

July 16, 2020

Glenn Walker PO Box
Brunswick County Water Systems
PO Box 249
Bolivia, NC 28422

RE: Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35562150

Dear Glenn PO Box:

Enclosed are the analytical results for sample(s) received by the laboratory on July 10, 2020. 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 Analytical Services - Ormond Beach

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

Sincerely,



Lisa Harvey
lisa.harvey@pacelabs.com
(386) 672-5668
Project Manager

Enclosures

cc: Billy Benton, BRUNSWICK COUNTY PUBLIC UTILITIES



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35562150

Pace Analytical Services Ormond Beach

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST

Alabama Certification #: 41320

Arizona Certification# AZ0819

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079

Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity

Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383

Kentucky Certification #: 90050

Louisiana Certification #: FL NELAC Reciprocity

Louisiana Environmental Certificate #: 05007

Maryland Certification: #346

Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14

New Hampshire Certification #: 2958

New Jersey Certification #: FL022

New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710

North Dakota Certification #: R-216

Ohio DEP 87780

Oklahoma Certification #: D9947

Pennsylvania Certification #: 68-00547

Puerto Rico Certification #: FL01264

South Carolina Certification: #96042001

Tennessee Certification #: TN02974

Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity

Virginia Environmental Certification #: 460165

West Virginia Certification #: 9962C

Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity

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SAMPLE SUMMARY

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35562150

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35562150001	7920S01	Drinking Water	07/09/20 07:30	07/10/20 10:45
35562150002	7920E01	Drinking Water	07/09/20 07:30	07/10/20 10:45

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SAMPLE ANALYTE COUNT

Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35562150

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35562150001	7920S01	EPA 522	TM2	2	PASI-O
35562150002	7920E01	EPA 522	TM2	2	PASI-O

PASI-O = Pace Analytical Services - Ormond Beach

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ANALYTICAL RESULTS

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35562150

Sample: 7920S01 **Lab ID: 35562150001** Collected: 07/09/20 07:30 Received: 07/10/20 10:45 Matrix: Drinking Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane									
Analytical Method: EPA 522 Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach									
1,4-Dioxane (p-Dioxane)	0.61	ug/L	0.20	0.12	1	07/14/20 16:15	07/15/20 17:31	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	82	%	70-130		1	07/14/20 16:15	07/15/20 17:31		

Sample: 7920E01 **Lab ID: 35562150002** Collected: 07/09/20 07:30 Received: 07/10/20 10:45 Matrix: Drinking Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
522 MSS 1,4 Dioxane									
Analytical Method: EPA 522 Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach									
1,4-Dioxane (p-Dioxane)	0.55	ug/L	0.20	0.12	1	07/14/20 16:15	07/15/20 17:47	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	86	%	70-130		1	07/14/20 16:15	07/15/20 17:47		

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QUALITY CONTROL DATA

Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35562150

QC Batch: 648361	Analysis Method: EPA 522
QC Batch Method: EPA 522	Analysis Description: 522 MSS 1,4 Dioxane
	Laboratory: Pace Analytical Services - Ormond Beach

Associated Lab Samples: 35562150001, 35562150002

METHOD BLANK: 3524855 Matrix: Water

Associated Lab Samples: 35562150001, 35562150002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.12 U	0.20	0.12	07/15/20 11:11	
1,4-Dioxane-d8 (S)	%	95	70-130		07/15/20 11:11	

LABORATORY CONTROL SAMPLE: 3524856

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	19.2	96	70-130	
1,4-Dioxane-d8 (S)	%			100	70-130	

LABORATORY CONTROL SAMPLE: 3524857

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.24	0.20 I	83	50-150	
1,4-Dioxane-d8 (S)	%			97	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3524858 3524859

Parameter	Units	35560476001		3524858		3524859		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
1,4-Dioxane (p-Dioxane)	ug/L	0.30	20	20	16.5	16.9	81	83	70-130	3	20	
1,4-Dioxane-d8 (S)	%						84	86	70-130			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3524860 3524861

Parameter	Units	35560476002		3524860		3524861		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
1,4-Dioxane (p-Dioxane)	ug/L	0.26	20	20	17.4	18.5	86	91	70-130	6	20	
1,4-Dioxane-d8 (S)	%						90	97	70-130			

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.

