



May 17, 2024

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

RE: Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35879280

Dear Glenn Walker:

Enclosed are the analytical results for sample(s) received by the laboratory on May 14, 2024. 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,

Todd Baumgartner
todd.baumgartner@pacelabs.com
(386)672-5668
Project Manager

Enclosures

cc: Billy Benton, Brunswick County Public Utilities



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

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

Pace Project No.: 35879280

Pace Analytical Services Ormond Beach

8 East Tower Circle, Ormond Beach, FL 32174

Alaska DEC- CS/UST/LUST

Alabama Certification #: 41320

California Certification# 3096

Colorado Certification: FL NELAC Reciprocity

Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

DoD-ANAB #:ADE-3199

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

Maine Certification #: FL01264

Maryland Certification: #346

Massachusetts Certification #: M-FL1264

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.: 35879280

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35879280001	0514324-S01	Water	05/13/24 08:15	05/14/24 13:15
35879280002	0514324-E01	Drinking Water	05/13/24 08:15	05/14/24 13:15

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SAMPLE ANALYTE COUNT

Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35879280

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35879280001	0514324-S01	EPA 522	BMH	2	PASI-O
35879280002	0514324-E01	EPA 522	BMH	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.: 35879280

Sample: 0514324-S01									
Lab ID: 35879280001									
Collected: 05/13/24 08:15 Received: 05/14/24 13:15 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)	0.63	ug/L	0.20	0.12	1	05/14/24 22:57	05/16/24 15:20	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	88	%	70-130		1	05/14/24 22:57	05/16/24 15:20		

Sample: 0514324-E01									
Lab ID: 35879280002									
Collected: 05/13/24 08:15 Received: 05/14/24 13:15 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)	0.59	ug/L	0.19	0.12	1	05/14/24 22:57	05/16/24 15:37	123-91-1	
Surrogates									
1,4-Dioxane-d8 (S)	94	%	70-130		1	05/14/24 22:57	05/16/24 15:37		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

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

Pace Project No.: 35879280

QC Batch:	1011300	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: 35879280001, 35879280002

METHOD BLANK: 5558332 Matrix: Water

Associated Lab Samples: 35879280001, 35879280002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.12 U	0.20	0.12	05/14/24 13:16	
1,4-Dioxane-d8 (S)	%	102	70-130		05/14/24 13:16	

LABORATORY CONTROL SAMPLE: 5558333

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	2	1.8	92	70-130	
1,4-Dioxane-d8 (S)	%			101	70-130	

LABORATORY CONTROL SAMPLE: 5558334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.2	0.20 I	98	50-150	
1,4-Dioxane-d8 (S)	%			93	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5558339 5558340

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60452718005 Result	Spike Conc.	Spike Conc.	Result							
1,4-Dioxane (p-Dioxane)	ug/L	175	2	2	174	175	-57	-28	70-130	0	20	J(M1)
1,4-Dioxane-d8 (S)	%						99	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.: 35879280

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.

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.

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.: 35879280

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35879280001	0514324-S01	EPA 522	1011300	EPA 522	1011477
35879280002	0514324-E01	EPA 522	1011300	EPA 522	1011477

REPORT OF LABORATORY ANALYSIS

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WO#: 35879280



35879280

Document

is 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

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

Page: 1 Of 1

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	051324-SO1	WT G	0815AM	0815AM	5/13/2024	0815AM	0815AM	1	522 - 1,4 - Dioxane	5/14/2024	ASpace	5/14/2024	1	line 1
2	051324-EO1	DW G	0815AM	0815AM	5/13/2024	0815AM	0815AM	1	522 - 1,4 - Dioxane					line 2
3														
4														
5														
6														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	BILLY BENTON/BRUNSWICK COUNTY UTILITIES	5/13/2024		ASpace	5/14/2024		Y N Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: BILLY BENTON
 SIGNATURE of SAMPLER: 

5/13/2024

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

Pace

Sample Condition Upon Receipt Form (SCUR)

WO#: 35879280

PM: TAB Due Date: 05/24/24
CLIENT: BRUNCOWS

Date and Initials of person: AS

Examining contents: _____

Label: _____

Deliver: _____

pH: _____

Initials: RP

Project #

Project Manager:

Client:

Thermometer Used: T-414

Date: 5/14/24

Time: 1333

State of Origin: _____ For WV projects, all containers verified to $\leq 6^\circ\text{C}$

Cooler #1 Temp. $^\circ\text{C}$ 0.2 (Visual) 0.1 (Correction Factor) 0.1 (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)

Recheck for OOT $^\circ\text{C}$ _____ (Visual) _____ (Correction Factor) _____ (Actual)

Samples on ice, cooling process has begun.

