

August 11, 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.: 35566938

Dear Glenn PO Box:

Enclosed are the analytical results for sample(s) received by the laboratory on July 31, 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.: 35566938

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### **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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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

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

Pace Project No.: 35566938

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
35566938001	073020-S01	Drinking Water	07/30/20 07:55	07/31/20 11:30
35566938002	073020-E01	Drinking Water	07/30/20 07:55	07/31/20 11:30

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### SAMPLE ANALYTE COUNT

Project: 1,4-Dx-522 (Weekly)  
Pace Project No.: 35566938

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35566938001	073020-S01	EPA 522	CTB	2	PASI-O
35566938002	073020-E01	EPA 522	CTB	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.: 35566938

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Sample: 073020-S01      Lab ID: 35566938001      Collected: 07/30/20 07:55      Received: 07/31/20 11:30      Matrix: Drinking Water</b>									
<b>522 MSS 1,4 Dioxane</b> Analytical Method: EPA 522      Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach									
1,4-Dioxane (p-Dioxane)	<b>0.39</b>	ug/L	0.18	0.11	1	08/07/20 17:05	08/10/20 16:34	123-91-1	
<b>Surrogates</b>									
1,4-Dioxane-d8 (S)	95	%	70-130		1	08/07/20 17:05	08/10/20 16:34		

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>Sample: 073020-E01      Lab ID: 35566938002      Collected: 07/30/20 07:55      Received: 07/31/20 11:30      Matrix: Drinking Water</b>									
<b>522 MSS 1,4 Dioxane</b> Analytical Method: EPA 522      Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach									
1,4-Dioxane (p-Dioxane)	<b>0.56</b>	ug/L	0.19	0.11	1	08/07/20 17:05	08/10/20 16:53	123-91-1	
<b>Surrogates</b>									
1,4-Dioxane-d8 (S)	98	%	70-130		1	08/07/20 17:05	08/10/20 16:53		

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

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

Pace Project No.: 35566938

QC Batch: 655132	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: 35566938001, 35566938002

METHOD BLANK: 3561521 Matrix: Water

Associated Lab Samples: 35566938001, 35566938002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.12 U	0.20	0.12	08/10/20 11:01	
1,4-Dioxane-d8 (S)	%	117	70-130		08/10/20 11:01	

LABORATORY CONTROL SAMPLE: 3561522

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	2	1.8	91	70-130	
1,4-Dioxane-d8 (S)	%			109	70-130	

LABORATORY CONTROL SAMPLE: 3561523

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.2	0.19 I	95	50-150	
1,4-Dioxane-d8 (S)	%			109	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3561524 3561525

Parameter	Units	3561524		3561525		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
1,4-Dioxane (p-Dioxane)	ug/L	32.8	2.1	2.1	38.2	37.6	255	224	70-130	2	20 J(M1)
1,4-Dioxane-d8 (S)	%						107	110	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.: 35566938

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### 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.

J(M1) Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

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

Pace Project No.: 35566938

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35566938001	073020-S01	EPA 522	655132	EPA 522	655489
35566938002	073020-E01	EPA 522	655132	EPA 522	655489

### REPORT OF LABORATORY ANALYSIS

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WO#: 35566938



35566938

**Request Document**

All relevant fields must be completed 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 Fax:  
 Requested Due Date:

**Section B**

**Required Project Information:**

Report To: Glenn - Bottles  
 Copy To:  
 Purchase Order #: 1,4-Dx-522 (Weekly)  
 Project Name:  
 Project #:

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

Regulatory Agency  
 State / Location

ITEM #	MATRIX CODE Drinking Water (DW) Water (WT) Waste Water (WW) Product (P) Soil/Solid (SL) Oil (OL) Wipe (WP) Air (AR) Other (OT) Tissue (TS)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (S=GHAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H2SO4 HNO3 HCl NaOH Na2S2O3 Methanol Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	TEMP in C	Received on	Ice (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples In tact (Y/N)
				START DATE	START TIME												
1		W	G	7-30-20	DTSS	7-30-20	DTSS	1									
2		W	G	7-30-20	DTSS	7-30-20	DTSS	1									
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

Empty Bottles

PP. Bottle Rep  
 7/30/20 1627  
 7-30-20

AS / pace

7/31/20 1130  
 7-30-20

4 4 4

SAMPLER NAME AND SIGNATURE  
 PRINT Name of SAMPLER: Billy Benton  
 SIGNATURE of SAMPLER: [Signature]

DATE Signed: 7-30-20



**WO# : 35566938**  
**PM: LMH**      **Due Date: 08/12/20**  
**CLIENT: BRUNCOWS**

**Project**  
**Project Manager**  
**Client**

m (SCUR)

**Date and Initials of person:**

Examining contents: AS

Label: \_\_\_\_\_

Deliver: \_\_\_\_\_

pH: \_\_\_\_\_

Thermometer Used: T-338      Date: 7/21/20      Time: 11:31      Initials: CEJ

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

- |  |  |
|--|--|
| Cooler #1 Temp.°C <u>32</u> (Visual) <u>+0.3</u> (Correction Factor) <u>3.5</u> (Actual) | <input type="checkbox"/> Samples on ice, cooling process has begun |
| Cooler #2 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)                | <input type="checkbox"/> Samples on ice, cooling process has begun |
| Cooler #3 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)                | <input type="checkbox"/> Samples on ice, cooling process has begun |
| Cooler #4 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)                | <input type="checkbox"/> Samples on ice, cooling process has begun |
| Cooler #5 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)                | <input type="checkbox"/> Samples on ice, cooling process has begun |
| Cooler #6 Temp.°C _____ (Visual) _____ (Correction Factor) _____ (Actual)                | <input type="checkbox"/> 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 # 3953 2686 0688

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	<p>Preservation Information:</p> <p>Preservative: _____</p> <p>Lot #/Trace #: _____</p> <p>Date: _____ Time: _____</p> <p>Initials: _____</p>
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 type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct Containers Used	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Sample Labels match COC (sample IDs & date/time of collection)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing acid/base preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
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 checked="" type="checkbox"/> N/A	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

**Client Notification/ Resolution:**

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

**Comments/ Resolution (use back for additional comments):**

\_\_\_\_\_

\_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_