ARROWHEAD POINT DETAIL
EXHIBIT B

| Candlewood Lake Water Supplies - Drinking Water Analysis | | | | | | |
|---|---|---|---|---|---|---|
| Water Source / Utility | | | Candlewood Shores | Arrowhead | Aquarion Western | Lake |
| Sampling Date | | | 15-Aug-19 | 22-Aug-19 | | |
| | Units | RL | | | | |
| Alkalinity | mg/L as $CaCO_3$ | 2 | 166 | 180 | | |
| Chloride | mg/L | 10 | 94 | 93 | | |
| pH | SU | | 7.1 | 7.5 | | |
| Nitrate-N | mg/L | 0.100 | 6.99 | 6.85 | | |
| TP | mg/L | 0.010 | 0.015 | 0.017 | | |
| ortho-P | mg/L | 0.005 | 0.016 | 0.018 | | |
| Boron [1] | mg/L | 0.030 | 0.054 | 0.038 | ND | ND |
| Acesulfame K [2] | ppt-ng/L | 100 | 532 | 1,040 | 204 | 102 |
| Sucralose [3] | ppt-ng/L | 1,000 | | | 1,900 | ND |
| Saccharin [3] | ppt-ng/L | 100 | | | ND | ND |
| PFOA | ppt-ng/L | 1.72 | 24.6 | 8.14 | | |
| PFOS | ppt-ng/L | 1.72 | 28.3 | 5.73 | | |
| PFOA/PFOS Total | ppt-ng/L | 1.72 | 52.9 | 13.87 | | |
| | | | 04-Sep-19 | 04-Sep-19 | 04-Sep-19 | 04-Sep-19 |
| PFOA | ppt-ng/L | 1.72 | 20.3 | 8.69 | 10.7 | 3.71 |
| PFOS | ppt-ng/L | 1.72 | 24.7 | 7.5 | 13.1 | 2.14 |
| PFOA/PFOS Total | ppt-ng/L | 1.72 | 45.0 | 16.19 | 23.8 | 5.85 |

[1] Sampled 4 Sept 2019 [2] Level of Quantification (LOQ) [3] Sampled 16 Sept 2019 ND=Non Detect

RL = Reportable Limit for the test procedure, which is the Limit of Detection

EMSL Analytical, Inc.
200 Rt. 130 N, Cinnaminson, NJ 08077
Phone/Fax: 800-220-3675/ 856-786-0392
www.emsl.com www.foodtestinglab.com www.shelflifestudy.com

**EMSL Order:** 211901480
**Customer ID:** LMBA75
**Customer PO:**

Attn: **Pio Lombardo**
**Lombardo Associates**
**188 Church St.**
**Newton, MA 02458**

Phone: **617-964-2924**
Fax: **617-332-5470**

Collected: **8/22/2019**
Received: **8/23/2019**
Reported: **9/12/2019**

Project: **Candlewood - Brookfield**

# Food Chemistry Analytical Report

| ***EMSL ID:*** | ***211901480-0001*** | |
|---|---|---|
| ***Sample Description:*** | **Candlewood Arrowhead** | |
| ***Analyte*** | ***Result*** | ***Units*** |
| Acesulfame K | 1040 | ng/L |

**Ryan McKenna – Food Chemistry Supervisor**

LOQ – Limit of Quantitation

ND – Indicates that the analyte was not detected at the Limit of Quantitation

Methods used: Bikram Subedi, Kurunthachalam Kannan. "Fate of Artificial Sweeteners in Wastewater Treatment Plants in New York State, USA." Enviromental Science & Technology. Modified
Sabine Junginger. "Analyzing Synthetic Sweeteners in Waste Water with Robust Sample Preparation. Agilent Technologies. Modified

Report Revision **0**: Initial issue

EMSL Analytical, Inc.
200 Rt. 130 N, Cinnaminson, NJ 08077
Phone/Fax: 800-220-3675/ 856-786-0392
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| | |
|---|---|
| **EMSL Order:** | **211901480** |
| **Customer ID:** | **LMBA75** |
| **Customer PO:** | |

| | | | |
|---|---|---|---|
| Attn: | **Pio Lombardo** | Phone: | **617-964-2924** |
| | **Lombardo Associates** | Fax: | **617-332-5470** |
| | **188 Church St.** | | |
| | **Newton, MA 02458** | Collected: | **8/22/2019** |
| | | Received: | **8/23/2019** |
| Project: | **Candlewood - Brookfield** | Reported: | **9/12/2019** |

**NOTES:** All samples were collected by and all sampling data was provided by the client. The results are valid only for those samples analyzed, and only for those samples collected in accordance with appropriate methodology as determined by the client. This report is not intended for FDA Import Detention Reporting, and has not been prepared in compliance with FDA import / Export regulations. The results herein do not denote or represent a medical or clinical diagnosis or conclusion. In the even that samples(s) were submitted in opened, used, non-sterile or otherwise adulterated condition EMSL shall not be responsible or liable.

Unless otherwise noted or requested, all analysis was done in accordance with EMSL Analytical, Inc. default methodology for the reported analytes. Method selection is based on customer request, provided ingredient declarations, known matrix interferences or considerations, and applicable regulatory requirements. In the absence of this information, EMSL Analytical, Inc. will select the most appropriate methods based on the sample information available.

