Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

May 15, 2023

Randy Evans
Wellington Operating Company
328 South Overland Trail
Fort Collins, CO 80521

RE: Project: PA Well 20-3
Pace Project No.: 10650977

Dear Randy Evans:

Enclosed are the analytical results for sample(s) received by the laboratory on April 27, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet
- Pace Analytical Services - Minneapolis

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

Sincerely,

Yeng Ozawa
yeng.ozawa@pacelabs.com
(612)607-1700
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: PA Well 20-3
Pace Project No.: 10650977

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
GMP+ Certification #: GMP050884
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208

Pace Analytical Services National
12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: PA Well 20-3
Pace Project No.: 10650977

Pace Analytical Services National

New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

Pace Analytical Services, LLC
1700 Elm Street
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SAMPLE ANALYTE COUNT

Project: PA Well 20-3
Pace Project No.: 10650977

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10650977001	**Well 20-3 Pad Surface**	EPA 8015D Modified	EB3	4	PASI-M
		EPA 8015D	TM2	2	PASI-M
		6010B-NE493 Ch 2	SPL	1	PAN
		EPA 6010D	DM	9	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	KJ3	17	PASI-M
		EPA 8260D	SB2	9	PASI-M
		SM 2540G	CMK	1	PAN
		EPA 7199	SET	1	PAN
		EPA 9045D	KAD	1	PAN
		EPA 9050	NTG	1	PAN
		Calculated	SPL	1	PAN
10650977002	**Well 20-3 Well Head@8'**	EPA 8015D Modified	EB3	4	PASI-M
		EPA 8015D	TM2	2	PASI-M
		6010B-NE493 Ch 2	SPL	1	PAN
		EPA 6010D	DM	9	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	JLR	17	PASI-M
		EPA 8260D	SB2	9	PASI-M
		SM 2540G	CMK	1	PAN
		EPA 7199	SET	1	PAN
		EPA 9045D	KAD	1	PAN
		EPA 9050	NTG	1	PAN
		Calculated	SPL	1	PAN
10650977003	**Well 20-3 Background**	EPA 8015D Modified	EB3	4	PASI-M
		EPA 8015D	TM2	2	PASI-M
		6010B-NE493 Ch 2	SPL	1	PAN
		EPA 6010D	DM	9	PASI-M
		ASTM D2974	JDL	1	PASI-M
		EPA 8270E by SIM	KJ3	17	PASI-M
		EPA 8260D	SB2	9	PASI-M
		SM 2540G	CMK	1	PAN
		EPA 7199	SET	1	PAN
		EPA 9045D	ARD	1	PAN
		EPA 9050	NTG	1	PAN
		Calculated	SPL	1	PAN

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SAMPLE ANALYTE COUNT

Project: PA Well 20-3
Pace Project No.: 10650977

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PAN = Pace National - Mt. Juliet
PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: PA Well 20-3
Pace Project No.: 10650977

Sample: Well 20-3 Pad Surface **Lab ID: 10650977001** Collected: 04/26/23 10:00 Received: 04/27/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015D GCS THC-Diesel	Analytical Method: EPA 8015D Modified Preparation Method: EPA 3550 Sonication Pace Analytical Services - Minneapolis							
Motor Oil Range (C24-C36)	**42.9**	mg/kg	10.9	1	05/01/23 13:19	05/02/23 19:02		N2
TPH-DRO (C10-C28)	ND	mg/kg	10.9	1	05/01/23 13:19	05/02/23 19:02		
Surrogates								
o-Terphenyl (S)	67	%.	30-150	1	05/01/23 13:19	05/02/23 19:02	84-15-1	
n-Triacontane (S)	61	%.	30-150	1	05/01/23 13:19	05/02/23 19:02		
8015D GCV GRO	Analytical Method: EPA 8015D Preparation Method: EPA 5030 Pace Analytical Services - Minneapolis							
Gasoline Range Organics	ND	mg/kg	3.3	1	05/03/23 16:52	05/03/23 23:47		
Surrogates								
a,a,a-Trifluorotoluene (S)	105	%.	75-125	1	05/03/23 16:52	05/03/23 23:47	98-08-8	
Metals (ICP) 6010B-NE493 Ch 2	Analytical Method: 6010B-NE493 Ch 2 Preparation Method: HWS Boron Pace National - Mt. Juliet							
Boron, Hot Water Soluble	**1820**	ug/L	1000	5	05/02/23 14:37	05/03/23 12:22	7440-42-8H	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.2**	mg/kg	1.0	1	05/04/23 08:40	05/08/23 14:45	7440-38-2	
Barium	**96.7**	mg/kg	0.51	1	05/04/23 08:40	05/08/23 14:45	7440-39-3	
Cadmium	**0.54**	mg/kg	0.15	1	05/04/23 08:40	05/08/23 14:45	7440-43-9	
Copper	**11.7**	mg/kg	0.51	1	05/04/23 08:40	05/08/23 14:45	7440-50-8	
Lead	**8.9**	mg/kg	0.51	1	05/04/23 08:40	05/08/23 14:45	7439-92-1	
Nickel	**11.3**	mg/kg	1.0	1	05/04/23 08:40	05/08/23 14:45	7440-02-0	
Selenium	ND	mg/kg	1.0	1	05/04/23 08:40	05/08/23 14:45	7782-49-2	
Silver	ND	mg/kg	0.51	1	05/04/23 08:40	05/08/23 14:45	7440-22-4	
Zinc	**41.7**	mg/kg	2.1	1	05/04/23 08:40	05/08/23 14:45	7440-66-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**9.6**	%	0.10	1		04/28/23 12:05		N2
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Acenaphthene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	83-32-9	
Anthracene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	120-12-7	
Benzo(a)anthracene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	56-55-3	
Benzo(a)pyrene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	205-99-2	
Benzo(k)fluoranthene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	207-08-9	
Chrysene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	53-70-3	
Fluoranthene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	206-44-0	
Fluorene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	86-73-7	

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ANALYTICAL RESULTS

Project: PA Well 20-3
Pace Project No.: 10650977

Sample: Well 20-3 Pad Surface **Lab ID: 10650977001** Collected: 04/26/23 10:00 Received: 04/27/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Indeno(1,2,3-cd)pyrene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	193-39-5	
1-Methylnaphthalene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	90-12-0	
2-Methylnaphthalene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	91-57-6	
Naphthalene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	91-20-3	
Pyrene	ND	ug/kg	10.9	1	05/02/23 11:52	05/04/23 04:48	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	63	%.	54-125	1	05/02/23 11:52	05/04/23 04:48	321-60-8	
p-Terphenyl-d14 (S)	93	%.	60-125	1	05/02/23 11:52	05/04/23 04:48	1718-51-0	
8260D MSV UST	Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis							
Benzene	ND	ug/kg	12.5	1	04/28/23 10:23	05/02/23 00:52	71-43-2	
Ethylbenzene	ND	ug/kg	31.2	1	04/28/23 10:23	05/02/23 00:52	100-41-4	
Toluene	ND	ug/kg	31.2	1	04/28/23 10:23	05/02/23 00:52	108-88-3	
1,2,4-Trimethylbenzene	ND	ug/kg	31.2	1	04/28/23 10:23	05/02/23 00:52	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	31.2	1	04/28/23 10:23	05/02/23 00:52	108-67-8	
Xylene (Total)	ND	ug/kg	93.5	1	04/28/23 10:23	05/02/23 00:52	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	103	%.	75-125	1	04/28/23 10:23	05/02/23 00:52	460-00-4	
Toluene-d8 (S)	104	%.	75-125	1	04/28/23 10:23	05/02/23 00:52	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	97	%.	75-125	1	04/28/23 10:23	05/02/23 00:52	2199-69-1	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**91.9**	%		1	05/02/23 10:53	05/02/23 11:07		
Wet Chemistry 7199	Analytical Method: EPA 7199 Preparation Method: 3060A Pace National - Mt. Juliet							
Chromium, Hexavalent	ND	mg/kg	1.09	1	05/02/23 18:48	05/03/23 11:52		
Wet Chemistry 9045D	Analytical Method: EPA 9045D Preparation Method: 9045C/9045D Pace National - Mt. Juliet							
pH	**7.70**	Std. Units		1	05/02/23 21:00	05/02/23 23:05		H3
Wet Chemistry 9050AMod	Analytical Method: EPA 9050 Preparation Method: 9050A Pace National - Mt. Juliet							
Specific Conductance	**806**	umhos/cm	10.0	1	05/03/23 13:20	05/03/23 14:36		
Calculated Results	Analytical Method: Calculated Preparation Method: Calc Pace National - Mt. Juliet							
Sodium Adsorption Ratio	**0.155**			1	05/04/23 18:48	05/04/23 18:48		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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ANALYTICAL RESULTS

