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

April 26, 2018

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

RE: Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Dear Robert Smith:
Enclosed are the analytical results for sample(s) received by the laboratory on April 11, 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,

Gary Wood
gary.wood@pacelabs.com
(616)940-4206
Project Manager

Enclosures

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

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CERTIFICATIONS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

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 #17-046-0
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 #56192 and 56193
North Carolina Division of Water Resources, Certificate #659
Virginia Department of General Services, Certificate #9028
Wisconsin Department of Natural Resources, Laboratory #999472650
U.S. Department of Agriculture Permit to Receive Soil, Permit #P330-17-00278

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4610695001	**1-K-KF-1-P**	Drinking Water	04/06/18 10:06	04/11/18 17:58
4610695002	**1-K-KF-1-F**	Drinking Water	04/06/18 10:08	04/11/18 17:58
4610695003	**1-K-KF-2-P**	Drinking Water	04/06/18 10:06	04/11/18 17:58
4610695004	**1-K-KF-2-F**	Drinking Water	04/06/18 10:08	04/11/18 17:58
4610695005	**1-A-B-4-P**	Drinking Water	04/06/18 10:10	04/11/18 17:58
4610695006	**1-A-B-4-F**	Drinking Water	04/06/18 10:12	04/11/18 17:58
4610695007	**1-A-B-3-P**	Drinking Water	04/06/18 10:10	04/11/18 17:58
4610695008	**1-A-B-3-F**	Drinking Water	04/06/18 10:14	04/11/18 17:58
4610695009	**1-A-B-1-P**	Drinking Water	04/06/18 10:19	04/11/18 17:58
4610695010	**1-A-B-1-F**	Drinking Water	04/06/18 10:21	04/11/18 17:58
4610695011	**1-A-B-2-P**	Drinking Water	04/06/18 10:22	04/11/18 17:58
4610695012	**1-A-B-2-F**	Drinking Water	04/06/18 10:24	04/11/18 17:58
4610695013	**1-114-CF-1-P**	Drinking Water	04/06/18 10:28	04/11/18 17:58
4610695014	**1-114-CF-1-F**	Drinking Water	04/06/18 10:30	04/11/18 17:58
4610695015	**1-116-CF-1-P**	Drinking Water	04/06/18 10:32	04/11/18 17:58
4610695016	**1-116-CF-1-F**	Drinking Water	04/06/18 10:34	04/11/18 17:58
4610695017	**2-A-WC-1-P**	Drinking Water	04/06/18 10:37	04/11/18 17:58
4610695018	**2-A-WC-1-F**	Drinking Water	04/06/18 10:39	04/11/18 17:58
4610695019	**2-A-WC-2-P**	Drinking Water	04/06/18 10:38	04/11/18 17:58
4610695020	**2-A-WC-2-F**	Drinking Water	04/06/18 10:40	04/11/18 17:58