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

# Environmental Chemistry
# Chain of Custody

EMSL Order Number (*Lab Use Only*): 211901480

PHONE:
FAX:

| | | | |
|---|---|---|---|
| Report To Contact Name: PIO LOMBARDO | | Bill To Company: SAME | |
| Company Name: LOMBARDO ASSOCIATES | | Attention To: | |
| Street: 188 CHURCH ST | | Street: | |
| City: NEWTON State/Province: MA Zip/Postal Code: 02458 | | City: State/Province: Zip/Postal Code: | |
| Phone: 617-964-2924 Fax: 617-332-5470 | | Phone: Fax: | |
| Project Name: CANDLEWOOD - BROOKFIELD | Email Results To: PIO@LOMBARDOASSOCIATES.COM | Purchase Order: | |
| U.S. State where Samples Collected: | Number of Samples in Shipment: | Date of Shipment: | |

Sample for Compliance? Yes ☐ No ☐ If yes, NPDES? ☐ Other (Specify):

Samples Collected by: EMSL ☐ Client ☐ check one | Sampled By (Signature): | Samples Received Chilled (Y/N) ___

Standard Turnaround Time: ☐ 2 Weeks | The following TATs are subject to lab approval: ☐ 1 Week ☐ 4 Days ☐ 3 Days ☐ 2 Days ☐ 1 Day

Failure to complete will hinder processing of samples

| Client Sample ID | Comp | Grab | Collect Date/Time | Matrix (W=Water S=Soil A=Air SL=Sludge O= Other) | Preservative (1=HCL 2=HNO3 3=H2SO4 4=ICE 5=Other) | ARTHROPOD SURVEYS | Field pH | Field pH Test Time | Field Temp. Deg C | Field Temp. Test Time | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CANDLEWOOD | ☐ | ☒ | ~~8-14-19~~ | W | — | 1 | | | | | |
| ~~SHADOWS~~ | ☐ | ☐ | | | | | | | | | |
| ARROWHEAD | ☐ | ☐ | 8-22-19 | | | | | | | | |
| | ☐ | ☐ | | | | | | | | | |
| | ☐ | ☐ | | | | | | | | | |

| Released By (Signature) | Date & Time | Received By | Date & Time |
|---|---|---|---|
| ~~[signature]~~ | ~~8-14-19 1:00 PM~~ | FX | 8/23/19 9:15 |
| [signature] | 8-22-19 8:30 AM | | |

Please indicate reporting requirements: ☐ Results Only ☐ Results and QC ☐ Reduced Deliverables ☐ Disk Deliverable ☐ Other ___

Instructions or Comments:

Note: Field pH and Field Temperature are tested on the same day as the date of sample collection.

(Lab) Received Temperature: 10.7 °C

**From:** Silverman, Josh
**To:** Pio Lombardo
**Subject:** RE: EMSL report, COC for order(s) 211901429 (211901429 - Candlewood - Brookfield)
**Date:** Thursday, September 12, 2019 1:10:03 PM
**Attachments:** image002.png

---

Hi Pio,

We only focused on Acesulfame for the last week and the LOQ for what was just reported was 100 ng/L. Both samples had concentrations above that.

**Josh Silverman** | *Sales Account Representative*
**EMSL Analytical, Inc.** | 200 Route 130 North | Cinnaminson, NJ 08077
Phone: 856-303-2531 Cell: 609-519-0143 | Fax: 856-786-5974 | Toll Free: 800-220-3675



---

**From:** Pio Lombardo [mailto:pio@lombardoassociates.com]
**Sent:** Thursday, September 12, 2019 1:02 PM
**To:** Silverman, Josh
**Subject:** FW: EMSL report, COC for order(s) 211901429 (211901429 - Candlewood - Brookfield)

**[EXTERNAL E-MAIL]**

Great !

What are the detection limits and/or Limits of Quantification?

Pio

---

**From:** EMSL (Cinnaminson) <foodchemlab@EMSL.com>
**Sent:** Thursday, September 12, 2019 11:57 AM
**To:** Pio Lombardo <pio@lombardoassociates.com>
**Subject:** EMSL report, COC for order(s) 211901429 (211901429 - Candlewood - Brookfield)

Report, COC for order(s):
211901429 - Candlewood - Brookfield

Please tell us how we are doing.

# ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1938226 |
| Client: | Lombardo Associates, Inc.<br>188 Church Street<br>Newton, MA 02458 |
| ATTN: | Pio Lombardo |
| Phone: | (617) 964-2924 |
| Project Name: | BROOKFIELD, CT |
| Project Number: | Not Specified |
| Report Date: | 09/10/19 |



Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified

**Lab Number:** L1938226
**Report Date:** 09/10/19

| Alpha Sample ID | Client ID | Matrix | Sample Location | Collection Date/Time | Receive Date |
|---|---|---|---|---|---|
| L1938226-01 | ARROWHEAD ROAD | WATER | ARROWHEAD ROAD | 08/22/19 08:30 | 08/22/19 |
| L1938226-02 | FIELD BLANK | WATER | ARROWHEAD ROAD | 08/22/19 00:00 | 08/22/19 |

| | | | |
|---|---|---|---|
| **Project Name:** | BROOKFIELD, CT | **Lab Number:** | L1938226 |
| **Project Number:** | Not Specified | **Report Date:** | 09/10/19 |

## Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

| | | | |
|---|---|---|---|
| **Project Name:** | BROOKFIELD, CT | **Lab Number:** | L1938226 |
| **Project Number:** | Not Specified | **Report Date:** | 09/10/19 |

**Case Narrative (continued)**

Report Submission

September 10, 2019: This final report includes the results of all requested analyses.

