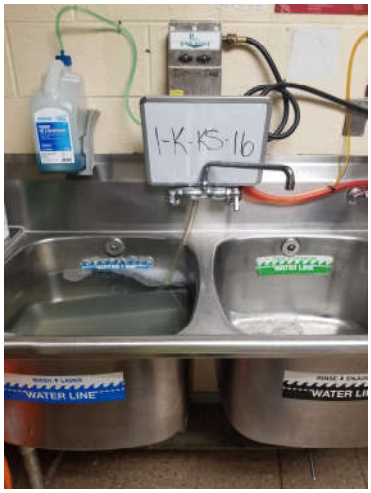

Photo 16: Kitchen sink, located on the 1st floor in the kitchen.

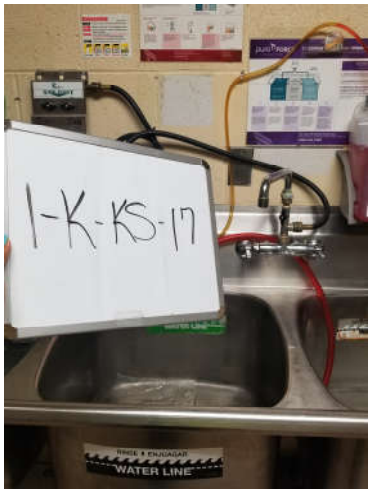

Photo 17: Kitchen sink, located on the 1st floor in the kitchen.

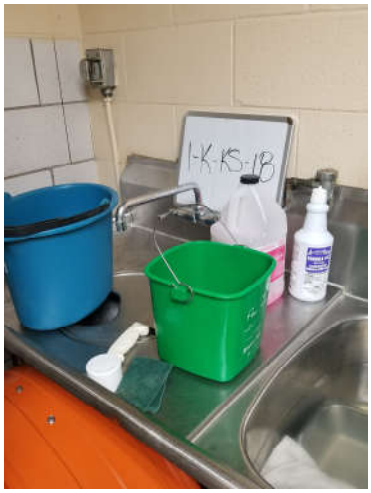

Photo 18: Kitchen sink, located on the 1st floor in the kitchen.

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

August 13, 2018

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

RE: Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

Dear Robert Smith:
Enclosed are the analytical results for sample(s) received by the laboratory on August 01, 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
5560 Corporate Exchange Ct. SE
Grand Rapids, MI 49512
(616)975-4500

CERTIFICATIONS

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

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

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

SAMPLE SUMMARY

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4615694001	**1-Hall-DWF-1**	Drinking Water	07/31/18 09:51	08/01/18 20:15
4615694002	**1-5-B-3**	Drinking Water	07/31/18 09:54	08/01/18 20:15
4615694003	**1-Hall-DWF-4**	Drinking Water	07/31/18 09:57	08/01/18 20:15
4615694004	**1-7-B-6**	Drinking Water	07/31/18 10:01	08/01/18 20:15
4615694005	**1-8-B-7**	Drinking Water	07/31/18 10:05	08/01/18 20:15
4615694006	**1-6-B-8**	Drinking Water	07/31/18 10:08	08/01/18 20:15
4615694007	**1-3-B-9**	Drinking Water	07/31/18 10:12	08/01/18 20:15
4615694008	**1-4-B-10**	Drinking Water	07/31/18 10:18	08/01/18 20:15
4615694009	**1-2-B-11**	Drinking Water	07/31/18 10:23	08/01/18 20:15
4615694010	**1-1-B-12**	Drinking Water	07/31/18 10:26	08/01/18 20:15
4615694011	**1-Gym-B-13**	Drinking Water	07/31/18 10:31	08/01/18 20:15
4615694012	**1-K-KS-16**	Drinking Water	07/31/18 10:35	08/01/18 20:15
4615694013	**1-K-KS-17**	Drinking Water	07/31/18 10:36	08/01/18 20:15
4615694014	**1-K-KS-18**	Drinking Water	07/31/18 10:37	08/01/18 20:15
4615694015	**1-MO-S-19**	Drinking Water	07/31/18 10:41	08/01/18 20:15

Pace Analytical Services, LLC
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Grand Rapids, MI 49512
(616)975-4500