Project: PA Well 20-3
Pace Project No.: 10650977

Sample: Well 20-3 Well Head@8' **Lab ID: 10650977002** Collected: 04/26/23 10:30 Received: 04/27/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015D GCS THC-Diesel	Analytical Method: EPA 8015D Modified Preparation Method: EPA 3550 Sonication Pace Analytical Services - Minneapolis							
Motor Oil Range (C24-C36)	**4760**	mg/kg	228	20	05/01/23 13:19	05/02/23 17:10		N2
TPH-DRO (C10-C28)	**4240**	mg/kg	228	20	05/01/23 13:19	05/02/23 17:10		
Surrogates								
o-Terphenyl (S)	0	%.	30-150	20	05/01/23 13:19	05/02/23 17:10	84-15-1	S4
n-Triacontane (S)	0	%.	30-150	20	05/01/23 13:19	05/02/23 17:10		S4
8015D GCV GRO	Analytical Method: EPA 8015D Preparation Method: EPA 5030 Pace Analytical Services - Minneapolis							
Gasoline Range Organics	**21.3**	mg/kg	5.2	2	05/03/23 16:52	05/05/23 19:49		
Surrogates								
a,a,a-Trifluorotoluene (S)	92	%.	75-125	2	05/03/23 16:52	05/05/23 19:49	98-08-8	
Metals (ICP) 6010B-NE493 Ch 2	Analytical Method: 6010B-NE493 Ch 2 Preparation Method: HWS Boron Pace National - Mt. Juliet							
Boron, Hot Water Soluble	**1170**	ug/L	1000	5	05/02/23 14:37	05/03/23 12:24	7440-42-8H	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**3.5**	mg/kg	1.1	1	05/04/23 08:40	05/08/23 14:47	7440-38-2	
Barium	**178**	mg/kg	0.56	1	05/04/23 08:40	05/08/23 14:47	7440-39-3	
Cadmium	**0.32**	mg/kg	0.17	1	05/04/23 08:40	05/08/23 14:47	7440-43-9	
Copper	**8.1**	mg/kg	0.56	1	05/04/23 08:40	05/08/23 14:47	7440-50-8	
Lead	**8.0**	mg/kg	0.56	1	05/04/23 08:40	05/08/23 14:47	7439-92-1	
Nickel	**8.9**	mg/kg	1.1	1	05/04/23 08:40	05/08/23 14:47	7440-02-0	
Selenium	ND	mg/kg	1.1	1	05/04/23 08:40	05/08/23 14:47	7782-49-2	
Silver	ND	mg/kg	0.56	1	05/04/23 08:40	05/08/23 14:47	7440-22-4	
Zinc	**30.6**	mg/kg	2.2	1	05/04/23 08:40	05/08/23 14:47	7440-66-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**12.6**	%	0.10	1		04/28/23 12:05		N2
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Acenaphthene	**564**	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	83-32-9	
Anthracene	ND	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	120-12-7	
Benzo(a)anthracene	ND	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	56-55-3	
Benzo(a)pyrene	ND	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	50-32-8	
Benzo(b)fluoranthene	**191**	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	205-99-2	
Benzo(k)fluoranthene	ND	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	207-08-9	
Chrysene	**687**	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	53-70-3	
Fluoranthene	**170**	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	206-44-0	
Fluorene	**1480**	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	86-73-7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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ANALYTICAL RESULTS

Project: PA Well 20-3
Pace Project No.: 10650977

Sample: Well 20-3 Well Head@8' Lab ID: 10650977002 Collected: 04/26/23 10:30 Received: 04/27/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Indeno(1,2,3-cd)pyrene	ND	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	193-39-5	
1-Methylnaphthalene	**4460**	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	90-12-0	
2-Methylnaphthalene	**850**	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	91-57-6	
Naphthalene	ND	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	91-20-3	
Pyrene	**355**	ug/kg	55.2	5	05/04/23 15:27	05/11/23 14:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	93	%.	54-125	5	05/04/23 15:27	05/11/23 14:39	321-60-8	D4
p-Terphenyl-d14 (S)	98	%.	60-125	5	05/04/23 15:27	05/11/23 14:39	1718-51-0	
8260D MSV UST	Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis							
Benzene	ND	ug/kg	10.8	1	04/28/23 10:23	05/02/23 01:38	71-43-2	
Ethylbenzene	ND	ug/kg	27.0	1	04/28/23 10:23	05/02/23 01:38	100-41-4	
Toluene	ND	ug/kg	27.0	1	04/28/23 10:23	05/02/23 01:38	108-88-3	
1,2,4-Trimethylbenzene	ND	ug/kg	27.0	1	04/28/23 10:23	05/02/23 01:38	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	27.0	1	04/28/23 10:23	05/02/23 01:38	108-67-8	
Xylene (Total)	ND	ug/kg	81.0	1	04/28/23 10:23	05/02/23 01:38	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	101	%.	75-125	1	04/28/23 10:23	05/02/23 01:38	460-00-4	
Toluene-d8 (S)	107	%.	75-125	1	04/28/23 10:23	05/02/23 01:38	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	99	%.	75-125	1	04/28/23 10:23	05/02/23 01:38	2199-69-1	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**91.2**	%		1	05/02/23 10:53	05/02/23 11:07		
Wet Chemistry 7199	Analytical Method: EPA 7199 Preparation Method: 3060A Pace National - Mt. Juliet							
Chromium, Hexavalent	ND	mg/kg	1.10	1	05/02/23 18:48	05/03/23 11:57		
Wet Chemistry 9045D	Analytical Method: EPA 9045D Preparation Method: 9045C/9045D Pace National - Mt. Juliet							
pH	**7.61**	Std. Units		1	05/02/23 21:00	05/02/23 23:05		H3
Wet Chemistry 9050AMod	Analytical Method: EPA 9050 Preparation Method: 9050A Pace National - Mt. Juliet							
Specific Conductance	**381**	umhos/cm	10.0	1	05/03/23 13:20	05/03/23 14:36		
Calculated Results	Analytical Method: Calculated Preparation Method: Calc Pace National - Mt. Juliet							
Sodium Adsorption Ratio	**0.193**			1	05/04/23 18:51	05/04/23 18:51		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PA Well 20-3
Pace Project No.: 10650977

Sample: Well 20-3 Background **Lab ID: 10650977003** Collected: 04/26/23 11:00 Received: 04/27/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015D GCS THC-Diesel	Analytical Method: EPA 8015D Modified Preparation Method: EPA 3550 Sonication Pace Analytical Services - Minneapolis							
Motor Oil Range (C24-C36)	**57.4**	mg/kg	10.7	1	05/01/23 13:19	05/02/23 19:14		N2
TPH-DRO (C10-C28)	**14.8**	mg/kg	10.7	1	05/01/23 13:19	05/02/23 19:14		
Surrogates								
o-Terphenyl (S)	85	%.	30-150	1	05/01/23 13:19	05/02/23 19:14	84-15-1	
n-Triacontane (S)	70	%.	30-150	1	05/01/23 13:19	05/02/23 19:14		
8015D GCV GRO	Analytical Method: EPA 8015D Preparation Method: EPA 5030 Pace Analytical Services - Minneapolis							
Gasoline Range Organics	ND	mg/kg	2.9	1	05/03/23 16:52	05/04/23 01:08		
Surrogates								
a,a,a-Trifluorotoluene (S)	107	%.	75-125	1	05/03/23 16:52	05/04/23 01:08	98-08-8	
Metals (ICP) 6010B-NE493 Ch 2	Analytical Method: 6010B-NE493 Ch 2 Preparation Method: HWS Boron Pace National - Mt. Juliet							
Boron, Hot Water Soluble	**1950**	ug/L	1000	5	05/02/23 14:37	05/03/23 12:27	7440-42-8H	
6010D MET ICP	Analytical Method: EPA 6010D Preparation Method: EPA 3050B Pace Analytical Services - Minneapolis							
Arsenic	**4.1**	mg/kg	1.1	1	05/04/23 08:40	05/08/23 14:49	7440-38-2	
Barium	**93.4**	mg/kg	0.53	1	05/04/23 08:40	05/08/23 14:49	7440-39-3	
Cadmium	**0.53**	mg/kg	0.16	1	05/04/23 08:40	05/08/23 14:49	7440-43-9	
Copper	**11.1**	mg/kg	0.53	1	05/04/23 08:40	05/08/23 14:49	7440-50-8	
Lead	**8.3**	mg/kg	0.53	1	05/04/23 08:40	05/08/23 14:49	7439-92-1	
Nickel	**10.8**	mg/kg	1.1	1	05/04/23 08:40	05/08/23 14:49	7440-02-0	
Selenium	ND	mg/kg	1.1	1	05/04/23 08:40	05/08/23 14:49	7782-49-2	
Silver	ND	mg/kg	0.53	1	05/04/23 08:40	05/08/23 14:49	7440-22-4	
Zinc	**38.7**	mg/kg	2.1	1	05/04/23 08:40	05/08/23 14:49	7440-66-6	
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis							
Percent Moisture	**7.8**	%	0.10	1		04/28/23 12:05		N2
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Acenaphthene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	83-32-9	
Anthracene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	120-12-7	
Benzo(a)anthracene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	56-55-3	
Benzo(a)pyrene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	50-32-8	
Benzo(b)fluoranthene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	205-99-2	
Benzo(k)fluoranthene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	207-08-9	
Chrysene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	218-01-9	
Dibenz(a,h)anthracene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	53-70-3	
Fluoranthene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	206-44-0	
Fluorene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	86-73-7	