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4610695001	**1-K-KF-1-P**	EPA 200.8	DWJ	2
4610695002	**1-K-KF-1-F**	EPA 200.8	DWJ	2
4610695003	**1-K-KF-2-P**	EPA 200.8	DWJ	2
4610695004	**1-K-KF-2-F**	EPA 200.8	DWJ	2
4610695005	**1-A-B-4-P**	EPA 200.8	DWJ	2
4610695006	**1-A-B-4-F**	EPA 200.8	DWJ	2
4610695007	**1-A-B-3-P**	EPA 200.8	DWJ	2
4610695008	**1-A-B-3-F**	EPA 200.8	DWJ	2
4610695009	**1-A-B-1-P**	EPA 200.8	DWJ	2
4610695010	**1-A-B-1-F**	EPA 200.8	DWJ	2
4610695011	**1-A-B-2-P**	EPA 200.8	DWJ	2
4610695012	**1-A-B-2-F**	EPA 200.8	DWJ	2
4610695013	**1-114-CF-1-P**	EPA 200.8	DWJ	2
4610695014	**1-114-CF-1-F**	EPA 200.8	DWJ	2
4610695015	**1-116-CF-1-P**	EPA 200.8	DWJ	2
4610695016	**1-116-CF-1-F**	EPA 200.8	DWJ	2
4610695017	**2-A-WC-1-P**	EPA 200.8	DWJ	2
4610695018	**2-A-WC-1-F**	EPA 200.8	DWJ	2
4610695019	**2-A-WC-2-P**	EPA 200.8	DWJ	2
4610695020	**2-A-WC-2-F**	EPA 200.8	DWJ	2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-K-KF-1-P **Lab ID: 4610695001** Collected: 04/06/18 10:06 Received: 04/11/18 17:58 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	**392**	ug/L	10.0	1300	10		04/25/18 11:02	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 13:55	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-K-KF-1-F **Lab ID: 4610695002** Collected: 04/06/18 10:08 Received: 04/11/18 17:58 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	**26.5**	ug/L	1.0	1300	1		04/24/18 14:01	7440-50-8	
Lead	**1.5**	ug/L	1.0	15	1		04/24/18 14:01	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-K-KF-2-P **Lab ID: 4610695003** Collected: 04/06/18 10:06 Received: 04/11/18 17:58 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	**760**	ug/L	10.0	1300	10		04/25/18 11:08	7440-50-8	
Lead	**13.0**	ug/L	1.0	15	1		04/24/18 14:02	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-K-KF-2-F **Lab ID: 4610695004** Collected: 04/06/18 10:08 Received: 04/11/18 17:58 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	**51.0**	ug/L	1.0	1300	1		04/24/18 14:06	7440-50-8	
Lead	**1.7**	ug/L	1.0	15	1		04/24/18 14:06	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-A-B-4-P **Lab ID: 4610695005** Collected: 04/06/18 10:10 Received: 04/11/18 17:58 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	**179**	ug/L	5.0	1300	5		04/25/18 11:09	7440-50-8	
Lead	**8.2**	ug/L	1.0	15	1		04/24/18 14:07	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-A-B-4-F **Lab ID: 4610695006** Collected: 04/06/18 10:12 Received: 04/11/18 17:58 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	**59.4**	ug/L	1.0	1300	1		04/24/18 14:09	7440-50-8	
Lead	**2.3**	ug/L	1.0	15	1		04/24/18 14:09	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-A-B-3-P **Lab ID: 4610695007** Collected: 04/06/18 10:10 Received: 04/11/18 17:58 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	**179**	ug/L	5.0	1300	5		04/25/18 11:11	7440-50-8	
Lead	**1.5**	ug/L	1.0	15	1		04/24/18 14:10	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-A-B-3-F **Lab ID: 4610695008** Collected: 04/06/18 10:14 Received: 04/11/18 17:58 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	**24.4**	ug/L	1.0	1300	1		04/24/18 14:11	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 14:11	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-A-B-1-P **Lab ID: 4610695009** Collected: 04/06/18 10:19 Received: 04/11/18 17:58 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	**21.8**	ug/L	1.0	1300	1		04/24/18 14:13	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 14:13	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-A-B-1-F **Lab ID: 4610695010** Collected: 04/06/18 10:21 Received: 04/11/18 17:58 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	**11.6**	ug/L	1.0	1300	1		04/24/18 14:18	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 14:18	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-A-B-2-P **Lab ID: 4610695011** Collected: 04/06/18 10:22 Received: 04/11/18 17:58 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	**56.8**	ug/L	1.0	1300	1		04/24/18 14:22	7440-50-8	
Lead	**1.5**	ug/L	1.0	15	1		04/24/18 14:22	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-A-B-2-F **Lab ID: 4610695012** Collected: 04/06/18 10:24 Received: 04/11/18 17:58 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	**27.0**	ug/L	1.0	1300	1		04/24/18 14:23	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 14:23	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-114-CF-1-P **Lab ID: 4610695013** Collected: 04/06/18 10:28 Received: 04/11/18 17:58 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	**283**	ug/L	5.0	1300	5		04/25/18 11:12	7440-50-8	
Lead	**5.0**	ug/L	1.0	15	1		04/24/18 14:25	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-114-CF-1-F **Lab ID: 4610695014** Collected: 04/06/18 10:30 Received: 04/11/18 17:58 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	**19.9**	ug/L	1.0	1300	1		04/24/18 14:26	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 14:26	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-116-CF-1-P **Lab ID: 4610695015** Collected: 04/06/18 10:32 Received: 04/11/18 17:58 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	**530**	ug/L	10.0	1300	10		04/25/18 11:14	7440-50-8	
Lead	**2.1**	ug/L	1.0	15	1		04/24/18 14:27	7439-92-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 1-116-CF-1-F **Lab ID: 4610695016** Collected: 04/06/18 10:34 Received: 04/11/18 17:58 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	**42.3**	ug/L	1.0	1300	1		04/24/18 14:29	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 14:29	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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(616)975-4500

ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 2-A-WC-1-P **Lab ID: 4610695017** Collected: 04/06/18 10:37 Received: 04/11/18 17:58 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	**159**	ug/L	5.0	1300	5		04/25/18 11:15	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 14:30	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 2-A-WC-1-F **Lab ID: 4610695018** Collected: 04/06/18 10:39 Received: 04/11/18 17:58 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	**73.0**	ug/L	1.0	1300	1		04/24/18 14:31	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 14:31	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 2-A-WC-2-P **Lab ID: 4610695019** Collected: 04/06/18 10:38 Received: 04/11/18 17:58 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		04/25/18 11:21	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 14:38	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

Sample: 2-A-WC-2-F **Lab ID: 4610695020** Collected: 04/06/18 10:40 Received: 04/11/18 17:58 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	**95.3**	ug/L	5.0	1300	5		04/25/18 11:23	7440-50-8	
Lead	**<1.0**	ug/L	1.0	15	1		04/24/18 14:40	7439-92-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

QC Batch: 21149 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, No Prep
Associated Lab Samples: 4610695001, 4610695002, 4610695003, 4610695004, 4610695005, 4610695006, 4610695007, 4610695008, 4610695009, 4610695010, 4610695011, 4610695012, 4610695013, 4610695014, 4610695015, 4610695016, 4610695017, 4610695018

METHOD BLANK: 84302 Matrix: Water
Associated Lab Samples: 4610695001, 4610695002, 4610695003, 4610695004, 4610695005, 4610695006, 4610695007, 4610695008, 4610695009, 4610695010, 4610695011, 4610695012, 4610695013, 4610695014, 4610695015, 4610695016, 4610695017, 4610695018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<1.0	1.0	04/24/18 13:53	
Lead	ug/L	<1.0	1.0	04/24/18 13:53	

LABORATORY CONTROL SAMPLE: 84303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	20	20.5	103	85-115	
Lead	ug/L	20	19.8	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 84304 84305

Parameter	Units	4610695001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	392	200	200	580	592	94	100	70-130	2	20	
Lead	ug/L	<1.0	20	20	20.7	21.3	99	102	70-130	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 84307 84308

Parameter	Units	4610695009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	21.8	20	20	41.8	42.4	100	103	70-130	1	20	
Lead	ug/L	<1.0	20	20	20.5	21.3	101	105	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

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QUALITY CONTROL DATA

Project: Ron Brown 188BS18122
Pace Project No.: 4610695

QC Batch: 21151 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: ICPMS Metals, No Prep
Associated Lab Samples: 4610695019, 4610695020

METHOD BLANK: 84310 Matrix: Water
Associated Lab Samples: 4610695019, 4610695020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Copper	ug/L	<1.0	1.0	04/24/18 14:33	
Lead	ug/L	<1.0	1.0	04/24/18 14:33	

LABORATORY CONTROL SAMPLE: 84311

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Copper	ug/L	20	21.1	105	85-115	
Lead	ug/L	20	20.9	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 84312 84313

Parameter	Units	4610696002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	445	200	200	670	656	113	106	70-130	2	20	
Lead	ug/L	7.0	20	20	26.8	27.7	99	103	70-130	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 84315 84316

Parameter	Units	4610696017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Copper	ug/L	228	100	100	333	331	105	103	70-130	1	20	
Lead	ug/L	3.4	20	20	23.8	23.6	102	101	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: Ron Brown 188BS18122
Pace Project No.: 4610695

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.

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: Ron Brown 188BS18122
Pace Project No.: 4610695

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4610695001	**1-K-KF-1-P**	EPA 200.8	21149		
4610695002	**1-K-KF-1-F**	EPA 200.8	21149		
4610695003	**1-K-KF-2-P**	EPA 200.8	21149		
4610695004	**1-K-KF-2-F**	EPA 200.8	21149		
4610695005	**1-A-B-4-P**	EPA 200.8	21149		
4610695006	**1-A-B-4-F**	EPA 200.8	21149		
4610695007	**1-A-B-3-P**	EPA 200.8	21149		
4610695008	**1-A-B-3-F**	EPA 200.8	21149		
4610695009	**1-A-B-1-P**	EPA 200.8	21149		
4610695010	**1-A-B-1-F**	EPA 200.8	21149		
4610695011	**1-A-B-2-P**	EPA 200.8	21149		
4610695012	**1-A-B-2-F**	EPA 200.8	21149		
4610695013	**1-114-CF-1-P**	EPA 200.8	21149		
4610695014	**1-114-CF-1-F**	EPA 200.8	21149		
4610695015	**1-116-CF-1-P**	EPA 200.8	21149		
4610695016	**1-116-CF-1-F**	EPA 200.8	21149		
4610695017	**2-A-WC-1-P**	EPA 200.8	21149		
4610695018	**2-A-WC-1-F**	EPA 200.8	21149		
4610695019	**2-A-WC-2-P**	EPA 200.8	21151		
4610695020	**2-A-WC-2-F**	EPA 200.8	21151		