SAMPLE ANALYTE COUNT

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4615694001	**1-Hall-DWF-1**	EPA 200.8	DSC	2
4615694002	**1-5-B-3**	EPA 200.8	DSC	2
4615694003	**1-Hall-DWF-4**	EPA 200.8	DSC	2
4615694004	**1-7-B-6**	EPA 200.8	DSC	2
4615694005	**1-8-B-7**	EPA 200.8	DSC	2
4615694006	**1-6-B-8**	EPA 200.8	DSC	2
4615694007	**1-3-B-9**	EPA 200.8	DSC	2
4615694008	**1-4-B-10**	EPA 200.8	DSC	2
4615694009	**1-2-B-11**	EPA 200.8	DSC	2
4615694010	**1-1-B-12**	EPA 200.8	DSC	2
4615694011	**1-Gym-B-13**	EPA 200.8	DSC	2
4615694012	**1-K-KS-16**	EPA 200.8	DSC	2
4615694013	**1-K-KS-17**	EPA 200.8	DSC	2
4615694014	**1-K-KS-18**	EPA 200.8	DSC	2
4615694015	**1-MO-S-19**	EPA 200.8	DSC	2

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(616)975-4500

ANALYTICAL RESULTS

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-Hall-DWF-1 **Lab ID: 4615694001** Collected: 07/31/18 09:51 Received: 08/01/18 20:15 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	**33.2**	ug/L	1.0	1300	1		08/08/18 14:53	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/08/18 14:53	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-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-5-B-3 **Lab ID: 4615694002** Collected: 07/31/18 09:54 Received: 08/01/18 20:15 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	**145**	ug/L	5.0	1300	5		08/09/18 09:14	7440-50-8	
Lead	**5.2**	ug/L	1.0	15	1		08/08/18 14:59	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-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-Hall-DWF-4 **Lab ID: 4615694003** Collected: 07/31/18 09:57 Received: 08/01/18 20:15 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	**37.1**	ug/L	1.0	1300	1		08/08/18 15:01	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		08/08/18 15:01	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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Grand Rapids, MI 49512
(616)975-4500

ANALYTICAL RESULTS

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-7-B-6 **Lab ID: 4615694004** Collected: 07/31/18 10:01 Received: 08/01/18 20:15 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		08/09/18 09:15	7440-50-8	
Lead	**5.9**	ug/L	1.0	15	1		08/08/18 15:02	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-8-B-7 **Lab ID: 4615694005** Collected: 07/31/18 10:05 Received: 08/01/18 20:15 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	**194**	ug/L	5.0	1300	5		08/09/18 09:17	7440-50-8	
Lead	**4.2**	ug/L	1.0	15	1		08/08/18 15:04	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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(616)975-4500

ANALYTICAL RESULTS

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-6-B-8 **Lab ID: 4615694006** Collected: 07/31/18 10:08 Received: 08/01/18 20:15 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	**81.6**	ug/L	1.0	1300	1		08/08/18 15:05	7440-50-8	
Lead	**4.8**	ug/L	1.0	15	1		08/08/18 15:05	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-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-3-B-9 **Lab ID: 4615694007** Collected: 07/31/18 10:12 Received: 08/01/18 20:15 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	**144**	ug/L	5.0	1300	5		08/09/18 09:18	7440-50-8	
Lead	**2.6**	ug/L	1.0	15	1		08/08/18 15:07	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-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-4-B-10 **Lab ID: 4615694008** Collected: 07/31/18 10:18 Received: 08/01/18 20:15 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	**24.9**	ug/L	1.0	1300	1		08/08/18 15:12	7440-50-8	
Lead	**2.6**	ug/L	1.0	15	1		08/08/18 15:12	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-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-2-B-11 **Lab ID: 4615694009** Collected: 07/31/18 10:23 Received: 08/01/18 20:15 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	**49.5**	ug/L	1.0	1300	1		08/08/18 15:13	7440-50-8	
Lead	**1.4**	ug/L	1.0	15	1		08/08/18 15:13	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-1-B-12 **Lab ID: 4615694010** Collected: 07/31/18 10:26 Received: 08/01/18 20:15 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	**1130**	ug/L	25.0	1300	25		08/09/18 09:22	7440-50-8	
Lead	**16.4**	ug/L	1.0	15	1		08/08/18 15:15	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-Gym-B-13 **Lab ID: 4615694011** Collected: 07/31/18 10:31 Received: 08/01/18 20:15 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	**72.1**	ug/L	1.0	1300	1		08/08/18 15:17	7440-50-8	
Lead	**2.8**	ug/L	1.0	15	1		08/08/18 15:17	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-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-K-KS-16 **Lab ID: 4615694012** Collected: 07/31/18 10:35 Received: 08/01/18 20:15 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	**110**	ug/L	5.0	1300	5		08/09/18 09:24	7440-50-8	
Lead	**4.5**	ug/L	1.0	15	1		08/08/18 15:23	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-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-K-KS-17 **Lab ID: 4615694013** Collected: 07/31/18 10:36 Received: 08/01/18 20:15 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	**42.4**	ug/L	1.0	1300	1		08/09/18 10:01	7440-50-8	
Lead	**1.7**	ug/L	1.0	15	1		08/09/18 10:01	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-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-K-KS-18 **Lab ID: 4615694014** Collected: 07/31/18 10:37 Received: 08/01/18 20:15 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	**806**	ug/L	10.0	1300	10		08/09/18 10:06	7440-50-8	
Lead	**71.8**	ug/L	1.0	15	1		08/09/18 10:03	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-Chrysler Elementary School
Pace Project No.: 4615694