September 05, 2019: This preliminary report includes the results of the Perfluorinated Alkyl Acids by EPA 537 analysis performed on L1938226-01.

August 29, 2019: This is a preliminary report.

Sample Receipt

L1938226-02: A sample identified as "FIELD BLANK" was received but not listed on the Chain of Custody. At the client's request, this sample was analyzed for Perfluorinated Alkyl Acids by EPA 537.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Lisa Westerlind

Title: Technical Director/Representative Date: 09/10/19

# ORGANICS

# SEMIVOLATILES

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified

**Lab Number:** L1938226
**Report Date:** 09/10/19

## SAMPLE RESULTS

Lab ID: L1938226-01
Client ID: ARROWHEAD ROAD
Sample Location: ARROWHEAD ROAD

Date Collected: 08/22/19 08:30
Date Received: 08/22/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537
Analytical Date: 09/04/19 09:31
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/30/19 17:43

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| **Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab** | | | | | | |
| Perfluorooctanoic Acid (PFOA) | 8.14 | | ng/l | 1.72 | -- | 1 |
| Perfluorooctanesulfonic Acid (PFOS) | 5.73 | | ng/l | 1.72 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 104 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 105 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 100 | | 70-130 |

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified
**Lab Number:** L1938226
**Report Date:** 09/10/19

## SAMPLE RESULTS

Lab ID: L1938226-02
Client ID: FIELD BLANK
Sample Location: ARROWHEAD ROAD

Date Collected: 08/22/19 00:00
Date Received: 08/22/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537
Analytical Date: 09/09/19 08:47
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 09/05/19 15:30

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| **Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab** | | | | | | |
| Perfluorooctanoic Acid (PFOA) | ND | | ng/l | 1.91 | -- | 1 |
| Perfluorooctanesulfonic Acid (PFOS) | ND | | ng/l | 1.91 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 101 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 109 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 108 | | 70-130 |

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified

**Lab Number:** L1938226
**Report Date:** 09/10/19

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 122,537
Analytical Date: 09/04/19 06:07
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 08/30/19 17:43

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01 Batch: WG1278969-1 | | | | | |
| Perfluorooctanoic Acid (PFOA) | ND | | ng/l | 2.00 | -- |
| Perfluorooctanesulfonic Acid (PFOS) | ND | | ng/l | 2.00 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 101 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 102 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 94 | | 70-130 |

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified

**Lab Number:** L1938226
**Report Date:** 09/10/19

# Method Blank Analysis
## Batch Quality Control

Analytical Method: 122,537
Analytical Date: 09/06/19 22:51
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 09/05/19 15:30

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|---|---|---|---|---|
| Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 02 Batch: WG1280777-1 | | | | | |
| Perfluorooctanoic Acid (PFOA) | ND | | ng/l | 2.00 | -- |
| Perfluorooctanesulfonic Acid (PFOS) | ND | | ng/l | 2.00 | -- |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 100 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 109 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 93 | | 70-130 |

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** BROOKFIELD, CT

**Project Number:** Not Specified

**Lab Number:** L1938226

**Report Date:** 09/10/19

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01 Batch: WG1278969-2 WG1278969-3 | | | | | | | | |
| Perfluorooctanoic Acid (PFOA) | 121 | | 121 | | 70-130 | 0 | | 30 |
| Perfluorooctanesulfonic Acid (PFOS) | 79 | | 99 | | 70-130 | 22 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 103 | | 109 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 102 | | 105 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 93 | | 96 | | 70-130 |

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified

**Lab Number:** L1938226
**Report Date:** 09/10/19

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 02 Batch: WG1280777-2 WG1280777-3 | | | | | | | | |
| Perfluorooctanoic Acid (PFOA) | 97 | | 106 | | 70-130 | 9 | | 30 |
| Perfluorooctanesulfonic Acid (PFOS) | 92 | | 98 | | 70-130 | 6 | | 30 |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|---|---|---|---|---|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 88 | | 93 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 99 | | 99 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 85 | | 92 | | 70-130 |