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: PA Well 20-3
Pace Project No.: 10650977

Sample: Well 20-3 Background **Lab ID: 10650977003** Collected: 04/26/23 11:00 Received: 04/27/23 08:50 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270E MSSV PAH by SIM	Analytical Method: EPA 8270E by SIM Preparation Method: EPA 3546 Pace Analytical Services - Minneapolis							
Indeno(1,2,3-cd)pyrene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	193-39-5	
1-Methylnaphthalene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	90-12-0	
2-Methylnaphthalene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	91-57-6	
Naphthalene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	91-20-3	
Pyrene	ND	ug/kg	10.8	1	05/02/23 11:52	05/04/23 12:56	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%.	54-125	1	05/02/23 11:52	05/04/23 12:56	321-60-8	
p-Terphenyl-d14 (S)	93	%.	60-125	1	05/02/23 11:52	05/04/23 12:56	1718-51-0	
8260D MSV UST	Analytical Method: EPA 8260D Preparation Method: EPA 5035/5030B Pace Analytical Services - Minneapolis							
Benzene	ND	ug/kg	12.8	1	04/28/23 10:23	05/02/23 01:07	71-43-2	
Ethylbenzene	ND	ug/kg	31.9	1	04/28/23 10:23	05/02/23 01:07	100-41-4	
Toluene	ND	ug/kg	31.9	1	04/28/23 10:23	05/02/23 01:07	108-88-3	
1,2,4-Trimethylbenzene	ND	ug/kg	31.9	1	04/28/23 10:23	05/02/23 01:07	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	31.9	1	04/28/23 10:23	05/02/23 01:07	108-67-8	
Xylene (Total)	ND	ug/kg	95.8	1	04/28/23 10:23	05/02/23 01:07	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102	%.	75-125	1	04/28/23 10:23	05/02/23 01:07	460-00-4	
Toluene-d8 (S)	104	%.	75-125	1	04/28/23 10:23	05/02/23 01:07	2037-26-5	
1,2-Dichlorobenzene-d4 (S)	98	%.	75-125	1	04/28/23 10:23	05/02/23 01:07	2199-69-1	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G Pace National - Mt. Juliet							
Total Solids	**91.9**	%		1	05/02/23 10:53	05/02/23 11:07		
Wet Chemistry 7199	Analytical Method: EPA 7199 Preparation Method: 3060A Pace National - Mt. Juliet							
Chromium, Hexavalent	ND	mg/kg	1.09	1	05/02/23 18:48	05/03/23 12:02		
Wet Chemistry 9045D	Analytical Method: EPA 9045D Preparation Method: 9045C/9045D Pace National - Mt. Juliet							
pH	**7.55**	Std. Units		1	05/03/23 07:59	05/03/23 14:45		H3
Wet Chemistry 9050AMod	Analytical Method: EPA 9050 Preparation Method: 9050A Pace National - Mt. Juliet							
Specific Conductance	**694**	umhos/cm	10.0	1	05/03/23 13:20	05/03/23 14:36		
Calculated Results	Analytical Method: Calculated Preparation Method: Calc Pace National - Mt. Juliet							
Sodium Adsorption Ratio	**0.141**			1	05/04/23 18:54	05/04/23 18:54		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 879120
QC Batch Method: EPA 5030
Analysis Method: EPA 8015D
Analysis Description: 8015D GCV GRO Solid
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10650977001, 10650977002, 10650977003

METHOD BLANK: 4633740 Matrix: Solid
Associated Lab Samples: 10650977001, 10650977002, 10650977003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	5.0	05/03/23 23:30	
a,a,a-Trifluorotoluene (S)	%.	106	75-125	05/03/23 23:30	

LABORATORY CONTROL SAMPLE: 4633741

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	50	51.7	103	75-125	
a,a,a-Trifluorotoluene (S)	%.			111	75-125	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4633746 4633747

Parameter	Units	10650977002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Gasoline Range Organics	mg/kg	21.3	49.8	49.8	38.9	39.8	36	37	31-149	2	
a,a,a-Trifluorotoluene (S)	%.						90	92	75-125		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 2051800
QC Batch Method: HWS Boron
Analysis Method: 6010B-NE493 Ch 2
Analysis Description: Metals (ICP) 6010B-NE493 Ch 2
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10650977001, 10650977002, 10650977003

METHOD BLANK: R3920527-1 Matrix: Solid
Associated Lab Samples: 10650977001, 10650977002, 10650977003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron, Hot Water Soluble	ug/L	ND	200	05/03/23 12:13	

LABORATORY CONTROL SAMPLE & LCSD: R3920527-2 R3920527-3

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Boron, Hot Water Soluble	ug/L	1000	1080	1070	108	107	80.0-120	0.787	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 878362
QC Batch Method: EPA 3050B
Analysis Method: EPA 6010D
Analysis Description: 6010D Solids
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10650977001, 10650977002, 10650977003

METHOD BLANK: 4630971 Matrix: Solid
Associated Lab Samples: 10650977001, 10650977002, 10650977003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	0.98	05/08/23 14:34	
Barium	mg/kg	ND	0.49	05/08/23 14:34	
Cadmium	mg/kg	ND	0.15	05/08/23 14:34	
Copper	mg/kg	ND	0.49	05/08/23 14:34	
Lead	mg/kg	ND	0.49	05/08/23 14:34	
Nickel	mg/kg	ND	0.98	05/08/23 14:34	
Selenium	mg/kg	ND	0.98	05/08/23 14:34	
Silver	mg/kg	ND	0.49	05/08/23 14:34	
Zinc	mg/kg	ND	2.0	05/08/23 14:34	

LABORATORY CONTROL SAMPLE: 4630972

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	48	47.9	100	80-120	
Barium	mg/kg	48	51.7	108	80-120	
Cadmium	mg/kg	48	51.0	106	80-120	
Copper	mg/kg	48	49.9	104	80-120	
Lead	mg/kg	48	50.2	105	80-120	
Nickel	mg/kg	48	50.5	105	80-120	
Selenium	mg/kg	48	47.2	98	80-120	
Silver	mg/kg	24	24.3	101	80-120	
Zinc	mg/kg	48	49.9	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4630973 4630974

Parameter	Units	10650976001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Arsenic	mg/kg	5.8	53.9	54.1	49.8	49.1	82	80	75-125	1	
Barium	mg/kg	124	53.9	54.1	174	169	93	84	75-125	3	
Cadmium	mg/kg	0.68	53.9	54.1	43.5	43.4	79	79	75-125	0	
Copper	mg/kg	12.6	53.9	54.1	59.6	59.6	87	87	75-125	0	
Lead	mg/kg	9.4	53.9	54.1	50.3	50.4	76	76	75-125	0	
Nickel	mg/kg	14.2	53.9	54.1	57.5	56.1	80	78	75-125	2	
Selenium	mg/kg	ND	53.9	54.1	43.5	42.3	80	77	75-125	3	
Silver	mg/kg	ND	26.9	27	23.2	23.1	86	85	75-125	0	
Zinc	mg/kg	44.7	53.9	54.1	88.6	85.9	82	76	75-125	3	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 878097
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10650977001, 10650977002, 10650977003

SAMPLE DUPLICATE: 4629958

Parameter	Units	10649448001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	15.5	14.6	6	N2

SAMPLE DUPLICATE: 4629959

Parameter	Units	10651062001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	41.1	41.6	1	N2

