**Pace Analytical Services, LLC**
6701 Conference Drive
Raleigh, NC 27607
(919)834-4984

December 01, 2023

Kenneth McLamb
Town of Stem
100 Franklin St
Stem, NC 27581

RE: Project: QUARTERLY 11/17/23
Pace Project No.: 92699301

Dear Kenneth McLamb:

Enclosed are the analytical results for sample(s) received by the laboratory on November 17, 2023. The results relate only to the samples included in this report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

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,

Terri Page
terri.page@pacelabs.com
336-904-4231
Project Manager

Enclosures

cc: Kenneth McLamb, Town Of Stem

**REPORT OF LABORATORY ANALYSIS**

**Pace Analytical Services, LLC**
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## CERTIFICATIONS

Project: QUARTERLY 11/17/23
Pace Project No.: 92699301

**Pace Analytical Services Ormond Beach**
8 East Tower Circle, Ormond Beach, FL 32174
Alaska DEC- CS/UST/LUST
Alabama Certification #: 41320
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 ANALYTE COUNT

Project: QUARTERLY 11/17/23
Pace Project No.: 92699301

| Lab ID | Sample ID | Method | Analysts | Analytes Reported | Laboratory |
|---|---|---|---|---|---|
| **92699301001** | **FH #25** | EPA 200.8 | EAP | 1 | PASI-O |
| **92699301002** | **FH #66** | EPA 200.8 | EAP | 1 | PASI-O |

PASI-O = Pace Analytical Services - Ormond Beach

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## ANALYTICAL RESULTS

Project: QUARTERLY 11/17/23
Pace Project No.: 92699301

**Sample: FH #25** **Lab ID: 92699301001** Collected: 11/17/23 09:45 Received: 11/17/23 12:00 Matrix: Drinking Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **200.8 MET ICPMS Drinking Water** | Analytical Method: EPA 200.8<br>Pace Analytical Services - Ormond Beach | | | | | | | |
| Manganese | **0.092** | mg/L | 0.0020 | 1 | | 11/27/23 18:07 | 7439-96-5 | |

**Sample: FH #66** **Lab ID: 92699301002** Collected: 11/17/23 10:15 Received: 11/17/23 12:00 Matrix: Drinking Water

| Parameters | Results | Units | Report Limit | DF | Prepared | Analyzed | CAS No. | Qual |
|---|---|---|---|---|---|---|---|---|
| **200.8 MET ICPMS Drinking Water** | Analytical Method: EPA 200.8<br>Pace Analytical Services - Ormond Beach | | | | | | | |
| Manganese | **0.15** | mg/L | 0.0020 | 1 | | 11/27/23 18:11 | 7439-96-5 | |

## REPORT OF LABORATORY ANALYSIS

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## QUALITY CONTROL DATA

Project: QUARTERLY 11/17/23
Pace Project No.: 92699301

QC Batch: 968552
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET No Prep Drinking Water
Laboratory: Pace Analytical Services - Ormond Beach
Associated Lab Samples: 92699301001, 92699301002

METHOD BLANK: 5327507 Matrix: Water
Associated Lab Samples: 92699301001, 92699301002

| Parameter | Units | Blank Result | Reporting Limit | Analyzed | Qualifiers |
|---|---|---|---|---|---|
| Manganese | mg/L | ND | 0.0020 | 11/27/23 17:53 | |

LABORATORY CONTROL SAMPLE: 5327508

| Parameter | Units | Spike Conc. | LCS Result | LCS % Rec | % Rec Limits | Qualifiers |
|---|---|---|---|---|---|---|
| Manganese | mg/L | 0.05 | 0.051 | 102 | 85-115 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5327503 5327504

| Parameter | Units | 30639807001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | mg/L | 0.0073 | 0.05 | 0.05 | 0.063 | 0.064 | 111 | 113 | 70-130 | 2 | |

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 5327505 5327506

| Parameter | Units | 92699322001 Result | MS Spike Conc. | MSD Spike Conc. | MS Result | MSD Result | MS % Rec | MSD % Rec | % Rec Limits | RPD | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Manganese | mg/L | 0.0074 | 0.05 | 0.05 | 0.065 | 0.064 | 115 | 113 | 70-130 | 2 | |

**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.**

## REPORT OF LABORATORY ANALYSIS

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# QUALIFIERS

Project: QUARTERLY 11/17/23
Pace Project No.: 92699301

**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

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

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.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

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.