# INORGANICS
# &
# MISCELLANEOUS

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified

**Lab Number:** L1938226
**Report Date:** 09/10/19

## SAMPLE RESULTS

Lab ID: L1938226-01
Client ID: ARROWHEAD ROAD
Sample Location: ARROWHEAD ROAD

Date Collected: 08/22/19 08:30
Date Received: 08/22/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| **General Chemistry - Westborough Lab** | | | | | | | | | | |
| Alkalinity, Total | 180. | | mg CaCO3/L | 2.00 | NA | 1 | - | 08/23/19 03:41 | 121,2320B | BR |
| Chloride | 93. | | mg/l | 10 | -- | 10 | - | 08/26/19 22:14 | 121,4500CL-E | TL |
| pH (H) | 7.5 | | SU | - | NA | 1 | - | 08/23/19 07:59 | 121,4500H+-B | MA |
| Nitrogen, Nitrate | 6.85 | | mg/l | 0.100 | -- | 1 | - | 08/23/19 07:12 | 121,4500NO3-F | MR |
| Phosphorus, Total | 0.017 | | mg/l | 0.010 | -- | 1 | 08/26/19 10:10 | 08/27/19 08:49 | 121,4500P-E | SD |
| Phosphorus, Orthophosphate | 0.018 | | mg/l | 0.005 | -- | 1 | - | 08/23/19 11:59 | 121,4500P-E | MR |

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified
**Lab Number:** L1938226
**Report Date:** 09/10/19

# Method Blank Analysis
## Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1275856-1 | | | | | | | | | | |
| Nitrogen, Nitrate | ND | | mg/l | 0.100 | -- | 1 | - | 08/23/19 07:42 | 121,4500NO3-F | MR |
| General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1275879-1 | | | | | | | | | | |
| Alkalinity, Total | ND | | mg CaCO3/L | 2.00 | NA | 1 | - | 08/23/19 03:41 | 121,2320B | BR |
| General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1276722-1 | | | | | | | | | | |
| Phosphorus, Total | ND | | mg/l | 0.010 | -- | 1 | 08/26/19 10:10 | 08/27/19 08:43 | 121,4500P-E | SD |
| General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1276898-1 | | | | | | | | | | |
| Chloride | ND | | mg/l | 1.0 | -- | 1 | - | 08/26/19 20:28 | 121,4500CL-E | TL |
| General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1277149-1 | | | | | | | | | | |
| Phosphorus, Orthophosphate | ND | | mg/l | 0.005 | -- | 1 | - | 08/23/19 11:54 | 121,4500P-E | MR |

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified

**Lab Number:** L1938226
**Report Date:** 09/10/19

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1275856-2 | | | | | | | | |
| Nitrogen, Nitrate | 96 | | - | | 90-110 | - | | |
| General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1275879-2 | | | | | | | | |
| Alkalinity, Total | 102 | | - | | 90-110 | - | | 10 |
| General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1275887-1 | | | | | | | | |
| pH | 101 | | - | | 99-101 | - | | 5 |
| General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1276722-2 | | | | | | | | |
| Phosphorus, Total | 95 | | - | | 80-120 | - | | |
| General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1276898-2 | | | | | | | | |
| Chloride | 93 | | - | | 90-110 | - | | |
| General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1277149-2 | | | | | | | | |
| Phosphorus, Orthophosphate | 97 | | - | | 90-110 | - | | |

# Matrix Spike Analysis
## Batch Quality Control

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified

**Lab Number:** L1938226
**Report Date:** 09/10/19

| Parameter | Native Sample | MS Added | MS Found | MS %Recovery | Qual | MSD Found | MSD %Recovery | Qual | Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1275856-4 QC Sample: L1938036-01 Client ID: MS Sample | | | | | | | | | | | | |
| Nitrogen, Nitrate | ND | 4 | 3.91 | 98 | | - | - | | 83-113 | - | | 17 |
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1275879-4 QC Sample: L1938249-01 Client ID: MS Sample | | | | | | | | | | | | |
| Alkalinity, Total | 121 | 100 | 222 | 101 | | - | - | | 86-116 | - | | 10 |
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1276722-3 QC Sample: L1937791-01 Client ID: MS Sample | | | | | | | | | | | | |
| Phosphorus, Total | 10.8 | 0.5 | 14.9 | 81 | | - | - | | 75-125 | - | | 20 |
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1276898-4 QC Sample: L1938525-01 Client ID: MS Sample | | | | | | | | | | | | |
| Chloride | 290 | 20 | 300 | **50** | Q | - | - | | 58-140 | - | | 7 |
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1277149-4 QC Sample: L1938061-04 Client ID: MS Sample | | | | | | | | | | | | |
| Phosphorus, Orthophosphate | ND | 0.5 | 0.495 | 99 | | - | - | | 80-120 | - | | 20 |

# Lab Duplicate Analysis
***Batch Quality Control***

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified

***Lab Number:*** L1938226
***Report Date:*** 09/10/19

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1275856-3 QC Sample: L1938036-01 Client ID: DUP Sample | | | | | | |
| Nitrogen, Nitrate | ND | ND | mg/l | NC | | 17 |
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1275879-3 QC Sample: L1938249-01 Client ID: DUP Sample | | | | | | |
| Alkalinity, Total | 121 | 124 | mg CaCO3/L | 2 | | 10 |
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1275887-2 QC Sample: L1938244-01 Client ID: DUP Sample | | | | | | |
| pH | 7.3 | 7.3 | SU | 0 | | 5 |
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1276722-4 QC Sample: L1937791-01 Client ID: DUP Sample | | | | | | |
| Phosphorus, Total | 10.8 | 10.5 | mg/l | 3 | | 20 |
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1276898-3 QC Sample: L1938525-01 Client ID: DUP Sample | | | | | | |
| Chloride | 290 | 280 | mg/l | 4 | | 7 |
| General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1277149-3 QC Sample: L1938061-04 Client ID: DUP Sample | | | | | | |
| Phosphorus, Orthophosphate | ND | ND | mg/l | NC | | 20 |