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 878126 | Analysis Method: EPA 8260D
QC Batch Method: EPA 5035/5030B | Analysis Description: 8260D MSV UST
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10650977001, 10650977002, 10650977003

METHOD BLANK: 4629731 Matrix: Solid
Associated Lab Samples: 10650977001, 10650977002, 10650977003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	ND	50.0	05/02/23 00:06	
1,3,5-Trimethylbenzene	ug/kg	ND	50.0	05/02/23 00:06	
Benzene	ug/kg	ND	20.0	05/02/23 00:06	
Ethylbenzene	ug/kg	ND	50.0	05/02/23 00:06	
Toluene	ug/kg	ND	50.0	05/02/23 00:06	
Xylene (Total)	ug/kg	ND	150	05/02/23 00:06	
1,2-Dichlorobenzene-d4 (S)	%.	96	75-125	05/02/23 00:06	
4-Bromofluorobenzene (S)	%.	103	75-125	05/02/23 00:06	
Toluene-d8 (S)	%.	104	75-125	05/02/23 00:06	

LABORATORY CONTROL SAMPLE & LCSD: 4629732 4629733

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/kg	1000	951	827	95	83	75-134	14	20	
1,3,5-Trimethylbenzene	ug/kg	1000	940	823	94	82	75-132	13	20	
Benzene	ug/kg	1000	983	938	98	94	72-125	5	20	
Ethylbenzene	ug/kg	1000	890	829	89	83	75-130	7	20	
Toluene	ug/kg	1000	933	898	93	90	75-125	4	20	
Xylene (Total)	ug/kg	3000	2670	2500	89	83	75-126	7	20	
1,2-Dichlorobenzene-d4 (S)	%.				104	103	75-125			
4-Bromofluorobenzene (S)	%.				98	100	75-125			
Toluene-d8 (S)	%.				98	99	75-125			

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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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 878495
QC Batch Method: EPA 3550 Sonication
Analysis Method: EPA 8015D Modified
Analysis Description: 8015D Solid GCSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10650977001, 10650977002, 10650977003

METHOD BLANK: 4631332 Matrix: Solid
Associated Lab Samples: 10650977001, 10650977002, 10650977003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Motor Oil Range (C24-C36)	mg/kg	ND	10.0	05/02/23 15:51	N2
TPH-DRO (C10-C28)	mg/kg	ND	10.0	05/02/23 15:51	
n-Triacontane (S)	%.	74	30-150	05/02/23 15:51	
o-Terphenyl (S)	%.	93	30-150	05/02/23 15:51	

LABORATORY CONTROL SAMPLE: 4631333

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Motor Oil Range (C24-C36)	mg/kg	50	48.1	96	74-125	N2
TPH-DRO (C10-C28)	mg/kg	50	43.1	86	60-125	
n-Triacontane (S)	%.			74	30-150	
o-Terphenyl (S)	%.			88	30-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4631334 4631335

Parameter	Units	10651135017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Motor Oil Range (C24-C36)	mg/kg	17.3	60.7	60.2	76.4	69.5	97	87	36-150	9	N2
TPH-DRO (C10-C28)	mg/kg	ND	60.7	60.2	60.9	56.2	92	85	41-125	8	
n-Triacontane (S)	%.						78	76	30-150		
o-Terphenyl (S)	%.						86	88	30-150		

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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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 878749
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Solid PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10650977001, 10650977003

METHOD BLANK: 4632127 Matrix: Solid
Associated Lab Samples: 10650977001, 10650977003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	10.0	05/03/23 14:39	
2-Methylnaphthalene	ug/kg	ND	10.0	05/03/23 14:39	
Acenaphthene	ug/kg	ND	10.0	05/03/23 14:39	
Anthracene	ug/kg	ND	10.0	05/03/23 14:39	
Benzo(a)anthracene	ug/kg	ND	10.0	05/03/23 14:39	
Benzo(a)pyrene	ug/kg	ND	10.0	05/03/23 14:39	
Benzo(b)fluoranthene	ug/kg	ND	10.0	05/03/23 14:39	
Benzo(k)fluoranthene	ug/kg	ND	10.0	05/03/23 14:39	
Chrysene	ug/kg	ND	10.0	05/03/23 14:39	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	05/03/23 14:39	
Fluoranthene	ug/kg	ND	10.0	05/03/23 14:39	
Fluorene	ug/kg	ND	10.0	05/03/23 14:39	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	05/03/23 14:39	
Naphthalene	ug/kg	ND	10.0	05/03/23 14:39	
Pyrene	ug/kg	ND	10.0	05/03/23 14:39	
2-Fluorobiphenyl (S)	%.	49	54-125	05/03/23 14:39	S0
p-Terphenyl-d14 (S)	%.	93	60-125	05/03/23 14:39	

LABORATORY CONTROL SAMPLE: 4632128

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	100	61.7	62	41-125	
2-Methylnaphthalene	ug/kg	100	62.3	62	45-125	
Acenaphthene	ug/kg	100	64.4	64	56-125	
Anthracene	ug/kg	100	86.5	87	59-125	
Benzo(a)anthracene	ug/kg	100	86.4	86	55-125	
Benzo(a)pyrene	ug/kg	100	87.1	87	69-125	
Benzo(b)fluoranthene	ug/kg	100	88.6	89	54-125	
Benzo(k)fluoranthene	ug/kg	100	91.0	91	65-125	
Chrysene	ug/kg	100	90.0	90	62-125	
Dibenz(a,h)anthracene	ug/kg	100	89.5	90	64-125	
Fluoranthene	ug/kg	100	90.2	90	69-125	
Fluorene	ug/kg	100	71.2	71	61-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	86.7	87	54-125	
Naphthalene	ug/kg	100	60.5	60	49-125	
Pyrene	ug/kg	100	91.2	91	69-125	
2-Fluorobiphenyl (S)	%.			69	54-125	
p-Terphenyl-d14 (S)	%.			95	60-125	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4632129 4632130

Parameter	Units	10651801001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1-Methylnaphthalene	ug/kg	ND	98.9	97.9	47.5	72.1	48	74	30-125	41	R1
2-Methylnaphthalene	ug/kg	ND	98.9	97.9	48.1	72.3	49	74	30-150	40	R1
Acenaphthene	ug/kg	ND	98.9	97.9	59.2	79.9	60	82	51-125	30	
Anthracene	ug/kg	ND	98.9	97.9	87.1	87.7	88	90	39-136	1	
Benzo(a)anthracene	ug/kg	22.2	98.9	97.9	112	109	91	89	30-131	3	
Benzo(a)pyrene	ug/kg	23.9	98.9	97.9	118	115	95	93	30-150	3	
Benzo(b)fluoranthene	ug/kg	30.5	98.9	97.9	135	126	106	98	30-150	7	
Benzo(k)fluoranthene	ug/kg	14.1	98.9	97.9	107	112	94	99	41-130	5	
Chrysene	ug/kg	24.3	98.9	97.9	117	113	94	90	30-135	4	
Dibenz(a,h)anthracene	ug/kg	ND	98.9	97.9	89.3	92.9	86	90	50-129	4	
Fluoranthene	ug/kg	48.5	98.9	97.9	149	132	102	85	30-150	12	
Fluorene	ug/kg	ND	98.9	97.9	78.5	91.8	79	94	56-125	16	
Indeno(1,2,3-cd)pyrene	ug/kg	17.1	98.9	97.9	103	104	86	89	30-148	1	
Naphthalene	ug/kg	ND	98.9	97.9	47.6	69.7	48	71	30-125	38	R1
Pyrene	ug/kg	45.0	98.9	97.9	130	124	86	80	30-150	5	
2-Fluorobiphenyl (S)	%.						54	86	54-125		
p-Terphenyl-d14 (S)	%.						92	99	60-125		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 879293
QC Batch Method: EPA 3546
Analysis Method: EPA 8270E by SIM
Analysis Description: 8270E Solid PAH by SIM MSSV
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10650977002

