



February 02, 2024

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

RE: Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35856806

Dear Glenn Walker:

Enclosed are the analytical results for sample(s) received by the laboratory on January 30, 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.: 35856806

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.: 35856806

| Lab ID | Sample ID | Matrix | Date Collected | Date Received |
|-------------|------------|----------------|----------------|----------------|
| 35856806001 | 012924-S01 | Water | 01/29/24 13:20 | 01/30/24 10:45 |
| 35856806002 | 012924-E01 | Drinking Water | 01/29/24 13:20 | 01/30/24 10:45 |

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SAMPLE ANALYTE COUNT

Project: 1,4-Dx-522 (Weekly)
Pace Project No.: 35856806

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|-------------|------------|---------|----------|-------------------|------------|
| 35856806001 | 012924-S01 | EPA 522 | BMH | 2 | PASI-O |
| 35856806002 | 012924-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.: 35856806

| Sample: 012924-S01 | | Lab ID: 35856806001 | | Collected: 01/29/24 13:20 | Received: 01/30/24 10:45 | 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) | 0.37 | ug/L | 0.19 | 0.12 | 1 | 02/01/24 06:56 | 02/02/24 12:16 | 123-91-1 | |
| Surrogates | | | | | | | | | |
| 1,4-Dioxane-d8 (S) | 88 | % | 70-130 | | 1 | 02/01/24 06:56 | 02/02/24 12:16 | | |

| Sample: 012924-E01 | | Lab ID: 35856806002 | | Collected: 01/29/24 13:20 | Received: 01/30/24 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) | 0.39 | ug/L | 0.19 | 0.12 | 1 | 02/01/24 06:56 | 02/01/24 16:28 | 123-91-1 | |
| Surrogates | | | | | | | | | |
| 1,4-Dioxane-d8 (S) | 90 | % | 70-130 | | 1 | 02/01/24 06:56 | 02/01/24 16:28 | | |

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QUALITY CONTROL DATA

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

Pace Project No.: 35856806

| | | | |
|------------------|---------|-----------------------|---|
| QC Batch: | 985578 | 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: 35856806001, 35856806002

METHOD BLANK: 5420351 Matrix: Water

Associated Lab Samples: 35856806001, 35856806002

| Parameter | Units | Blank Result | Reporting Limit | MDL | Analyzed | Qualifiers |
|-------------------------|-------|--------------|-----------------|------|----------------|------------|
| 1,4-Dioxane (p-Dioxane) | ug/L | 0.12 U | 0.20 | 0.12 | 02/01/24 14:12 | |
| 1,4-Dioxane-d8 (S) | % | 92 | 70-130 | | 02/01/24 14:12 | |

LABORATORY CONTROL SAMPLE: 5420352

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-------------------------|-------|-------------|------------|-----------|--------------|------------|
| 1,4-Dioxane (p-Dioxane) | ug/L | 20 | 18.4 | 92 | 70-130 | |
| 1,4-Dioxane-d8 (S) | % | | | 95 | 70-130 | |

LABORATORY CONTROL SAMPLE: 5420353

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|-------------------------|-------|-------------|------------|-----------|--------------|------------|
| 1,4-Dioxane (p-Dioxane) | ug/L | 0.2 | 0.21 | 107 | 50-150 | |
| 1,4-Dioxane-d8 (S) | % | | | 97 | 70-130 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5420354 5420355

| Parameter | Units | MS | | MSD | | MS % Rec | MSD % Rec | % Rec Limits | RPD | Max RPD | Qual |
|-------------------------|-------|--------------------|-------------|-------------|-----------|----------|-----------|--------------|--------|---------|------|
| | | 92710311002 Result | Spike Conc. | Spike Conc. | MS Result | | | | | | |
| 1,4-Dioxane (p-Dioxane) | ug/L | ND | 19.8 | 19.6 | 17.2 | 18.0 | 86 | 91 | 70-130 | 5 | 20 |
| 1,4-Dioxane-d8 (S) | % | | | | | | 88 | 95 | 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.: 35856806