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified

**Lab Number:** L1938226
**Report Date:** 09/10/19

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

### Cooler Information

| Cooler | Custody Seal |
|---|---|
| A | Absent |
| B | Absent |

### Container Information

| Container ID | Container Type | Cooler | Initial pH | Final pH | Temp deg C | Pres | Seal | Frozen Date/Time | Analysis(*) |
|---|---|---|---|---|---|---|---|---|---|
| L1938226-01A | Plastic 250ml Trizma preserved | B | NA | | 3.1 | Y | Absent | | A2-537(14) |
| L1938226-01B | Plastic 250ml Trizma preserved | B | NA | | 3.1 | Y | Absent | | A2-537(14) |
| L1938226-01C | Plastic 120ml unpreserved | A | 7 | 7 | 2.6 | Y | Absent | | OPHOS-4500(2) |
| L1938226-01D | Plastic 250ml unpreserved | A | 7 | 7 | 2.6 | Y | Absent | | CL-4500(28),NO3-4500(2),PH-4500(.01) |
| L1938226-01E | Plastic 250ml unpreserved/No Headspace | A | NA | | 2.6 | Y | Absent | | ALK-T-2320(14) |
| L1938226-01F | Plastic 250ml H2SO4 preserved | A | <2 | <2 | 2.6 | Y | Absent | | TPHOS-4500(28) |
| L1938226-02A | Plastic 250ml unpreserved | A | 7 | 7 | 2.6 | Y | Absent | | A2-537(14) |



*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | BROOKFIELD, CT | **Lab Number:** | L1938226 |
| **Project Number:** | Not Specified | **Report Date:** | 09/10/19 |

## GLOSSARY

### *Acronyms*

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### *Footnotes*

*Report Format: Data Usability Report*

**Project Name:** BROOKFIELD, CT **Lab Number:** L1938226

**Project Number:** Not Specified **Report Date:** 09/10/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### *Terms*

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### *Data Qualifiers*

**A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

**B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

**C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

**D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

**E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

**G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

**H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

**I** - The lower value for the two columns has been reported due to obvious interference.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

**ND** - Not detected at the reporting limit (RL) for the sample.

**NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

**P** - The RPD between the results for the two columns exceeds the method-specified criteria.

**Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**S** - Analytical results are from modified screening analysis.

*Report Format: Data Usability Report*

**Project Name:** BROOKFIELD, CT
**Project Number:** Not Specified
**Lab Number:** L1938226
**Report Date:** 09/10/19

## REFERENCES


121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.


## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

# Certification Information

**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**
**EPA 624/624.1:** m/p-xylene, o-xylene
**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
**EPA 8270D:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
**SM4500**: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

**Mansfield Facility**
**SM 2540D:** TSS
**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
**Biological Tissue Matrix:** EPA 3050B

**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

***Drinking Water***
**EPA 300.0**: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
**EPA 332**: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
**Microbiology**: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

***Non-Potable Water***
**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
**EPA 624.1**: Volatile Halocarbons & Aromatics,
**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
**EPA 625.1**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
**Microbiology**: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

**Mansfield Facility:**

***Drinking Water***
**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
**EPA 522.**

***Non-Potable Water***
**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
**EPA 200.8:** Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
**EPA 245.1** Hg.
**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

# CHAIN OF CUSTODY

PAGE_____ OF _____

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 8/22/19

ALPHA Job #: L1938826

**Client Information**
Client: Lombardo Associates
Address: 188 Church St.
Newton, MA 02458
Phone: (617) 964-2924
Email: Pio@lombardoassociates.com

**Project Information**
Project Name: Brookfield CT
Project Location: Arrowhead Road
Project #:
Project Manager: Pio Lombardo
ALPHA Quote #: Dave Sanford

**Turn-Around Time**
☐ Standard ☑ RUSH (only confirmed if pre-approved!)
Date Due:

**Report Information - Data Deliverables**
☐ ADEx ☑ EMAIL

**Billing Information**
☐ Same as Client info PO #:

**Regulatory Requirements & Project Information Requirements**
☐ Yes ☑ No MA MCP Analytical Methods ☐ Yes ☑ No CT RCP Analytical Methods
☐ Yes ☑ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☑ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☑ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

ANALYSIS
VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
~~CT08 CT05~~ PFOA/PFAS
TPH: ☐ Quant Only ☐ Fingerprint
pH
Chlorine
Nitrate-N
Total Phosphorus
Alkalinity

SAMPLE INFO
*Filtration*
☐ Field
☐ Lab to do
*Preservation*
☐ Lab to do

Sample Comments

TOTAL # BOTTLES

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler Initials | VOC | SVOC | METALS | METALS | EPH | VPH | PFOA/PFAS | TPH | pH | Chlorine | Nitrate-N | Total Phosphorus | Alkalinity | Sample Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 58226-01 | Arrowhead Road | 8-22-19 | 8:30 AM | Water | | | | | | | | 1 | | 1 | 1 | 1 | 1 | 1 | | |