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: QUARTERLY 11/17/23
Pace Project No.: 92699301

| Lab ID | Sample ID | QC Batch Method | QC Batch | Analytical Method | Analytical Batch |
|---|---|---|---|---|---|
| **92699301001** | **FH #25** | EPA 200.8 | 968552 | | |
| **92699301002** | **FH #66** | EPA 200.8 | 968552 | | |

WO# : 92699301

92699301

Pace® Location Requested (City/State):

Pace Analytical Raleigh
4915 Waters Edge Drive, Suite 125
Raleigh, NC 27606

# CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

| | | | |
|---|---|---|---|
| Company Name: | Town Of Stem | Contact/Report To: | McLamb, Kenneth |
| Street Address: | 100 Franklin St, null<br>Stem, NC 27581 | Phone #: | 919-724-3334 |
| | | E-Mail: | kenneth.mclamb@stemnc.org |
| | | Cc E-Mail: | |
| Customer Project #: | | Invoice To: | |
| Project Name: | QUARTERLY | Invoice E-Mail: | |
| Site Collection Info/Facility ID (as applicable): | Stem, NC Carriage Hills FH#25= Ardmore Drive/Griffis Drive FH#66= and Cardinal St | Purchase Order # (if applicable): | |
| | | Quote #: | |
| Time Zone Collected: | [ ] AK [ ] PT [ ] MT [ ] CT [X] ET | County / State origin of sample(s): | North Carolina |

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable:

Rush (Pre-approval required): [ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other

Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk

Specify Container Size **: 6 3 6

Identify Container Preservative Type***: 1 1 2 8

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only: Proj. Mgr: Kristi Prater; AcctNum / Client ID:; Table #:; Profile / Template: 9186; Prelog / Bottle Ord. ID: 843976

Preservation non-conformance identified for sample.

| Customer Sample ID | Matrix * | Comp / Grab | Collected (or Composite Start) Date | Collected (or Composite Start) Time | Composite End Date | Composite End Time | Res. Cl2 | Number & Type of Containers Plastic | Number & Type of Containers Glass | HAA | Metals | THM | Sample Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FH#25 | DW | Grab | 11/17/2023 | 09:45 | | | | 1 | 6 | 3 | 1 | 3 | pH=7.0su@16.9°Celsius |
| FH#66 | DW | Grab | 11/17/2023 | 10:15 | | | | 1 | 6 | 3 | 1 | 3 | pH=6.7su@17.9°Celsius |
| Trip Blank-THM | WT | Grab | 11/17/2023 | 08:30 | | | | 0 | 2 | | | 2 | |
| | | | | | | | | | | | | | FH#25 pH= 7.0su@ 16.9°Celsius |
| | | | | | | | | | | | | | FH#66 pH= 6.7su@17.9°Celsius |
| | | | | | | | | | | | | | FH#25 @ magnum trees |
| | | | | | | | | | | | | | FH#66 @ carriage Hills |

Customer Remarks / Special Conditions / Possible Hazards: FH=Fire Hydrants

Time= 3 hours total mileage= 70 miles total

Collected By: Tyler Gallier-PACE

Printed Name: Tyler Gallier-PACE

Signature: Tyler Gallier-PACE

Additional Instructions from Pace®:

| # Coolers: | Thermometer ID: | Correction Factor (°C): | Obs. Temp. (°C) | Corrected Temp. (°C) |
|---|---|---|---|---|
| 1 | 91705 | 3.90 | 3.9 | 3.9 |

| | | | | | |
|---|---|---|---|---|---|
| Relinquished by/Company: (Signature) | Tyler Gallier-PACE | Date/Time: 11/17/23/11:30 | Received by/Company: (Signature) | Date/Time: 11-17-23/1200 | Tracking Number: |
| Relinquished by/Company: (Signature) | | Date/Time: | Received by/Company: (Signature) | Date/Time: | Delivered by: [ ] In-Person [X] Courier |
| Relinquished by/Company: (Signature) | | Date/Time: | Received by/Company: (Signature) | Date/Time: | [ ] FedEx [ ] UPS [ ] Other |
| Relinquished by/Company: (Signature) | | Date/Time: | Received by/Company: (Signature) | Date/Time: | Page: of |

| Pace ANALYTICAL SERVICES | DC#_Title: ENV-FRM-HUN1-0083 v01_Sample Condition Upon Receipt |
|---|---|
| | Effective Date: 05/12/2022 |

**Laboratory receiving samples:**

~~Asheville~~ ☐ ~~Eden~~ ☐ ~~Greenwood~~ ☐ ~~Huntersville~~ ☐ ~~Raleigh~~ ☑ ~~Mechanicsville~~ ☐ ~~Atlanta~~ ☐ ~~Kernersville~~ ☐