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

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.: 35856806

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|-------------|------------|-----------------|----------|-------------------|------------------|
| 35856806001 | 012924-S01 | EPA 522 | 985578 | EPA 522 | 985764 |
| 35856806002 | 012924-E01 | EPA 522 | 985578 | EPA 522 | 985764 |

REPORT OF LABORATORY ANALYSIS

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Pace Container Order #1143306

| | | | |
|---|--|--|--|
| 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 | | Ship To : 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 | |
| Return To: Company Pace Analytical Ormond Beach Contact, Shelby, Sharpe@paceabs.com Address 8 East Tower Circle Address 2 City Ormond Beach State FL Zip 32174 Phone (386)672-5668 | | | |

Info

Project Name 14-DX-522 (Weekly) Due Date 12/28/2023 Profile 9551-1 Quote

Project Manager Return Date Carrier FedEx Ground Location NC

Trip Blanks Include Trip Blanks

Bottle Labels Blank Pre-Printed No Sample IDs Pre-Printed With Sample IDs

Bottles Boxed Cases Individually Wrapped Grouped By Sample ID/Matrix

Return Shipping Labels No Shipper With Shipper

COC Options Number of Blanks Pre-Printed special

Misc Sampling Instructions Custody Seal Temp. Blanks Coolers Syringes

Extra Bubble Wrap Short Hold/Rush Stickers DI Water (Liters) USDA Regulated Soils

| # of Samples | Matrix | Test | Container | Total | # of QC | Lot # | Notes |
|--------------|--------|-------------------------|--|-------|---------|-------------|-------|
| 2 | WT | 1,4-dioxane, method 522 | 1-L Amber Glass, Sodium sulfate & Na bisulfate | 2 | 0 | 081423-1CEO | |

Hazard Shipping Placard In Place : NO

LAB USE:

Ship Date : 12/27/2023

Prepared By: SB

Verified By:

Tracking Num:

Date Rec'd:

Received By:

Verified By:

*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.

*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; :

Sample Condition Upon Receipt Form (SCUR)

MO#: 35856806
 PM: TAB Due Date: 02/09/24
 CLIENT: BRUNCOMS

Project # _____
 Project Manager: _____
 Client: _____

Thermometer Used: T-408

State of Origin: FL
 For WV projects, all containers verified to 56 °C

Cooler #1 Temp. °C: 4 (Visual) (Actual)
 Cooler #2 Temp. °C: (Visual) (Actual)
 Cooler #3 Temp. °C: (Visual) (Actual)
 Cooler #4 Temp. °C: (Visual) (Actual)
 Cooler #5 Temp. °C: (Visual) (Actual)
 Cooler #6 Temp. °C: (Visual) (Actual)
 Recheck for OOT °C: (Visual) (Actual)
 Courier: Fed Ex UPS USPS Client Commercial Parcel Other

Shipping Method: Standard Overnight First Overnight Priority Overnight Ground International Priority Other
 Billing: Recipient Sender Third Party Credit Card Unknown
 Tracking # 270346173566
 Custody Seal Present: Yes No Seal properly placed and intact: Yes No
 Packing Material: Bubble Wrap Bubble Bags None Other
 Samples shorted to lab: Yes No (If yes, complete the following)
 Shorted Date: _____
 Bottle Quantity / Type: _____
 Shorted Time: _____

Chain of Custody: Present Yes No | Filled Out: Yes No | Sampler Name: _____
 Samples Arrived within Hold Time: Yes No | Sampling Date(s): _____ | Sampling Time(s): _____
 Rush Turnaround 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 ID, Date/Time of Collection): Yes No | N/A
 All containers needing acid / base preservation have been checked: Yes No | N/A
 EPA recommendations: Yes No | N/A
 EPA recommendations are found to be in compliance with: Yes No | N/A
 Exceptions: Vials, Microbiology, O&G, PFAS
 Headspace in Volatile Vials? (>6mm): Yes No | N/A
 Trip Blank Present: Yes No | N/A
 Comments / Resolutions (use back for additional comments): _____

Preservative: _____
 Lot / Trace: _____
 Amount added (mL): _____
 Date: _____
 Time: _____
 Initials: _____

Date and Initials of person: _____
 Examining contents: _____
 Label: AVB
 Deliver: _____
 pH: _____
 Initials: 2025

Face