Sample: 1-MO-S-19 **Lab ID: 4615694015** Collected: 07/31/18 10:41 Received: 08/01/18 20:15 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	**180**	ug/L	5.0	1300	5		08/09/18 10:07	7440-50-8	
Lead	**6.6**	ug/L	1.0	15	1		08/09/18 10:04	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Grand Rapids, MI 49512
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QUALITY CONTROL DATA

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

QC Batch: 30164 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, No Prep
Associated Lab Samples: 4615694001, 4615694002, 4615694003, 4615694004, 4615694005, 4615694006, 4615694007, 4615694008, 4615694009, 4615694010, 4615694011, 4615694012, 4615694013, 4615694014, 4615694015

METHOD BLANK: 121025 Matrix: Water
Associated Lab Samples: 4615694001, 4615694002, 4615694003, 4615694004, 4615694005, 4615694006, 4615694007, 4615694008, 4615694009, 4615694010, 4615694011, 4615694012, 4615694013, 4615694014, 4615694015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<1.0	1.0	08/08/18 14:46	
Lead	ug/L	<1.0	1.0	08/08/18 14:46	

LABORATORY CONTROL SAMPLE: 121026

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	20	20.5	102	85-115	
Lead	ug/L	20	20.6	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 121027 121028

Parameter	Units	4615694001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	33.2	20	20	52.0	51.7	94	93	70-130	1	20	
Lead	ug/L	<1.0	20	20	19.8	19.8	97	97	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 121030 121031

Parameter	Units	4615694011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	72.1	20	20	91.2	90.9	95	94	70-130	0	20	
Lead	ug/L	2.8	20	20	22.2	23.1	97	101	70-130	4	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
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Grand Rapids, MI 49512
(616)975-4500

QUALIFIERS

Project: DW-Chrysler Elementary School
Pace Project No.: 4615694

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-Chrysler Elementary School
Pace Project No.: 4615694

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4615694001	**1-Hall-DWF-1**	EPA 200.8	30164		
4615694002	**1-5-B-3**	EPA 200.8	30164		
4615694003	**1-Hall-DWF-4**	EPA 200.8	30164		
4615694004	**1-7-B-6**	EPA 200.8	30164		
4615694005	**1-8-B-7**	EPA 200.8	30164		
4615694006	**1-6-B-8**	EPA 200.8	30164		
4615694007	**1-3-B-9**	EPA 200.8	30164		
4615694008	**1-4-B-10**	EPA 200.8	30164		
4615694009	**1-2-B-11**	EPA 200.8	30164		
4615694010	**1-1-B-12**	EPA 200.8	30164		
4615694011	**1-Gym-B-13**	EPA 200.8	30164		
4615694012	**1-K-KS-16**	EPA 200.8	30164		
4615694013	**1-K-KS-17**	EPA 200.8	30164		
4615694014	**1-K-KS-18**	EPA 200.8	30164		
4615694015	**1-MO-S-19**	EPA 200.8	30164		