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QUALIFIERS

Project: 1,4-Dx-522 (Weekly)

Pace Project No.: 35562150

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

- I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- U Compound was analyzed for but not detected.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35562150

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35562150001	7920S01	EPA 522	648361	EPA 522	648556
35562150002	7920E01	EPA 522	648361	EPA 522	648556

REPORT OF LABORATORY ANALYSIS

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WO#: 35562150



CHAIN-O
The Chain-of-C



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pleted accurately.

Section A

Required Client Information:
 Company: Brunswick County Water System
 Address: 3954 Clearwell Dr. NE
 Leland, NC 28451
 Email: glenn.walker@brunswickcountync.gov
 Phone: 910-371-3490
 Requested Due Date:

Section B

Required Project Information:
 Report To: Glenn - Bottles
 Copy To:
 Purchase Order #: 1-4-DX-522 (Weekly)
 Project Name: 1-4-DX-522 (Weekly)
 Project #:

Invoice Information:
 Attention:
 Company Name:
 Address:
 Pace Quote:
 Pace Project Manager: lisa.harvey@paceoelabs.com,
 Pace Profile #: 9551-1

Regulatory Agency
 State / Location: NC

Page: 1 Of 1

ITEM #	MATRIX	CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
			START	END									
1	Drinking Water	DW	7-9-20	0130	1	1-4-dioxane, method 522							
2	Drinking Water	DW	7-9-20	0130	1	1-4-dioxane, method 522							
3	Drinking Water	DW											
4	Drinking Water	DW											
5	Drinking Water	DW											
6	Drinking Water	DW											
7	Drinking Water	DW											
8	Drinking Water	DW											
9	Drinking Water	DW											
10	Drinking Water	DW											
11	Drinking Water	DW											
12	Drinking Water	DW											

ADDITIONAL COMMENTS
 Empty Bottles

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Phillip McCulloch
 SIGNATURE of SAMPLER: Phillip McCulloch

DATE Signed: 7-9-20

Received on: 7-9-20
 Temp in C: 1.5
 Y/N: Y



Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 13

Document Revised:
May 30, 2018
Issuing Authority:
Pace Florida Quality Office

WO#: 35562150
PM: LMH Due Date: 07/22/20
CLIENT: BRUNCOWS

(SCUR)

Project #
Project Manager:
Client:

Date and Initials of person:
Examining contents: [Signature]
Label: _____
Deliver: _____
pH: _____

Thermometer Used: T-336 Date: 7-10-20 Time: 1049 Initials: SRV

State of Origin: _____ For WV projects, all containers verified to ≤6 °C

Cooler #1 Temp. °C 6.9 (Visual) -0.1 (Correction Factor) 1.0 (Actual) Samples on ice, cooling process has begun
Cooler #2 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual) Samples on ice, cooling process has begun
Cooler #3 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual) Samples on ice, cooling process has begun
Cooler #4 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual) Samples on ice, cooling process has begun
Cooler #5 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual) Samples on ice, cooling process has begun
Cooler #6 Temp. °C _____ (Visual) _____ (Correction Factor) _____ (Actual) Samples on ice, cooling process has begun

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____
Shipping Method: First Overnight Priority Overnight Standard Overnight Ground International Priority
 Other _____

Billing: Recipient Sender Third Party Credit Card Unknown

Tracking # 3946 6945 6119

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No Ice: Wet (Blue) Dry None

Packing Material: Bubble Wrap Bubble Bags None Other _____

Samples shorted to lab (If Yes, complete) Shorted Date: _____ Shorted Time: _____ Qty: _____

Comments:

Chain of Custody Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody Filled Out	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Relinquished Signature & Sampler Name COC	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples Arrived within Hold Time	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush TAT requested on COC	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient Volume	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct Containers Used	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Sample Labels match COC (sample IDs & date/time of collection)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing acid/base preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Preservation Information: Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: VOA, Coliform, TOC, O&G, Carbamates	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA Vials? (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	

Client Notification/ Resolution:
Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments):