**Container Type**
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

**Preservative**
A= None
B= HCl
C= $HNO_3$
D= $H_2SO_4$
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = $NH_4Cl$
K= Zn Acetate
O= Other

| | Container Type | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Preservative | | | | | | | | | | | | | | | | | | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| | 8/22/19 1955 | AAR | 8/22/19 1955 |

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

# CHAIN OF CUSTODY

PAGE _____ OF _____

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 8/22/19

ALPHA Job #: L1938276

**Client Information**

Client: Lombardo Associates
Address: 188 Church St.
Newton, MA 02458
Phone: (617) 964-2924
Email: Pio@lombardoassociates.com

**Project Information**

Project Name: Brookfield CT
Project Location: Arrowhead Road
Project #:
Project Manager: Pio Lombardo
ALPHA Quote #: Dave Sanford

**Turn-Around Time**

☐ Standard ☑ RUSH (only confirmed if pre-approved!)
Date Due:

Additional Project Information:

**Report Information - Data Deliverables**

☐ ADEx ☑ EMAIL

**Billing Information**

☐ Same as Client info PO #:

**Regulatory Requirements & Project Information Requirements**

☐ Yes ☑ No MA MCP Analytical Methods ☐ Yes ☑ No CT RCP Analytical Methods
☐ Yes ☑ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☑ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☑ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler Initials | VOC: ☐ 8260 ☐ 624 ☐ 524.2 | SVOC: ☐ ABN ☐ PAH | METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15 | METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13 | EPH: ☐ Ranges & Targets ☐ Ranges Only | VPH: ☐ Ranges & Targets ☐ Ranges Only | ~~8260 624~~ PFOA/PFAS | TPH: ☐ Quant Only ☐ Fingerprint | PH | Chlorine | Nitrate-N | Total Phosphorus | Alkalinity | Sample Comments | TOTAL # BOTTLES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 38221-01 | Arrowhead Road | 8-22-19 | 8:30 AM | Water | | | | | | | | 1 | | 1 | 1 | 1 | 1 | 1 | | |

**SAMPLE INFO**
*Filtration*
☐ Field
☐ Lab to do
*Preservation*
☐ Lab to do

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | | | | | | | | | | | | | | | | | | | | |
| Preservative | | | | | | | | | | | | | | | | | | | | |

***Container Type***
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

***Preservative***
A= None
B= HCl
C= $HNO_3$
D= $H_2SO_4$
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = $NH_4Cl$
K= Zn Acetate
O= Other

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| | 8/22/19 1955 | ABL | 8/22/19 1955 |

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

JOB: L1940301 REPORT STYLE: Data Usability Report
0010: Alpha Analytical Report Cover Page - OK
0015: Sample Cross Reference Summary - OK
0040: CT DEP RCP QA/QC Certification Form - OK
0060: Case Narrative - OK
0070: QC Outlier Summary Report - OK
1005: Metals Sample Results - OK
1010: Metals Method Blank Report - OK
1020: Metals LCS Report - OK
5100: Sample Receipt & Container Information Report - OK
5200: Glossary - OK
5400: References - OK

---

No results found for sample L1940301-01 for product A2-537
No results found for sample L1940301-02 for product A2-537
No results found for sample L1940301-03 for product A2-537
No results found for sample L1940301-04 for product A2-537

ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1940301 |
| Client: | Lombardo Associates, Inc.<br>188 Church Street<br>Newton, MA 02458 |
| ATTN: | Pio Lombardo |
| Phone: | (617) 964-2924 |
| Project Name: | CANDLEWOOD LAKE-BROOKFIELD |
| Project Number: | 6681 |
| Report Date: | 09/11/19 |



Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

**Project Name:** CANDLEWOOD LAKE-BROOKFIELD
**Project Number:** 6681

**Lab Number:** L1940301
**Report Date:** 09/11/19

| Alpha Sample ID | Client ID | Matrix | Sample Location | Collection Date/Time | Receive Date |
|---|---|---|---|---|---|
| L1940301-01 | ARROWHEAD-LEVINE | WATER | BROOKFIELD, CT | 09/04/19 08:30 | 09/04/19 |
| L1940301-02 | CANDLEWOOD SHORES | WATER | BROOKFIELD, CT | 09/04/19 15:15 | 09/04/19 |
| L1940301-03 | CANDLEWOOD LAKE | WATER | BROOKFIELD, CT | 09/04/19 12:00 | 09/04/19 |
| L1940301-04 | JOHN | WATER | BROOKFIELD, CT | 09/04/19 15:00 | 09/04/19 |

**Project Name:** CANDLEWOOD LAKE-BROOKFIELD **Lab Number:** L1940301
**Project Number:** 6681 **Report Date:** 09/11/19

**CT DEP Reasonable Confidence Protocols**
**Laboratory Analysis**
**QA/QC Certification Form**

| | | |
|---|---|---|
| 1 | For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed (including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the CT DEP method-specific Reasonable Confidence Protocol documents)? | YES |
| 1a | Were the method specified preservation and holding time requirements met? | YES |
| 1b | VPH & EPH Methods Only: Was the VPH or EPH Method conducted without significant modifications (see Section 11.3 of respective Methods)? | N/A |
| 2 | Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)? | YES |
| 3 | Were all samples received at an appropriate temperature (<6°C)? | YES |
| 4 | Were all QA/QC performance criteria specified in the CT DEP Reasonable Confidence Protocol documents achieved? | YES |
| 5a | Were reporting limits specified or referenced on the chain-of-custody? | NO |
| 5b | Were these reporting limits met? | N/A |
| 6 | For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the Reasonable Confidence Protocol documents? | NO |
| 7 | Are project-specific matrix spikes and laboratory duplicates included in this data set? | NO |