METHOD BLANK: 4634689 Matrix: Solid
Associated Lab Samples: 10650977002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1-Methylnaphthalene	ug/kg	ND	10.0	05/05/23 10:10	
2-Methylnaphthalene	ug/kg	ND	10.0	05/05/23 10:10	
Acenaphthene	ug/kg	ND	10.0	05/05/23 10:10	
Anthracene	ug/kg	ND	10.0	05/05/23 10:10	
Benzo(a)anthracene	ug/kg	ND	10.0	05/05/23 10:10	
Benzo(a)pyrene	ug/kg	ND	10.0	05/05/23 10:10	
Benzo(b)fluoranthene	ug/kg	ND	10.0	05/05/23 10:10	
Benzo(k)fluoranthene	ug/kg	ND	10.0	05/05/23 10:10	
Chrysene	ug/kg	ND	10.0	05/05/23 10:10	
Dibenz(a,h)anthracene	ug/kg	ND	10.0	05/05/23 10:10	
Fluoranthene	ug/kg	ND	10.0	05/05/23 10:10	
Fluorene	ug/kg	ND	10.0	05/05/23 10:10	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	10.0	05/05/23 10:10	
Naphthalene	ug/kg	ND	10.0	05/05/23 10:10	
Pyrene	ug/kg	ND	10.0	05/05/23 10:10	
2-Fluorobiphenyl (S)	%.	44	54-125	05/05/23 10:10	S0
p-Terphenyl-d14 (S)	%.	98	60-125	05/05/23 10:10	

LABORATORY CONTROL SAMPLE: 4634690

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Methylnaphthalene	ug/kg	100	55.4	55	41-125	
2-Methylnaphthalene	ug/kg	100	51.3	51	45-125	
Acenaphthene	ug/kg	100	59.1	59	56-125	
Anthracene	ug/kg	100	76.4	76	59-125	
Benzo(a)anthracene	ug/kg	100	73.5	73	55-125	
Benzo(a)pyrene	ug/kg	100	75.9	76	69-125	
Benzo(b)fluoranthene	ug/kg	100	77.8	78	54-125	
Benzo(k)fluoranthene	ug/kg	100	85.8	86	65-125	
Chrysene	ug/kg	100	77.8	78	62-125	
Dibenz(a,h)anthracene	ug/kg	100	81.1	81	64-125	
Fluoranthene	ug/kg	100	71.6	72	69-125	
Fluorene	ug/kg	100	61.7	62	61-125	
Indeno(1,2,3-cd)pyrene	ug/kg	100	79.4	79	54-125	
Naphthalene	ug/kg	100	52.7	53	49-125	
Pyrene	ug/kg	100	81.2	81	69-125	
2-Fluorobiphenyl (S)	%.			57	54-125	
p-Terphenyl-d14 (S)	%.			88	60-125	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: PA Web 20-3
Pace Project No.: 10650977

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 4634691 4634692

Parameter	Units	10652242001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1-Methylnaphthalene	ug/kg	ND	99.6	97.8	68.1	69.7	68	71	30-125	2	
2-Methylnaphthalene	ug/kg	ND	99.6	97.8	66.6	70.7	67	72	30-150	6	
Acenaphthene	ug/kg	ND	99.6	97.8	72.4	71.0	73	73	51-125	2	
Anthracene	ug/kg	0.062 mg/kg	99.6	97.8	124	127	62	66	39-136	2	
Benzo(a)anthracene	ug/kg	0.20 mg/kg	99.6	97.8	245	255	45	56	30-131	4	
Benzo(a)pyrene	ug/kg	0.21 mg/kg	99.6	97.8	248	260	42	55	30-150	5	
Benzo(b)fluoranthene	ug/kg	0.25 mg/kg	99.6	97.8	298	307	49	59	30-150	3	
Benzo(k)fluoranthene	ug/kg	0.12 mg/kg	99.6	97.8	180	179	64	64	41-130	0	
Chrysene	ug/kg	0.21 mg/kg	99.6	97.8	257	267	48	60	30-135	4	
Dibenz(a,h)anthracene	ug/kg	0.037 mg/kg	99.6	97.8	98.1	105	62	70	50-129	7	
Fluoranthene	ug/kg	0.35 mg/kg	99.6	97.8	374	399	27	54	30-150	7	M1
Fluorene	ug/kg	ND	99.6	97.8	81.1	78.2	81	80	56-125	4	
Indeno(1,2,3-cd)pyrene	ug/kg	0.14 mg/kg	99.6	97.8	190	197	53	61	30-148	4	
Naphthalene	ug/kg	ND	99.6	97.8	51.4	62.6	52	64	30-125	20	
Pyrene	ug/kg	0.35 mg/kg	99.6	97.8	387	421	35	71	30-150	8	
2-Fluorobiphenyl (S)	%.						66	68	54-125		
p-Terphenyl-d14 (S)	%.						82	84	60-125		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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(612)607-1700

QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 2051115
QC Batch Method: SM 2540 G
Analysis Method: SM 2540G
Analysis Description: Total Solids 2540 G-2011
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10650977001, 10650977002, 10650977003

METHOD BLANK: R3920156-1 Matrix: Solid
Associated Lab Samples: 10650977001, 10650977002, 10650977003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	0.00200		05/02/23 11:07	

LABORATORY CONTROL SAMPLE: R3920156-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	%	50.0	50.0	100	85.0-115	

SAMPLE DUPLICATE: R3920156-3

Parameter	Units	L1610291-06 Result	Dup Result	RPD	Qualifiers
Total Solids	%	76.9	75.7	1.50	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 2052786
QC Batch Method: 3060A
Analysis Method: EPA 7199
Analysis Description: Wet Chemistry 7199
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10650977001, 10650977002, 10650977003

METHOD BLANK: R3920469-1 Matrix: Solid
Associated Lab Samples: 10650977001, 10650977002, 10650977003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/kg	ND	1.00	05/03/23 11:13	

LABORATORY CONTROL SAMPLE: R3920469-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/kg	10.0	10.5	105	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3920469-3 R3920469-4

Parameter	Units	L1607939-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Chromium, Hexavalent	mg/kg	2.15	25.5	25.5	24.7	26.7	88.4	96.4	75.0-125	7.93	

MATRIX SPIKE SAMPLE: R3920469-5

Parameter	Units	L1607939-01 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/kg	2.15	824	812	98.6	75.0-125	

SAMPLE DUPLICATE: R3920469-7

Parameter	Units	L1610752-01 Result	Dup Result	RPD	Qualifiers
Chromium, Hexavalent	mg/kg	ND	ND	0.00	

SAMPLE DUPLICATE: R3920469-8

Parameter	Units	L1610752-03 Result	Dup Result	RPD	Qualifiers
Chromium, Hexavalent	mg/kg	ND	ND	0.00	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 2052791
QC Batch Method: 9045C/9045D
Analysis Method: EPA 9045D
Analysis Description: Wet Chemistry 9045D
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10650977003

LABORATORY CONTROL SAMPLE: R3920491-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH	Std. Units	10.0	9.99	99.9	99.0-101	

SAMPLE DUPLICATE: R3920491-2

Parameter	Units	10650977003 Result	Dup Result	RPD	Qualifiers
pH	Std. Units	7.55	7.61	0.792	

SAMPLE DUPLICATE: R3920491-3

Parameter	Units	L1610384-03 Result	Dup Result	RPD	Qualifiers
pH	Std. Units	7.92	7.93	0.126	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 2052795
QC Batch Method: 9045C/9045D
Analysis Method: EPA 9045D
Analysis Description: Wet Chemistry 9045D
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10650977001, 10650977002

LABORATORY CONTROL SAMPLE: R3920112-1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
pH	Std. Units	10.0	10.0	100	99.0-101	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 2051237
QC Batch Method: 9050A
Analysis Method: EPA 9050
Analysis Description: Wet Chemistry 9050AMod
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10650977001, 10650977002, 10650977003

METHOD BLANK: R3920455-1 Matrix: Solid
Associated Lab Samples:

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	10.0	05/03/23 14:36	

LABORATORY CONTROL SAMPLE: R3920455-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1120	1170	104	85.0-115	

SAMPLE DUPLICATE: R3920455-3

Parameter	Units	L1610421-02 Result	Dup Result	RPD	Qualifiers
Specific Conductance	umhos/cm	117	117	0.171	

SAMPLE DUPLICATE: R3920455-4

Parameter	Units	L1610593-03 Result	Dup Result	RPD	Qualifiers
Specific Conductance	umhos/cm	189	190	0.158	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: PA Well 20-3
Pace Project No.: 10650977

QC Batch: 2051237
QC Batch Method: EPA 9050
Analysis Method: EPA 9050
Analysis Description: Wet Chemistry 9050AMod
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10650977001, 10650977002, 10650977003

METHOD BLANK: R3920455-1 Matrix: Solid
Associated Lab Samples:

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	10.0	05/03/23 14:36	

LABORATORY CONTROL SAMPLE: R3920455-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1120	1170	104	85.0-115	

SAMPLE DUPLICATE: R3920455-3

Parameter	Units	L1610421-02 Result	Dup Result	RPD	Qualifiers
Specific Conductance	umhos/cm	117	117	0.171	

SAMPLE DUPLICATE: R3920455-4

Parameter	Units	L1610593-03 Result	Dup Result	RPD	Qualifiers
Specific Conductance	umhos/cm	189	190	0.158	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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(612)607-1700

QUALIFIERS

Project: PA Well 20-3
Pace Project No.: 10650977

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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

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

TNI - The NELAC Institute.