WO# : 4610695

4610695

CHAIN-OF-CUSTODY / Analytical Request Document #18740

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
Address:	45555 Humboldt Drive, Suite 100
	Novi, MI 48377
Email To:	robert.smith@atcgs.com
Phone: 248-669-5140	Fax: 248-669-5147
Requested Due Date/TAT:	10 days

Report To:	Robert Smith
Copy To:	
Purchase Order No.:	
Project Name:	Ron Brown
Project Number:	188BS18122

Section C Invoice Information:

Attention:	Robert Smith
Company Name:	ATC Group Services LLC
Address:	45555 Humboldt Drive, Suite 100
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☑ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: MI

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: LEAD	COPPER	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	1-K-KF-1-P	DW	G	4/6/18	10:06				1			X						X	X		(46-43)
2	1-K-KF-1-F	DW	G	4/6/18	10:08				1			X						X	X		
3	1-K-KF-2-P	DW	G	4/6/18	10:06				1			X						X	X		
4	1-K-KF-2-F	DW	G	4/6/18	10:08				1			X						X	X		
5	1-A-B-4-P	DW	G	4/6/18	10:10				1			X						X	X		
6	1-A-B-4-F	DW	G	4/6/18	10:12				1			X						X	X		
7	1-A-B-3-P	DW	G	4/6/18	10:10				1			X						X	X		
8	1-A-B-3-F	DW	G	4/6/18	10:14				1			X						X	X		
9	1-A-B-1-P	DW	G	4/6/18	10:19				1			X						X	X		
10	1-A-B-1-F	DW	G	4/6/18	10:21				1			X						X	X		
11	1-A-B-2-P	DW	G	4/6/18	10:22				1			X						X	X		
12	1-A-B-2-F	DW	G	4/6/18	10:24				1			X						X	X		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		4/6/18	1305		4/11/18	1305	
		4/11/18	1758	D. Nolan	4/11/18	1758	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Kimberly Johnson

SIGNATURE of SAMPLER: Kimberly Johnson DATE Signed (MM/DD/YY): 4/6/18

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

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

461095

Pace Analytical™ www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document # 18741

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
Address:	45555 Humboldt Drive, Suite 100
	Novi, MI 48377
Email To:	robert.smith@atcgs.com
Phone: 248-669-5140	Fax: 248-669-5147
Requested Due Date/TAT:	10 days

Section B Required Project Information:

Report To:	Robert Smith
Copy To:	
Purchase Order No.:	
Project Name:	Ron Brown
Project Number:	188BS18122

Section C Invoice Information:

Attention:	Robert Smith
Company Name:	ATC Group Services LLC
Address:	45555 Humboldt Drive, Suite 100
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☑ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: MI

Section D Required Client Information

Valid Matrix Codes

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

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	LEAD	COPPER	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	1-114-CF-1-P	DW	G	4/6/18	10:28				1			X							X	X		(46.43)
2	1-114-CF-1-F	DW	G	4/6/18	10:30				1			X							X	X		
3	1-116-CF-1-P	DW	G	4/6/18	10:32				1			X							X	X		
4	1-116-CF-1-F	DW	G	4/6/18	10:34				1			X							X	X		
5	2-A-WC-1-P	DW	G	4/6/18	10:37				1			X							X	X		
6	2-A-WC-1-F	DW	G	4/6/18	10:39				1			X							X	X		
7	2-A-WC-2-P	DW	G	4/6/18	10:38				1			X							X	X		
8	2-A-WC-2-F	DW	G	4/6/18	10:40				1			X							X	X		
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		4/11/18	1305		4/11/18	1305	
		4/11/18	1758	J.D Jordin	4/11/18	1758	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Kimberly Johnson