**Sample Condition Upon Receipt**

**Client Name:** Town of Stem

**Project #:**

**Courier:** ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:____

**Custody Seal Present?** ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

**Date/Initials Person Examining Contents:** 11-17-23 QR

**Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other

**Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

**Thermometer:** ☐ IR Gun ID: 91T005

**Type of Ice:** ☑ Wet ☐ Blue ☐ None

**Cooler Temp:** 3.9 **Correction Factor:** Add/Subtract (°C) 0

Temp should be above freezing to 6°C

☐ Samples out of temp criteria. Samples on ice, cooling process has begun

**Cooler Temp Corrected (°C):** 3.9

**USDA Regulated Soil** ( ☑ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

| | | | | Comments/Discrepancy: |
|---|---|---|---|---|
| Chain of Custody Present? | ☑ Yes | ☐ No | ☐ N/A | 1. |
| Samples Arrived within Hold Time? | ☑ Yes | ☐ No | ☐ N/A | 2. |
| **Short Hold Time Analysis (<72 hr.)?** | ☐ Yes | ☑ No | ☐ N/A | 3. |
| **Rush Turn Around Time Requested?** | ☐ Yes | ☑ No | ☐ N/A | 4. |
| Sufficient Volume? | ☑ Yes | ☐ No | ☐ N/A | 5. |
| Correct Containers Used? | ☑ Yes | ☐ No | ☐ N/A | 6. |
| -Pace Containers Used? | ☑ Yes | ☐ No | ☐ N/A | |
| Containers Intact? | ☑ Yes | ☐ No | ☐ N/A | 7. |
| Dissolved analysis: Samples Field Filtered? | ☐ Yes | ☐ No | ☑ N/A | 8. |
| Sample Labels Match COC? | ☑ Yes | ☐ No | ☐ N/A | 9. |
| -Includes Date/Time/ID/Analysis Matrix:____ | | | | |
| Headspace in VOA Vials (>5-6mm)? | ☐ Yes | ☑ No | ☐ N/A | 10. |
| Trip Blank Present? | ☐ Yes | ☐ No | ☑ N/A | 11. |
| Trip Blank Custody Seals Present? | ☐ Yes | ☐ No | ☑ N/A | |

**COMMENTS/SAMPLE DISCREPANCY**

**Field Data Required?** ☐ Yes ☑ No

Lot ID of split containers:

**CLIENT NOTIFICATION/RESOLUTION**

Person contacted: _____ Date/Time: _____

**Project Manager SCURF Review:** _____ **Date:** _____

**Project Manager SRF Review:** _____ **Date:** _____

Pace ANALYTICAL SERVICES

**DC#_Title: ENV-FRM-HUN1-0083 v01_Sample Condition Upon Receipt**

**Effective Date: 05/12/2022**

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

**Exceptions:** VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottles**

*****Check all unpreserved Nitrates for chlorine**

**Project #**

| Item# | BP4U-125 mL Plastic Unpreserved (N/A) (Cl-) | BP3U-250 mL Plastic Unpreserved (N/A) | BP2U-500 mL Plastic Unpreserved (N/A) | BP1U-1 liter Plastic Unpreserved (N/A) | BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-) | BP3N-250 mL plastic HNO3 (pH < 2) | BP4Z-125 mL Plastic ZN Acetate & NaOH (>9) | BP4B-125 mL Plastic NaOH (pH > 12) (Cl-) | WGFU-Wide-mouthed Glass jar Unpreserved | AG1U-1 liter Amber Unpreserved (N/A) (Cl-) | AG1H-1 liter Amber HCl (pH < 2) | AG3U-250 mL Amber Unpreserved (N/A) (Cl-) | AG1S-1 liter Amber H2SO4 (pH < 2) | AG3S-250 mL Amber H2SO4 (pH < 2) | DG9A-250 mL Amber NH4Cl (N/A)(Cl-) | DG9H-40 mL VOA HCl (N/A) | VG9T-40 mL VOA Na2S2O3 (N/A) | VG9U-40 mL VOA Unpreserved (N/A) | DG9V-40 mL VOA H3PO4 (N/A) | DG9S-40 mL VOA H2SO4 (N/A) | V/GK (3 vials per kit)-VPH/Gas kit (N/A) | SP5T-125 mL Sterile Plastic (N/A – lab) | SP2T-250 mL Sterile Plastic (N/A – lab) | Tiny BIGM-V9T | BP3R-250 mL Plastic (NH2)2SO4 (9.3-9.7) | AG0U-100 mL Amber Unpreserved (N/A) (Cl-) | VSGU-20 mL Scintillation vials (N/A) | DG9U-40 mL Amber Unpreserved vials (N/A) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | 2 | | | | | | | | | 3 | | 3 | | | | | | | | | | | | | |
| 2 | | | | | | 2 | | | | | | | | | 3 | | 3 | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**pH Adjustment Log for Preserved Samples**

| Sample ID | Type of Preservative | pH upon receipt | Date preservation adjusted | Time preservation adjusted | Amount of Preservative added | Lot # |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DENR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.