WORKORDER QUALIFIERS

WO: 10650977

[1] The samples were received outside of required temperature range. Analysis was completed upon client approval.

SAMPLE QUALIFIERS

Sample: 10650977001

[1] Wet Chemistry by Method 9045D - 7.7 at 20.4C

[1] Wet Chemistry by Method 9050AMod - at 25C

Sample: 10650977002

[1] Wet Chemistry by Method 9045D - 7.61 at 20.5C

[1] Wet Chemistry by Method 9050AMod - at 25C

Sample: 10650977003

[1] Wet Chemistry by Method 9045D - 7.55 at 20.1C

[1] Wet Chemistry by Method 9050AMod - at 25C

Sample: R3920112-1

[1] Wet Chemistry by Method 9045D - 10 at 19.1C

Sample: R3920455-1

[1] Wet Chemistry by Method 9050AMod - at 25C

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: PA Well 20-3
Pace Project No.: 10650977

SAMPLE QUALIFIERS

Sample: R3920455-2
[1] Wet Chemistry by Method 9050AMod - at 25C
Sample: R3920455-3
[1] Wet Chemistry by Method 9050AMod - at 25C
Sample: R3920455-4
[1] Wet Chemistry by Method 9050AMod - at 25C
Sample: R3920491-1
[1] Wet Chemistry by Method 9045D - 9.99 at 20.4C
Sample: R3920491-2
[1] Wet Chemistry by Method 9045D - 7.61 at 19.8C
Sample: R3920491-3
[1] Wet Chemistry by Method 9045D - 7.93 at 19.4C
Sample: L1610384-03
[1] Wet Chemistry by Method 9045D - 7.92 at 19.7C
Sample: L1610421-02
[1] Wet Chemistry by Method 9050AMod - at 25C
Sample: L1610593-03
[1] Wet Chemistry by Method 9050AMod - at 25C

BATCH QUALIFIERS

Batch: 878692
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

D4	Sample was diluted due to the presence of high levels of target analytes.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PA Well 20-3
Pace Project No.: 10650977

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10650977001	**Well 20-3 Pad Surface**	EPA 3550 Sonication	878495	EPA 8015D Modified	878684
10650977002	**Well 20-3 Well Head@8'**	EPA 3550 Sonication	878495	EPA 8015D Modified	878684
10650977003	**Well 20-3 Background**	EPA 3550 Sonication	878495	EPA 8015D Modified	878684
10650977001	**Well 20-3 Pad Surface**	EPA 5030	879120	EPA 8015D	879129
10650977002	**Well 20-3 Well Head@8'**	EPA 5030	879120	EPA 8015D	879129
10650977003	**Well 20-3 Background**	EPA 5030	879120	EPA 8015D	879129
10650977001	**Well 20-3 Pad Surface**	HWS Boron	2051800	6010B-NE493 Ch 2	2051800
10650977002	**Well 20-3 Well Head@8'**	HWS Boron	2051800	6010B-NE493 Ch 2	2051800
10650977003	**Well 20-3 Background**	HWS Boron	2051800	6010B-NE493 Ch 2	2051800
10650977001	**Well 20-3 Pad Surface**	EPA 3050B	878362	EPA 6010D	879283
10650977002	**Well 20-3 Well Head@8'**	EPA 3050B	878362	EPA 6010D	879283
10650977003	**Well 20-3 Background**	EPA 3050B	878362	EPA 6010D	879283
10650977001	**Well 20-3 Pad Surface**	ASTM D2974	878097		
10650977002	**Well 20-3 Well Head@8'**	ASTM D2974	878097		
10650977003	**Well 20-3 Background**	ASTM D2974	878097		
10650977001	**Well 20-3 Pad Surface**	EPA 3546	878749	EPA 8270E by SIM	878971
10650977002	**Well 20-3 Well Head@8'**	EPA 3546	879293	EPA 8270E by SIM	879436
10650977003	**Well 20-3 Background**	EPA 3546	878749	EPA 8270E by SIM	878971
10650977001	**Well 20-3 Pad Surface**	EPA 5035/5030B	878126	EPA 8260D	878692
10650977002	**Well 20-3 Well Head@8'**	EPA 5035/5030B	878126	EPA 8260D	878692
10650977003	**Well 20-3 Background**	EPA 5035/5030B	878126	EPA 8260D	878692
10650977001	**Well 20-3 Pad Surface**	SM 2540 G	2051115	SM 2540G	2051115
10650977002	**Well 20-3 Well Head@8'**	SM 2540 G	2051115	SM 2540G	2051115
10650977003	**Well 20-3 Background**	SM 2540 G	2051115	SM 2540G	2051115
10650977001	**Well 20-3 Pad Surface**	3060A	2052786	EPA 7199	2052786
10650977002	**Well 20-3 Well Head@8'**	3060A	2052786	EPA 7199	2052786
10650977003	**Well 20-3 Background**	3060A	2052786	EPA 7199	2052786
10650977001	**Well 20-3 Pad Surface**	9045C/9045D	2052795	EPA 9045D	2052795
10650977002	**Well 20-3 Well Head@8'**	9045C/9045D	2052795	EPA 9045D	2052795
10650977003	**Well 20-3 Background**	9045C/9045D	2052791	EPA 9045D	2052791
10650977001	**Well 20-3 Pad Surface**	9050A	2051237	EPA 9050	2051237
10650977002	**Well 20-3 Well Head@8'**	9050A	2051237	EPA 9050	2051237
10650977003	**Well 20-3 Background**	9050A	2051237	EPA 9050	2051237
10650977001	**Well 20-3 Pad Surface**	Calc	2051798	Calculated	2051798
10650977002	**Well 20-3 Well Head@8'**	Calc	2051798	Calculated	2051798
10650977003	**Well 20-3 Background**	Calc	2051798	Calculated	2051798

REPORT OF LABORATORY ANALYSIS

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: WELLINGTON OPERATING CO.	Billing Information: AP WELLINGTON OPERATING CO. (WELOP) 15301 DALLAS PKWY, SUITE 900 ADDISON, TX 75001
Address: 1590 EAST CTY RD 70; WELLINGTON CO 80549	
Report To: RANDY EVANS	Email To: AP@KINGOPERATING.COM
Copy To:	Site Collection Info/Address: 1590 EAST CTY RD 70
Customer Project Name/Number: PA WELL 20-3	State: CO County/City: LARIMER / WELLINGTON Time Zone Collected: [ ] PT [X] MT [ ] CT [ ] ET
Phone: 970-402-0918 Email: rgevans4776@gmail.com	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected By (print): CONNER STALEY	Purchase Order #: WOC-RE-089 Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [X] 5 Day (Expedite Charges Apply)
	Field Filtered (if applicable): [ ] Yes [X] No Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Soil TPH (C6-C10)	Soil TPH (C10-C36)	Soil Suitability for Reclamation See Attached	Organic Compounds in Soil See Attached	Metals in Soils See Attached	Lab Sample # / Comments
WELL 20-3 PAD SURFACE	SOIL	G	4/26/23	10:00				8	X	X	X	X	X	001
WELL 20-3 WELLHEAD @ 8'	SOIL	G	4/26/23	10:30				8	X	X	X	X	X	002
WELL 20-3 BACKGROUND	SOIL	G	4/26/23	11:00				8	X	X	X	X	X	003

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

WO#: 10650977

10650977

Customer Remarks / Special Conditions / Possible Hazards:
PLEASE NOTE NEW OFFICE MAILING ADDRESS IN TEXAS

PLEASE EDD FILE

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2843501

Samples received via: FEDEX UPS Client Courier Pace Courier

Cooler Info:
Temp Blank Received: Y N NA
Therm ID#: T2
Cooler 1 Temp Upon Receipt: 7.2 oC
Cooler 1 Therm Corr. Factor: True oC
Cooler 1 Corrected Temp: 7.2 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
WOC RANDY EVANS		BW G/PACE	4/27/23 8:50
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

Sample Condition Upon Receipt

Client Name: Wellington Operating Co.