WO# : 4615694

4615694

19743

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 #: Chrysler Elementary 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: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS	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)	(220-34)
1	1-Hall- DWF-1	DW	G	07/31/18	9:51				1			X						X		
2	1-5-B-3	DW	G	07/31/18	9:54				1			X						X		
3	1-Hall- DWF-4	DW	G	07/31/18	9:57				1			X						X		
4	1-7-B-6	DW	G	07/31/18	10:01				1			X						X		
5	1-8-B-7	DW	G	07/31/18	10:05				1			X						X		
6	1-6-B-8	DW	G	07/31/18	10:08				1			X						X		
7	1-3-B-9	DW	G	07/31/18	10:12				1			X						X		
8	1-4-B-10	DW	G	07/31/18	10:18				1			X						X		
9	1-2-B-11	DW	G	07/31/18	10:23				1			X						X		
10	1-1-B-12	DW	G	07/31/18	10:26				1			X						X		
11	1-Gym-B-13	DW	G	07/31/18	10:31				1			X						X		
12	1-K-KS-16	DW	G	07/31/18	10:35				1			X						X		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
1-15 Chrysler	Fashbaugh/ATC	7/31/18	17:00		8/1/18	1400	
		8/1/18	2015	A Watts/Pace	08/01/18	2015	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jennifer M. Fashbaugh

SIGNATURE of SAMPLER: Fashbaugh DATE Signed: 07/31/18

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

Pace Analytical

WO# 46156694

#19744

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:		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 #:	Chrysler Elementary 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-K-KS-17	DW	G	07/31/18	10:36				1			X							X	
14	1-K-KS-18	DW	G	07/31/18	10:37				1			X							X	
15	1-MO-S-19	DW	G	07/31/18	10:41				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
I-15 Chrysler	Jennifer Fashbaugh / ATC	7/31/18	17:00	[signature]	8/1/18	1400	
				Lee Watts / Pace	8/01/18	2015	

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER:	Jennifer M. Fashbaugh		TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
SIGNATURE of SAMPLER: [signature]	DATE Signed: 07/31/18					

SAMPLE RECEIVING / LOG-IN CHECKLIST

Pace Analytical®

Client: ATC - Chrysler (26-36) | Work Order #: 4615694

Receipt Record Page/Line #:

Recorded by (initials/date): AW 08/01/18

☑ Cooler ☐ Box ☐ Other ____ | Qty Received: 1

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

Cooler # / Time	Cooler 1	Cooler 2	Cooler 3	Cooler 4
Cooler #	Pac426			
Time	2345			
Custody Seals	☑ None ☐ Present / Intact ☐ Present / Not Intact	☐ None ☐ Present / Intact ☐ Present / Not Intact	☐ None ☐ Present / Intact ☐ Present / Not Intact	☐ None ☐ Present / Intact ☐ Present / Not Intact
Coolant Type	☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☑ None	☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None	☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None	☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None
Coolant Location	Dispersed / Top / Middle / Bottom	Dispersed / Top / Middle / Bottom	Dispersed / Top / Middle / Bottom	Dispersed / Top / Middle / Bottom
Temp Blank Present	☐ Yes ☑ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
If Present, Temperature Blank Location is:	☐ Representative ☐ Not Representative	☐ Representative ☐ Not Representative	☐ Representative ☐ Not Representative	☐ 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:	22.7			
Sample 2:				
Sample 3:	22.7			
When above 6 °C take a 3 Sample Average °C:	22.7			
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: 19743, 19744

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?
☑	☐		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 08/01/18

Pace Analytical® AQUEOUS SAMPLE PRESERVATION VERIFICATION

Client: ATC - Chrysler (2e - 3e)

Work Order #: 46156694

Receipt Log #:

Completed By (initials/date): CW 08/01/18

COC ID #: 19743

Adjusted by:

Date:

pH Strip Reagent or Lot #: ☑ HC739245 ☐ Other

Container Type	BP3C or AG3O		BP1-4S		AG2S		3 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:

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 #: 19744

Adjusted by:

Date:

Container Type	BP3C or AG3O		BP1-4S		AG2S		3 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