

February 19, 2021

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

RE: Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35611561

Dear Glenn PO Box:

Enclosed are the analytical results for sample(s) received by the laboratory on February 12, 2021. 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.: 35611561

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.: 35611561

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35611561001	021121-SO1	Water	02/11/21 08:45	02/12/21 13:15
35611561002	021121-EO1	Drinking Water	02/11/21 08:45	02/12/21 13:15

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SAMPLE ANALYTE COUNT

Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35611561

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35611561001	021121-SO1	EPA 522	CTB	2	PASI-O
35611561002	021121-EO1	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.: 35611561

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: 021121-SO1 Lab ID: 35611561001 Collected: 02/11/21 08:45 Received: 02/12/21 13:15 Matrix: Water									
522 MSS 1,4 Dioxane Analytical Method: EPA 522 Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach									
1,4-Dioxane (p-Dioxane)	0.52	ug/L	0.31	0.19	1	02/17/21 09:15	02/18/21 12:46	123-91-1	P1
Surrogates									
1,4-Dioxane-d8 (S)	75	%	70-130		1	02/17/21 09:15	02/18/21 12:46		

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Sample: 021121-EO1 Lab ID: 35611561002 Collected: 02/11/21 08:45 Received: 02/12/21 13:15 Matrix: Drinking Water									
522 MSS 1,4 Dioxane Analytical Method: EPA 522 Preparation Method: EPA 522 Pace Analytical Services - Ormond Beach									
1,4-Dioxane (p-Dioxane)	0.68	ug/L	0.20	0.12	1	02/17/21 09:15	02/18/21 13:35	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	80	%	70-130		1	02/17/21 09:15	02/18/21 13:35		

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QUALITY CONTROL DATA

Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35611561

QC Batch: 705765	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: 35611561001, 35611561002

METHOD BLANK: 3845246 Matrix: Water

Associated Lab Samples: 35611561001, 35611561002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.12 U	0.20	0.12	02/18/21 11:58	
1,4-Dioxane-d8 (S)	%	80	70-130		02/18/21 11:58	

LABORATORY CONTROL SAMPLE: 3845247

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	20	16.2	81	70-130	
1,4-Dioxane-d8 (S)	%			84	70-130	

LABORATORY CONTROL SAMPLE: 3845248

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)	%			80	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3845249 3845250

Parameter	Units	3845249		3845250		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	0.52	31	30.5	23.4	24.9	74	80	70-130	7	20
1,4-Dioxane-d8 (S)	%						75	82	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.: 35611561

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.

P1 Routine initial sample volume or weight was not used for extraction, resulting in elevated reporting limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35611561

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35611561001	021121-SO1	EPA 522	705765	EPA 522	706221
35611561002	021121-EO1	EPA 522	705765	EPA 522	706221

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WO#: 35611561



IN-OF-CUSTODY / Analytical Request Document
 Main-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
 Required Client Information:
 Company: Brunswick County Water Systems
 Address: PO Box 249
 Bolivia, NC 28422
 Email To: Glenn Walker
 Phone: 910-371-3490 Fax:
 Requested Due Date: W007

Section B
 Required Project Information:
 Report To: Glenn Walker
 Copy To:
 Purchase Order #: 1,4-Dx-522 (Weekly)
 Project Name:
 Project #:

Section C
 Invoice Information:
 Attention: Accounts Payable
 Company Name: See Section A
 Address:
 Pace Quote:
 Pace Project Manager: Lisa Harvey
 Pace Profile #: 9551-1 (SO1), -2 (EO1)

Section D
 Regulatory Agency: NC
 State / Location:
 NC

ITEM #	MATRIX CODE (see valid codes to left)	COLLECTED		DATE	TIME	DATE	TIME	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		START	END											
1	WT G	2/11/2021	8:45AM	2/11/2021	8:45AM	10/29/2020	8:45AM	Glenn Walker	10/29/2020	8:45AM	522-14-Dioxane	2-11-21	1315	line 1
2	DW G	2/11/2021	8:45AM	2/11/2021	8:45AM						522-14-Dioxane			line 2
3														
4														
5														
6														

ADDITIONAL COMMENTS

RESIDUAL CHLORINE (Y/N)

Requested Analysis Filtered (Y/N)

Preservatives: H2SO4, HNO3, HCl, NaOH, Na2SO3, Methanol, Sodium sulfite and sodium bisulfate

OF CONTAINERS: 1

SAMPLE TEMP AT COLLECTION

RELINQUISHED BY / AFFILIATION: Glenn Walker

DATE: 10/29/2020

TIME: 8:45AM

ACCEPTED BY / AFFILIATION: 522-14-Dioxane

DATE: 2-11-21

TIME: 1315

SAMPLE CONDITIONS: line 1, line 2

TEMP in C

Received on: (Y/N)

Custody: (Y/N)

Sealed Cooler: (Y/N)

Samples Intact: (Y/N)

SAMPLER NAME AND SIGNATURE: Billy Benton

PRINT Name of SAMPLER: BILLY BENTON

SIGNATURE of SAMPLER: 2/11/2021

SO1 is Raw Water (WT)
 EO1 is Potable DWTR (DW)



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

Sample Condition Upon Receipt Form (SCUR)

Project #
Project Manager:
Client:

WO#: 35611561
PM: LMH **Due Date: 02/24/21**
CLIENT: BRUNCOWS

Date and Initials of person:
Examining contents: SRV
Label: _____
Deliver: ✓
4: _____

Thermometer Used: T-353 Date: 2/12/21 Time: 1320 Initials: AS

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

Cooler #1 Temp.°C 1.6 (Visual) 70.3 (Correction Factor) 1.19 (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 # 7832 50242010

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	Preservation Information: Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____
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	
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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A	

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

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

Project Manager Review: _____ Date: _____