

November 17, 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.: 35591979

Dear Glenn PO Box:

Enclosed are the analytical results for sample(s) received by the laboratory on November 13, 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,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

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

Pace Project No.: 35591979

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.: 35591979

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35591979001	11-12-20-SO1	Water	11/12/20 07:30	11/13/20 11:20
35591979002	11-12-20-EO1	Drinking Water	11/12/20 07:30	11/13/20 11:20

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SAMPLE ANALYTE COUNT

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

Pace Project No.: 35591979

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35591979001	11-12-20-SO1	EPA 522	CTB	2	PASI-O
35591979002	11-12-20-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.: 35591979

Sample: 11-12-20-SO1		Lab ID: 35591979001		Collected: 11/12/20 07:30		Received: 11/13/20 11:20		Matrix: 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)	7.8	ug/L	0.20	0.12	1	11/15/20 16:36	11/17/20 11:45	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	86	%	70-130		1	11/15/20 16:36	11/17/20 11:45		

Sample: 11-12-20-EO1		Lab ID: 35591979002		Collected: 11/12/20 07:30		Received: 11/13/20 11:20		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)	10.4	ug/L	0.20	0.12	1	11/15/20 16:36	11/17/20 12:01	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	89	%	70-130		1	11/15/20 16:36	11/17/20 12:01		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

Pace Project No.: 35591979

QC Batch:	681910	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: 35591979001, 35591979002

METHOD BLANK: 3712031 Matrix: Water

Associated Lab Samples: 35591979001, 35591979002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.12 U	0.20	0.12	11/17/20 10:41	
1,4-Dioxane-d8 (S)	%	90	70-130		11/17/20 10:41	

LABORATORY CONTROL SAMPLE & LCSD: 3712032

		3712033								
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	2	1.7	1.6	84	81	70-130	4	20	
1,4-Dioxane-d8 (S)	%				92	88	70-130			

LABORATORY CONTROL SAMPLE: 3712034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.2	0.18 I	89	50-150	
1,4-Dioxane-d8 (S)	%			94	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.: 35591979

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.

BATCH QUALIFIERS

Batch: 682328

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

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.: 35591979

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35591979001	11-12-20-SO1	EPA 522	681910	EPA 522	682328
35591979002	11-12-20-EO1	EPA 522	681910	EPA 522	682328

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WO#: 35591979



35591979

IN-OF-CUSTODY / Analytical Request Document

ain-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

Required Project Information:

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

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)

Regulatory Agency

NC

State / Location

NC

Requested Analysis Filtered (Y/N)

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	Received on	Ice (Y/N)	Custody (Y/N)	Sealed Cooler (Y/N)	Samples In/Intact (Y/N)
			START	END													
1	11-12-20-SO1	WT G	11/12/2020	730	11/12/2020	730	1	1	522 - 1,4 - Dioxane	11/13/2020	07:15	Y Y Y					
2	11-12-20-EO1	DW G	11/12/2020	730	11/12/2020	730	1	1	522 - 1,4 - Dioxane								
3																	
4																	
5																	
6																	

SAMPLE ID
 One Character per box.
 (A-Z, 0-9 / . -)
 Sample IDs must be unique

MATRIX CODE
 DW Drinking Water
 WT Water
 WW Waste Water
 P Product
 SL Soil/Solid
 OL Oil
 WP Wipe
 AR Air
 OT Other
 TS Tissue

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION

DATE

TIME

ACCEPTED BY / AFFILIATION

DATE

TIME

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

Phil McCulloch

DATE Signed: 11-12-20

SO1 is Raw Water (WT)

EO1 is Potable DWTR (DW)

	Document Name: Sample Condition Upon Receipt Form	Document Revised: May 30, 2018
	Document No.: F-FL-C-007 rev. 13	Issuing Authority: Pace Florida Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #
Project Manager:
Client:

WO#: 35591979

PM: LMH Due Date: 11/25/20
CLIENT: BRUNCOWS

Date and Initials of person:

Examining contents:
Label: gpp
Deliver: gpp
pH: gpp

Thermometer Used: T-344

Date: 11/13/20

Time: 1124

Initials: gpp

State of Origin: _____

☐ For WV projects, all containers verified to $\leq 6^{\circ}\text{C}$

Cooler #1 Temp. $^{\circ}\text{C}$ 0.3 (Visual) -0.1 (Correction Factor) 0.7 (Actual)
Cooler #2 Temp. $^{\circ}\text{C}$ _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #3 Temp. $^{\circ}\text{C}$ _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #4 Temp. $^{\circ}\text{C}$ _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #5 Temp. $^{\circ}\text{C}$ _____ (Visual) _____ (Correction Factor) _____ (Actual)
Cooler #6 Temp. $^{\circ}\text{C}$ _____ (Visual) _____ (Correction Factor) _____ (Actual)

☐ Samples on ice, cooling process has begun
☐ Samples on ice, cooling process has begun
☐ Samples on ice, cooling process has begun
☐ Samples on ice, cooling process has begun
☐ Samples on ice, cooling process has begun
☐ Samples on ice, cooling process has begun

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace

Shipping Method: ☐ First Overnight ☐ Priority Overnight ☒ Standard Overnight ☐ Ground ☐ International Priority
☐ Other _____

Billing: ☐ Recipient ☐ Sender ☐ Third Party ☐ Credit Card ☐ Unknown

Tracking # 3988 6132 6992

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

Preservation Information:
Preservative: TWA
Lot #/Trace #: _____
Date: 11/13/20 Time: _____
Initials: gpp
pH=4.0 for both samples

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution (use back for additional comments):

Project Manager Review: _____