SIGNATURE of SAMPLER: Kimberly Johnson DATE Signed (MM/DD/YY): 4/6/18

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

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

SAMPLE RECEIVING / LOG-IN CHECKLIST

Pace Analytical®

Client	QTC	Work Order #: 4610695
Receipt Record Page/Line #	46-43	New / Add To
		Project Chemist / Sample #s

Recorded by (initials/date): DN 4-12-18 am

☐ Cooler ☐ Box ☐ Other______ | Qty Received | Thermometer Used: ☐ IR Gun (#202) ☐ Digital Thermometer (#54) ☐ Other (#______) | ☐ See Additional Cooler Information Form

Cooler #	Time	Cooler #	Time	Cooler #	Time	Cooler #	Time
000331	104						

Cooler 1 (000331)

Custody Seals: ☑ None ☐ Present / Intact ☐ Present / Not Intact

Coolant Type: ☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☑ None

Coolant Location: Dispersed / Top / Middle / Bottom

Temp Blank Present: ☐ Yes ☐ No

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

	Observed °C	Correction Factor °C	Actual °C
Temp Blank:			
Sample 1:	19.5	0	19.5
Sample 2:	19.6	0	19.6
Sample 3:	19.8	0	19.8

3 Sample Average °C: 19.6

☐ Cooler ID on COC?
☐ VOC Trip Blank received?

Coolers 2–4 (blank): Custody Seals: ☐ None ☐ Present / Intact ☐ Present / Not Intact; Coolant Type: ☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None; Coolant Location: Dispersed / Top / Middle / Bottom; Temp Blank Present: ☐ Yes ☐ No; If Present, Temperature Blank Location is: ☐ Representative ☐ Not Representative

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

3 Sample Average °C: ______
☐ Cooler ID on COC?
☐ VOC Trip Blank received?

If any shaded areas checked, complete Sample Receiving Non-Conformance and/or Inventory Form

Paperwork Received

Yes	No	
☑	☐	Chain of Custody record(s)? If No, Initiated By ______
☑		Received for Lab Signed/Date/Time?
☐	☑	Shipping document?
☐	☑	Other ______

COC Information

☑ Pace COC ☐ Other______

COC ID Numbers: 18740, 18741

Check COC for Accuracy

Yes	No	
☑	☐	Analysis Requested?
☑	☐	Sample ID matches COC?
☑	☐	Sample Date and Time matches COC?
☑		Container type completed on COC?
☑	☐	All container types 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 / TOX containers 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 either is ≥6° C, was thermal preservation required?
☑	☐		If "Yes", Project Chemist Approval Initials:______
☑	☐		If "Yes" Completed Non Con Cooler - Cont Inventory Form?
☐	☑		Completed Sample Preservation Verification Form?
☐	☑	☐	Samples chemically preserved correctly?
☑	☐		If "No", added orange tag?
	☐	☑	Received pre-preserved VOC soils? ☐ MeOH ☐ Na_2SO_4

Check for Short Hold-Time Prep/Analyses

☐ Bacteriological
☐ Air Bags
☐ EnCores / Methanol Pre-Preserved
☐ Formaldehyde/Aldehyde
☐ Green-tagged containers
☐ Yellow/White-tagged 1 L ambers (SV Prep-Lab)

AFTER HOURS ONLY:
COPIES OF COC TO LAB AREA(S)
☐ NONE RECEIVED
☐ RECEIVED, COCs TO LAB(S)

Notes

☐ Trip Blank received ☐ Trip Blank not listed on COC

Cooler Received (Date/Time)	Paperwork Delivered (Date/Time)	≤1 Hour Goal Met?
DN 4/12/18 am	→	Yes / No

Pace Analytical® AQUEOUS SAMPLE PRESERVATION VERIFICATION

Client: ATC
Work Order #: 410695
Receipt Log #: 46-43
Completed By (initials/date): DH 4-12-18 am
Project Manager:

COC ID # 18740
Adjusted by:
Date:

Container Type	5 / 23		4		13		6		15			
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:

COC ID # 18741
Adjusted by:
Date:

Container Type	5 / 23		4		13		6		15			
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 #
☐ HC727135
☐ Other

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 (all adjustments must be reviewed by the project manager). Never add more than 2x the default preservation volume (see table below for default volumes). Complete and attach an orange preservation tag to all adjusted samples. A Sample Receiving Non-Conformance Report must be completed if a pH adjustment was required.

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