Project #: **WO#: 10650977**
PM: Y01 Due Date: 05/11/23
CLIENT: Wellington

Courier: ☑ FedEx ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 5405 1824 8713 ☐ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ T1 (0461) ☑ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☐ T9(0727) ☐ 01339252/1710 **Type of Ice:** ☑ Wet ☐ Blue ☐ Dry ☐ None ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☑ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6 °C **Cooler temp Read w/Temp Blank:** 7.2 °C

Correction Factor: True **Cooler Temp Corrected w/temp blank:** 7.2 °C

Average Corrected Temp (no temp blank only): ____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/other: _____) **Date/Initials of Person Examining Contents:** BG2 4/27/23

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): ☐ Duluth ☑ Minneapolis ☐ Virginia

				COMMENTS
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☑ Yes	☐ No		6. 5 Day
Sufficient Sample Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☑ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
Matrix: ☐ Water ☑ Soil ☐ Oil ☐ Other				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO3 ☐ H2SO4 ☐ Zinc Acetate
Exceptions: (VOA) Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	☑ Yes	☐ No	☐ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142
				pH Paper Lot #
				Residual Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	
3 Trip Blanks Present?	☐ Yes	☑ No	☐ N/A	15. No trip Blanks
Trip Blank Custody Seals Present?	☐ Yes	☑ No	☐ N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: PN can only do 7-10 turn. Client wants report when all samples are complete.

Project Manager Review: Yeng Ozawa **Date:** 4/27/23

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: BG2 **Line:** 1

Table 915-1
CLEANUP CONCENTRATIONS

Contaminant of Concern	Concentrations
Soil TPH (total volatile [C_6-C_{10}] and extractable [C_{10}-C_{36}] hydrocarbons)	500mg/kg
Soils and Groundwater - liquid hydrocarbons including condensate and oil	below visual detection limits
Soil Suitability for Reclamation	
Electrical conductivity (EC) (by saturated paste method)[1,2]	<4mmhos/cm
Sodium adsorption ratio (SAR) (by saturated paste method)[1,2,3]	<6
pH (by saturated paste method)[1,2]	6–8.3
boron (hot water soluble soil extract)[1,2,3]	2mg/l
Organic Compounds in Groundwater[4]	
benzene	5µg/l
toluene[5]	560 to 1,000µg/l
ethylbenzene	700µg/l
xylenes (sum of o-, m- and p- isomers = total xylenes)[5]	1,400 to 10,000µg/l
naphthalene	140µg/l
1,2,4-trimethylbenzene	67µg/l
1,3,5-trimethylbenzene	67µg/l
Groundwater Inorganic Parameters[4]	
total dissolved solids (TDS)[1]	<1.25 X local background
chloride ion[1]	250mg/l or <1.25 X local background
sulfate ion[1]	250mg/l or <1.25 X local background

Table 915-1 (continued)

Contaminant of Concern	Concentrations	
	Residential Soil Screening Level Concentrations (mg/kg)[7]	Protection of Groundwater Soil Screening Level Concentrations (mg/kg) Risk Based (R) and MCL Based (M)[7,8]
Organic Compounds in Soils[6, 9, 10]		
benzene	1.2	0.0026 (M)
toluene	490	0.69 (M)
ethylbenzene	5.8	0.78 (M)
xylenes (sum of o-, m- and p- isomers = total xylenes)	58	9.9 (M)
1,2,4-trimethylbenzene	30	0.0081 (R)
1,3,5-trimethylbenzene	27	0.0087 (R)
acenaphthene	360	0.55 (R)
anthracene	1800	5.8 (R)
benz(a)anthracene	1.1	0.011 (R)
benzo(b)fluoranthene	1.1	0.3 (R)
benzo(k)fluoranthene	11	2.9 (R)
benzo(a)pyrene	0.11	0.24 (M)
chrysene	110	9 (R)
dibenzo(a,h)anthracene	0.11	0.096 (R)
fluoranthene	240	8.9 (R)
fluorene	240	0.54 (R)
indeno(1,2,3-cd)pyrene	1.1	0.98 (R)
1-methylnaphthalene	18	0.006 (R)
2-methylnaphthalene	24	0.019 (R)
naphthalene	2	0.0038 (R)
pyrene	180	1.3 (R)
Metals in Soils[1, 6, 9, 10, 11]		
arsenic	0.68	0.29 (M)
barium	15000	82 (M)
cadmium	71	0.38 (M)
chromium (VI)	0.3	0.00067 (R)
copper	3100	46 (M)
lead	400	14 (M)
nickel	1500	26 (R)
selenium	390	0.26 (M)
silver	390	0.8 (R)
zinc	23000	370 (R)

J116

Internal Transfer Chain of Custody

Pace Analytical® www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: CO
Cert. Needed: ☐ Yes ☐ No

Workorder: 10650977 **Workorder Name:** PA Well 20-3 **Owner Received Date:** 4/27/2023 **Results Requested By:** 5/11/2023

Report To	Subcontract To
Yeng Ozawa Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone (612)607-1700	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

L1610296

JGCU

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: EC/SAR/pH/HWS Boron	Requested Analysis: Hex Chrome (VI)	LAB USE ONLY
1	Well 20-3 Pad Surface	PS	4/26/2023 10:00	10650977001	Solid	1	X	X	-01
2	Well 20-3 Well Head@8'	PS	4/26/2023 10:30	10650977002	Solid	1	X	X	-02
3	Well 20-3 Background	PS	4/26/2023 11:00	10650977003	Solid	1	X	X	-03
4									
5									

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] PACE	4/27/23 1630	[signature] PACE 4.28.23	0900
2				
3				

Comments: Please send 8oz jar to PN.

Cooler Temperature on Receipt 2.8 °C **Custody Seal** Y or N (Y marked) **Received on Ice** Y or N (Y marked) **Samples Intact** Y or N (Y marked)

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Sample Receipt Checklist

		If Applicable	
COC Seal Present/Intact:	✓Y __N		
COC Signed/Accurate:	✓Y __N	VOA Zero Headspace:	__Y __N
Bottles arrive intact:	✓Y __N	Pres.Correct/Check:	__Y __N
Correct bottles used:	✓Y __N	NSAT 2.8+0 = 2.8	
Sufficient volume sent:	✓Y __N		
RAD Screen <0.5 mR/hr:	✓Y __N	6476 5637 5375	

ANALYTICAL REPORT

May 04, 2023

Pace Analytical - Minnesota

Sample Delivery Group:	L1610296
Samples Received:	04/28/2023
Project Number:	10650977
Description:	PA Well 20-3
Site:	001
Report To:	Yeng Ozawa 1700 Elm Street Suite 200 Minneapolis, MN 55414

Entire Report Reviewed By:

Nancy McLain
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

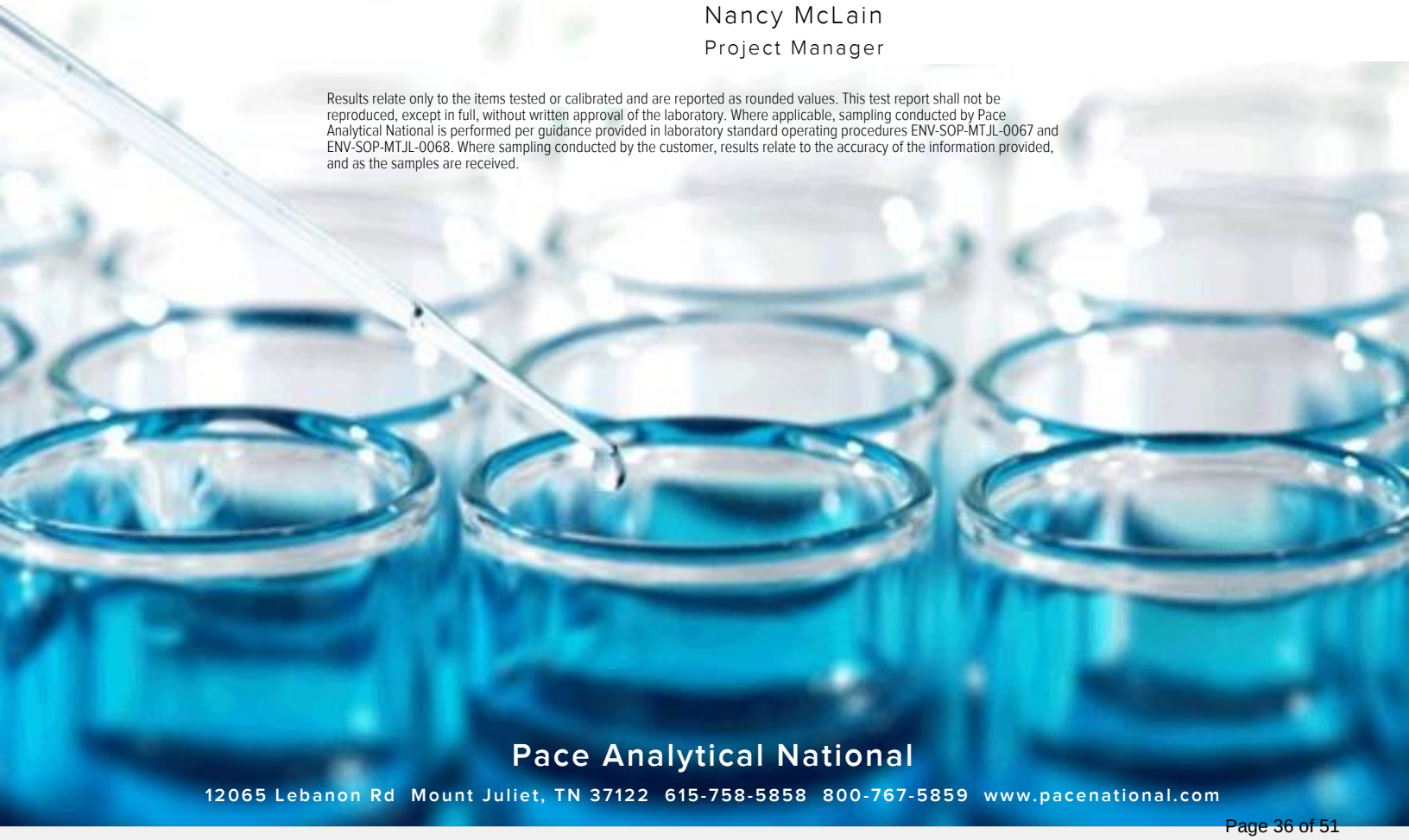

TABLE OF CONTENTS

WELL 20-3 PAD SURFACE L1610296-01 Solid

Collected by | Collected date/time 04/26/23 10:00 | Received date/time 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2051798	1	05/04/23 18:48	05/04/23 18:48	SPL	Mt. Juliet, TN
Total Solids by Method 2540 G-2011	WG2051115	1	05/02/23 10:53	05/02/23 11:07	CMK	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2052786	1	05/02/23 18:48	05/03/23 11:52	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2052795	1	05/02/23 21:00	05/02/23 23:05	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2051237	1	05/03/23 13:20	05/03/23 14:36	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2051800	5	05/02/23 14:37	05/03/23 12:22	SPL	Mt. Juliet, TN

WELL 20-3 WELL HEAD@8' L1610296-02 Solid

Collected by | Collected date/time 04/26/23 10:30 | Received date/time 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2051798	1	05/04/23 18:51	05/04/23 18:51	SPL	Mt. Juliet, TN
Total Solids by Method 2540 G-2011	WG2051115	1	05/02/23 10:53	05/02/23 11:07	CMK	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2052786	1	05/02/23 18:48	05/03/23 11:57	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2052795	1	05/02/23 21:00	05/02/23 23:05	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2051237	1	05/03/23 13:20	05/03/23 14:36	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2051800	5	05/02/23 14:37	05/03/23 12:24	SPL	Mt. Juliet, TN

WELL 20-3 BACKGROUND L1610296-03 Solid

Collected by | Collected date/time 04/26/23 11:00 | Received date/time 04/28/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2051798	1	05/04/23 18:54	05/04/23 18:54	SPL	Mt. Juliet, TN
Total Solids by Method 2540 G-2011	WG2051115	1	05/02/23 10:53	05/02/23 11:07	CMK	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2052786	1	05/02/23 18:48	05/03/23 12:02	SET	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2052791	1	05/03/23 07:59	05/03/23 14:45	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2051237	1	05/03/23 13:20	05/03/23 14:36	NTG	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2051800	5	05/02/23 14:37	05/03/23 12:27	SPL	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Nancy McLain
Project Manager

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.155		1	05/04/2023 18:48	WG2051798

Total Solids by Method 2540 G-2011

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	91.9		1	05/02/2023 11:07	WG2051115

Wet Chemistry by Method 7199

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.277	1.09	1	05/03/2023 11:52	WG2052786

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.70	T8	1	05/02/2023 23:05	WG2052795

Sample Narrative:

L1610296-01 WG2052795: 7.7 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	806		10.0	1	05/03/2023 14:36	WG2051237

Sample Narrative:

L1610296-01 WG2051237: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1820		83.5	1000	5	05/03/2023 12:22	WG2051800

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.193		1	05/04/2023 18:51	WG2051798

Total Solids by Method 2540 G-2011

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	91.2		1	05/02/2023 11:07	WG2051115

Wet Chemistry by Method 7199

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.279	1.10	1	05/03/2023 11:57	WG2052786

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.61	T8	1	05/02/2023 23:05	WG2052795

Sample Narrative:
L1610296-02 WG2052795: 7.61 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	381		10.0	1	05/03/2023 14:36	WG2051237

Sample Narrative:
L1610296-02 WG2051237: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1170		83.5	1000	5	05/03/2023 12:24	WG2051800

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.141		1	05/04/2023 18:54	WG2051798

Total Solids by Method 2540 G-2011

Analyte	Result %	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	91.9		1	05/02/2023 11:07	WG2051115

Wet Chemistry by Method 7199

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.277	1.09	1	05/03/2023 12:02	WG2052786

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.55	T8	1	05/03/2023 14:45	WG2052791

Sample Narrative:
L1610296-03 WG2052791: 7.55 at 20.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	694		10.0	1	05/03/2023 14:36	WG2051237

Sample Narrative:
L1610296-03 WG2051237: at 25C

Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1950		83.5	1000	5	05/03/2023 12:27	WG2051800

Method Blank (MB)

(MB) R3920156-1 05/02/23 11:07

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00200			

L1610291-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1610291-06 05/02/23 11:07 • (DUP) R3920156-3 05/02/23 11:07

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	76.9	75.7	1	1.50		10

Laboratory Control Sample (LCS)

(LCS) R3920156-2 05/02/23 11:07

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3920469-1 05/03/23 11:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Hexavalent Chromium	U		0.255	1.00

L1610752-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1610752-01 05/03/23 12:59 • (DUP) R3920469-7 05/03/23 13:05

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	U	U	1	0.000		20

L1610752-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1610752-03 05/03/23 13:25 • (DUP) R3920469-8 05/03/23 13:31

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	U	U	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3920469-2 05/03/23 11:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	10.5	105	80.0-120	

L1607939-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1607939-01 05/03/23 11:26 • (MS) R3920469-3 05/03/23 11:31 • (MSD) R3920469-4 05/03/23 11:36

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	25.5	2.15	24.7	26.7	88.4	96.4	1	75.0-125			7.93	20

L1607939-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1607939-01 05/03/23 11:26 • (MS) R3920469-5 05/03/23 11:42

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	824	2.15	812	98.6	50	75.0-125	

L1610296-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1610296-03 05/03/23 14:45 • (DUP) R3920491-2 05/03/23 14:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.55	7.61	1	0.792		1

Sample Narrative:

OS: 7.55 at 20.1C

DUP: 7.61 at 19.8C

L1610384-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1610384-03 05/03/23 14:45 • (DUP) R3920491-3 05/03/23 14:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.92	7.93	1	0.126		1

Sample Narrative:

OS: 7.92 at 19.7C

DUP: 7.93 at 19.4C

Laboratory Control Sample (LCS)

(LCS) R3920491-1 05/03/23 14:45

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.99	99.9	99.0-101	

Sample Narrative:

LCS: 9.99 at 20.4C

Laboratory Control Sample (LCS)

(LCS) R3920112-1 05/02/23 23:05

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10 at 19.1C

Method Blank (MB)

(MB) R3920455-1 05/03/23 14:36

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1610421-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1610421-02 05/03/23 14:36 • (DUP) R3920455-3 05/03/23 14:36

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	117	117	1	0.171		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1610593-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1610593-03 05/03/23 14:36 • (DUP) R3920455-4 05/03/23 14:36

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	189	190	1	0.158		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3920455-2 05/03/23 14:36

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1120	1170	104	85.0-115	

Sample Narrative:
LCS: at 25C

QUALITY CONTROL SUMMARY

L1610296-01,02,03

Method Blank (MB)

(MB) R3920527-1 05/03/23 12:13

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hot Water Sol. Boron	U		16.7	200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3920527-2 05/03/23 12:16 • (LCSD) R3920527-3 05/03/23 12:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1000	1080	1070	108	107	80.0-120			0.787	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
T8	Sample(s) received past/too close to holding time expiration.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.