Time: _____ Initials: _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other: _____

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

Billing: Recipient Sender Third Party Credit Card Unknown

Tracking # 2746 0525 3840

Custody Seal Present: Yes No Seal properly placed and intact: Yes No

Ice: Wet Blue Dry None Melted

Packing Material: Bubble Wrap Bubble Bags None Other: _____

Samples shorted to lab: Yes No (If yes, complete the following)

Shorted Date: _____

Shorted Time: _____

Bottle Quantity / Type: _____

Chain of Custody:	Present: <input type="checkbox"/> Yes <input type="checkbox"/> No Filled Out: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Sampler Name: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Relinquished To Pace: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Sampling Date(s): <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A Sampling Time(s): <input 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	Comments:
Rush Turnaround Requested on COC.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Comments:
Sufficient Volume.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Comments:
Correct Containers Used.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Comments:
Containers Intact.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Comments:
Sample Labels Match COC (Sample ID, Date/Time of Collection).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Comments:
All containers needing acid / base preservation have been checked.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Preservation Information Preservative: _____ Date: _____ Lot / Trace: _____ Time: _____ Amount added (mL): _____ Initials: _____
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Exceptions: Vials Microbiology O&G PFAS		
Headspace in Volatile 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	

Comments / Resolutions (use back for additional comments):

Pace Container Order #1143310

Addresses	Ship To :	Return To:
Order By : Company Brunswick County Water System Contact - Bottles, Glenn Email glenn.walker@brunswickcountync.gov Address 3954 Clearwell Dr. NE Address 2 _____ City Leland State NC Zip 28451 Phone 910-371-3490	Company Brunswick County Water System Contact - Bottles, Glenn Email glenn.walker@brunswickcountync.gov Address 3954 Clearwell Dr. NE Address 2 _____ City Leland State NC Zip 28451 Phone 910-371-3490	Company Pace Analytical Ormond Beach Contact _____ Email shelby.sharpe@pacelabs.com Address 8 East Tower Circle Address 2 _____ City Ormond Beach State FL Zip 32174 Phone (386)672-5668

Info			
Project Name 1,4-Dx-522 (Weekly)	Due Date 04/29/2024	Profile 9551-1	Quote _____
Project Manager _____	Return Date _____	Carrier FedEx Ground	Location NC

Trip Blanks <input type="checkbox"/> Include Trip Blanks	Bottle Labels <input type="checkbox"/> Blank <input checked="" type="checkbox"/> Pre-Printed No Sample IDs <input type="checkbox"/> Pre-Printed With Sample IDs	Bottles <input type="checkbox"/> Boxed Cases <input checked="" type="checkbox"/> Individually Wrapped <input type="checkbox"/> Grouped By Sample ID/Matrix
Return Shipping Labels <input type="checkbox"/> No Shipper <input type="checkbox"/> With Shipper	Misc <input type="checkbox"/> Sampling Instructions <input checked="" type="checkbox"/> Custody Seal <input checked="" type="checkbox"/> Temp. Blanks <input checked="" type="checkbox"/> Coolers 1 <input type="checkbox"/> Syringes _____	
COC Options <input type="checkbox"/> Number of Blanks _____ <input checked="" type="checkbox"/> Pre-Printed special	<input type="checkbox"/> Extra Bubble Wrap <input type="checkbox"/> Short Hold/Rush Stickers <input type="checkbox"/> DI Water Liter(s) _____ <input type="checkbox"/> USDA Regulated Soils	

# of Samples	Matrix	Test	Container	Total	# of QC	Lot #	Notes
2	WT	1,4-dioxane, method 522	1-1L Amber Glass, Sodium sulfite & Na bisulfate	2	0	021224-1CEO	

No custody seal for cooler, 5/13/24 Billy Benton

Hazard Shipping Placard In Place : NO

*Sample receiving hours are Mon-Fri 8:00am-6:00pm and Sat 10:00am-6:00pm unless special arrangements are made with your project manager.

*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.

*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage/disposal.

*Payment term are net 30 days.

*Please include the proposal number on the chain of custody to ensure proper billing.

Sample Notes :

weekly sampling; 2-locations per week; ; Special COC attached; ;

LAB USE:

Ship Date : 04/27/2024

Prepared By: CK

Verified By: _____

Tracking Num: _____

CLIENT USE (Optional):

Date Rec'd: _____

Received By: _____

Verified By: _____