

July 12, 2017

Glenn Walker
Brunswick County Water Systems
3954 Clearwell Dr. NE
Leland, NC 28451

RE: Project: 1,4-Dx-522
Pace Project No.: 35322403

Dear Glenn Walker:

Enclosed are the analytical results for sample(s) received by the laboratory on July 07, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: 1,4-Dx-522

Pace Project No.: 35322403

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174

Alabama Certification #: 41320

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

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

Nevada Certification: FL NELAC Reciprocity

New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710

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

Wyoming Certification: FL NELAC Reciprocity

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
Pace Project No.: 35322403

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35322403001	70517-S01	Drinking Water	07/05/17 10:05	07/07/17 11:30
35322403002	70517-E01	Drinking Water	07/05/17 19:55	07/07/17 11:30
35322403003	70517-E02	Drinking Water	07/05/17 16:15	07/07/17 11:30

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SAMPLE ANALYTE COUNT

Project: 1,4-Dx-522

Pace Project No.: 35322403

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35322403001	70517-S01	EPA 522	EAO	2	PASI-O
35322403002	70517-E01	EPA 522	EAO	2	PASI-O
35322403003	70517-E02	EPA 522	EAO	2	PASI-O

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ANALYTICAL RESULTS

Project: 1,4-Dx-522

Pace Project No.: 35322403

Sample: 70517-S01 **Lab ID: 35322403001** Collected: 07/05/17 10:05 Received: 07/07/17 11:30 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									
1,4-Dioxane (p-Dioxane)	1.3	ug/L	0.070	0.028	1	07/11/17 09:20	07/12/17 04:41	123-91-1	1p
Surrogates									
1,4-Dioxane-d8 (S)	90	%	70-130		1	07/11/17 09:20	07/12/17 04:41		

Sample: 70517-E01 **Lab ID: 35322403002** Collected: 07/05/17 19:55 Received: 07/07/17 11:30 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									
1,4-Dioxane (p-Dioxane)	0.028 U	ug/L	0.070	0.028	1	07/11/17 09:20	07/12/17 05:00	123-91-1	1p
Surrogates									
1,4-Dioxane-d8 (S)	90	%	70-130		1	07/11/17 09:20	07/12/17 05:00		

Sample: 70517-E02 **Lab ID: 35322403003** Collected: 07/05/17 16:15 Received: 07/07/17 11:30 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									
1,4-Dioxane (p-Dioxane)	1.3	ug/L	0.070	0.028	1	07/11/17 09:20	07/12/17 05:18	123-91-1	1p
Surrogates									
1,4-Dioxane-d8 (S)	89	%	70-130		1	07/11/17 09:20	07/12/17 05:18		

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QUALITY CONTROL DATA

Project: 1,4-Dx-522
Pace Project No.: 35322403

QC Batch: 379999 Analysis Method: EPA 522
QC Batch Method: EPA 522 Analysis Description: 522 MSS 1,4 Dioxane
Associated Lab Samples: 35322403001, 35322403002, 35322403003

METHOD BLANK: 2059814 Matrix: Water
Associated Lab Samples: 35322403001, 35322403002, 35322403003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	0.028 U	0.070	0.028	07/12/17 03:07	
1,4-Dioxane-d8 (S)	%	90	70-130		07/12/17 03:07	

LABORATORY CONTROL SAMPLE: 2059815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	.04	0.042 I	105	50-150	
1,4-Dioxane-d8 (S)	%			92	70-130	

LABORATORY CONTROL SAMPLE & LCSD: 2060579

Parameter	Units	Spike Conc.	2060580		LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
			LCS Result	LCSD Result						
1,4-Dioxane (p-Dioxane)	ug/L	2	1.9	1.9	94	94	50-150	1	20	
1,4-Dioxane-d8 (S)	%				92	90	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
Pace Project No.: 35322403

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.

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.

LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach

BATCH QUALIFIERS

Batch: 379999

[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.

1p A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 1,4-Dx-522

Pace Project No.: 35322403

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35322403001	70517-S01	EPA 522	379999	EPA 522	380317
35322403002	70517-E01	EPA 522	379999	EPA 522	380317
35322403003	70517-E02	EPA 522	379999	EPA 522	380317

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WO#: 35322403



35322403

F-CUSTODY / Analytical Request Document

ustody is a LEGAL 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
Invoice Information:
 Report To: Glenn Walker
 Copy To: _____
 Company Name: _____
 Address: _____
 Regulatory Agency: _____
 Project Name: 1,4-Dx-522
 Pace Project Manager: lisa.harvey@pacelabs.com
 State / Location: NC
 Pace Quote: _____
 Pace Profile #: 9551-1

ITEM #	MATRIX CODE Drinking Water Water Waste Water Product Soli/Solid Oil Wipe Air Other Tissue	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	PRESERVATIVES	ANALYSES TEST	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	TEMP in C	Received on	Ice (Y/N)	Custody (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)	
				START DATE	END DATE													START TIME
1		WTG	G	7/5/17	10:05am	1	Unpreserved	522 1,4-dioxane		Y								
2		DWG	G	7/5/17	1955	1	H2SO4	522 1,4-dioxane		Y								
3		DWG	G	7-5-17	1615	1	HCl	522 1,4-dioxane		Y								
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

ADDITIONAL COMMENTS:
 SAMPLING KIT-EMPTY
 2 samples + cooler

RELINQUISHED BY / AFFILIATION: Glenn Walker 7/5/17

ACCEPTED BY / AFFILIATION: Mud Mamma 7/17 11:30 AM

DATE: 7/5/17

TIME: 11:30 AM

SAMPLER NAME AND SIGNATURE: Glenn Walker

PRINT Name of SAMPLER: Glenn Walker

SIGNATURE of SAMPLER: [Signature]

DATE Signed: 7/5/17



Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 11

Document Revised:
February 6, 2017
Issuing Authority:
Pace Florida Quality Office

WO# : 35322403

(SCUR)

Project #
Project Manager:
Client:

PM: LMH Due Date: 07/21/17
CLIENT: BRUNCOWS

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

Thermometer Used: T299 Date: 7/7/17 Time: 1130 Initials: md

Cooler #1 Temp.°C <u>2.6</u> (Visual) <u>0.1</u> (Correction Factor) <u>2.7</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 Other _____
 Billing: Recipient Sender Third Party Unknown

Tracking # 8747 8751 2068

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No Ice: Wet Blue 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	
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 type="checkbox"/> No <input checked="" 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 type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Preservation Information: Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: VOA, Coliform, TOC, O&G, Carbamates	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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):