**Note: For all questions to which the response was "No" (with the exception of question #7), additional information must be provided in an attached narrative. If the answer to question #1, #1A or question B is "No", the data package does not meet the requirements for "Reasonable Confidence".**

| | | | |
|---|---|---|---|
| **Project Name:** | CANDLEWOOD LAKE-BROOKFIELD | **Lab Number:** | L1940301 |
| **Project Number:** | 6681 | **Report Date:** | 09/11/19 |

## Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

| | | | |
|---|---|---|---|
| **Project Name:** | CANDLEWOOD LAKE-BROOKFIELD | **Lab Number:** | L1940301 |
| **Project Number:** | 6681 | **Report Date:** | 09/11/19 |

**Case Narrative (continued)**

Report Submission

September 11, 2019: This is a preliminary report.

RCP Related Narratives

Report Submission

In reference to question 5a:

Reporting limits were not specified.

Sample Receipt

L1940301-04: The sample was received above the appropriate pH for the Total Metals analysis. The laboratory added additional HNO3 to a pH <2.

Metals

In reference to question 6:

At the client's request, all submitted samples were not analyzed for the full RCP list of constituents identified in the method specific analyte list presented in the RCP documents.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 09/11/19

# QC OUTLIER SUMMARY REPORT

**Project Name:** CANDLEWOOD LAKE-BROOKFIELD
**Project Number:** 6681

**Lab Number:** L1940301
**Report Date:** 09/11/19

| Method | Client ID (Native ID) | Lab ID | Parameter | QC Type | Recovery/RPD (%) | QC Limits (%) | Associated Samples | Data Quality Assessment |
|---|---|---|---|---|---|---|---|---|

There are no QC Outliers associated with this report.

# METALS

**Project Name:** CANDLEWOOD LAKE-BROOKFIELD **Lab Number:** L1940301

**Project Number:** 6681 **Report Date:** 09/11/19

## SAMPLE RESULTS

Lab ID: L1940301-01 Date Collected: 09/04/19 08:30

Client ID: ARROWHEAD-LEVINE Date Received: 09/04/19

Sample Location: BROOKFIELD, CT Field Prep: Not Specified

Sample Depth:

Matrix: Water

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CT RCP Total Metals - Mansfield Lab | | | | | | | | | | | |
| Boron, Total | 0.038 | | mg/l | 0.030 | -- | 1 | 09/10/19 12:45 | 09/11/19 00:17 | EPA 3005A | 79,6010D | MC |

**Project Name:** CANDLEWOOD LAKE-BROOKFIELD **Lab Number:** L1940301

**Project Number:** 6681 **Report Date:** 09/11/19

# Method Blank Analysis
# Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| CT RCP Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1282294-1 | | | | | | | | | | |
| Boron, Total | ND | | mg/l | 0.030 | -- | 1 | 09/10/19 12:45 | 09/10/19 22:59 | 79,6010D | MC |

**Prep Information**

Digestion Method: EPA 3005A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** CANDLEWOOD LAKE-BROOKFIELD

**Project Number:** 6681

**Lab Number:** L1940301

**Report Date:** 09/11/19

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| CT RCP Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1282294-2 | | | | | | | | |
| Boron, Total | 102 | | - | | 80-120 | - | | 20 |

**Project Name:** CANDLEWOOD LAKE-BROOKFIELD
**Project Number:** 6681

**Lab Number:** L1940301
**Report Date:** 09/11/19

## Sample Receipt and Container Information

Were project specific reporting limits specified? NO

### Cooler Information

| Cooler | Custody Seal |
|---|---|
| A | Absent |

### Container Information

| Container ID | Container Type | Cooler | Initial pH | Final pH | Temp deg C | Pres | Seal | Frozen Date/Time | Analysis(*) |
|---|---|---|---|---|---|---|---|---|---|
| L1940301-01A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 4.6 | Y | Absent | | CT-B-6010T(180) |
| L1940301-01B | Plastic 250ml Trizma preserved | A | NA | | 4.6 | Y | Absent | | A2-537(14) |
| L1940301-01C | Plastic 250ml Trizma preserved | A | NA | | 4.6 | Y | Absent | | A2-537(14) |
| L1940301-02A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 4.6 | Y | Absent | | CT-B-6010T(180) |
| L1940301-02B | Plastic 250ml Trizma preserved | A | NA | | 4.6 | Y | Absent | | A2-537(14) |
| L1940301-02C | Plastic 250ml Trizma preserved | A | NA | | 4.6 | Y | Absent | | A2-537(14) |
| L1940301-03A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 4.6 | Y | Absent | | CT-B-6010T(180) |
| L1940301-03B | Plastic 250ml Trizma preserved | A | NA | | 4.6 | Y | Absent | | A2-537(14) |
| L1940301-03C | Plastic 250ml Trizma preserved | A | NA | | 4.6 | Y | Absent | | A2-537(14) |
| L1940301-04A | Plastic 250ml HNO3 preserved | A | 7 | <2 | 4.6 | N | Absent | | CT-B-6010T(180) |
| L1940301-04B | Plastic 250ml Trizma preserved | A | NA | | 4.6 | Y | Absent | | A2-537(14) |
| L1940301-04C | Plastic 250ml Trizma preserved | A | NA | | 4.6 | Y | Absent | | A2-537(14) |



*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | CANDLEWOOD LAKE-BROOKFIELD | **Lab Number:** | L1940301 |
| **Project Number:** | 6681 | **Report Date:** | 09/11/19 |

## GLOSSARY

### *Acronyms*

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### *Footnotes*

*Report Format: Data Usability Report*

| | | | |
|---|---|---|---|
| **Project Name:** | CANDLEWOOD LAKE-BROOKFIELD | **Lab Number:** | L1940301 |
| **Project Number:** | 6681 | **Report Date:** | 09/11/19 |

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### *Terms*

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### *Data Qualifiers*

**A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

**B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

**C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

**D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

**E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

**G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

**H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

**I** - The lower value for the two columns has been reported due to obvious interference.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

**ND** - Not detected at the reporting limit (RL) for the sample.

**NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

**P** - The RPD between the results for the two columns exceeds the method-specified criteria.

**Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**S** - Analytical results are from modified screening analysis.

*Report Format: Data Usability Report*

## REFERENCES

79 Connecticut DEP Quality Assurance and Quality Control Requirements for SW-846 Methods. CTDEP Reasonable Confidence Protocols (RCPs). Versions 2.0 and 3.0, July and December 2006.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

# Certification Information

**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**
**EPA 624/624.1:** m/p-xylene, o-xylene
**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
**EPA 8270D:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
**SM4500**: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

**Mansfield Facility**
**SM 2540D:** TSS
**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
**Biological Tissue Matrix:** EPA 3050B

**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

***Drinking Water***
**EPA 300.0**: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
**EPA 332**: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
**Microbiology**: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

***Non-Potable Water***
**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
**EPA 624.1**: Volatile Halocarbons & Aromatics,
**EPA 608.3**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
**EPA 625.1**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
**Microbiology**: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

**Mansfield Facility:**

***Drinking Water***
**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
**EPA 522.**

***Non-Potable Water***
**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
**EPA 200.8:** Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
**EPA 245.1** Hg.
**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

# CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 9/4/19

ALPHA Job #: L1940301

**Client Information**

Client: Lombardo Associates
Address: 188 Church St. Newton, MA 02458
Phone: (617) 964-2924
Email: pio@lombardoassociates.com

Additional Project Information:

**Project Information**

Project Name: Candlewood Lake - Brookfield
Project Location: Brookfield, CT
Project #: 6681
Project Manager: Dave Sanford
ALPHA Quote #:

**Turn-Around Time**

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

**Report Information - Data Deliverables**

☐ ADEx ☒ EMAIL

**Billing Information**

☐ Same as Client info PO #:

**Regulatory Requirements & Project Information Requirements**

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

**ANALYSIS**

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
PFAS | PFAS
BORON

**SAMPLE INFO**

*Filtration*
☐ Field
☐ Lab to do
*Preservation*
☐ Lab to do

Sample Comments

TOTAL # BOTTLES

| ALPHA Lab ID (Lab Use Only) | Sample ID | Collection Date | Collection Time | Sample Matrix | Sampler Initials |
|---|---|---|---|---|---|
| 40301-01 | ARROWHEAD - LEVINE | 9-4-19 | 8:30AM | WATER | PSL |
| -02 | CANDLEWOOD SHORES | 9-4-19 | 3:15PM | WATER | PSL |
| -03 | CANDLEWOOD LAKE | 9-4-19 | NOON | WATER | PSL |
| -04 | JOHN | 9-4-19 | 3:00PM | WATER | PSL |

**Container Type**
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

**Preservative**
A= None
B= HCl
C= $HNO_3$
D= $H_2SO_4$
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = $NH_4Cl$
K= Zn Acetate
O= Other

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type | | | | | | | | | | | | | | | | | | | | | | | |
| Preservative | | | | | | | | | | | | | | | | | | | | | | | |

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| | 9-4-19 | AAL | 9/4/19 1802 |

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

**Project Name:** CANDLEWOOD LAKE-BROOKFIELD
**Project Number:** 6681
**Lab Number:** L1940301
**Report Date:** 09/23/19

## SAMPLE RESULTS

Lab ID: L1940301-01
Client ID: ARROWHEAD-LEVINE
Sample Location: BROOKFIELD, CT

Date Collected: 09/04/19 08:30
Date Received: 09/04/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 122,537
Analytical Date: 09/21/19 08:14
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 09/18/19 23:45

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|---|---|---|---|---|---|
| **Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab** | | | | | | |
| Perfluorooctanoic Acid (PFOA) | 8.69 | | ng/l | 1.69 | -- | 1 |
| Perfluorooctanesulfonic Acid (PFOS) | 7.50 | | ng/l | 1.69 | -- | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|---|---|---|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 90 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 77 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | **62** | Q | 70-130 |