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December 28, 2022

**Via Electronic Delivery**

Mr. Edward Dexter, Chief  
Solid Waste Compliance Division  
Maryland Department of the Environment  
1800 Washington Blvd.  
Baltimore, MD 21230

RE: Industrial Waste Disposal Permit No.: 2014-WIF-0042

Mr. Dexter,

Enclosed is the semiannual summary and interpretive discussion for the sampling event from 1 April 2022 through 30 September 2022 as defined Section 4 of the Closed Landfill Monitoring Plan approved by the Maryland Department of the Environment on 4 August 2006. Quantum Loophole acquired the property from ALCOA on June 28, 2021, and has assumed the monitoring and reporting requirements at the facility per the Environmental Covenant and the Site Management Plan, a component of the Environmental Covenant.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please contact Bill Williams – Chief Operations Officer, if you require additional information or have any questions regarding this report. I can be reached at (703) 505-9378 or via email at [bill@ql.email](mailto:bill@ql.email).

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Williams".

Bill Williams  
Chief Operations Officer

cc: Dustin Moore, Tetra Tech

Quantum Maryland, LLC

# CLOSED SOUTH INDUSTRIAL LANDFILL SEMIANNUAL WATER QUALITY REPORT

(FORMER INDUSTRIAL WASTE DISPOSAL PERMIT NO. 90-IW-0042)



December 2022

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# CLOSED SOUTH INDUSTRIAL LANDFILL SEMIANNUAL WATER QUALITY REPORT

(FORMER INDUSTRIAL WASTE DISPOSAL PERMIT NO. 90-IW-0042  
December 2022

## PRESENTED TO

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**Quantum Maryland, LLC**  
500 4<sup>th</sup> E. Street, Suite 333  
Austin, Texas 78701

## PRESENTED BY

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## 1.0 INTRODUCTION

This Semiannual Water Quality Report was prepared by Tetra Tech, Inc. (Tetra Tech) for Quantum Maryland, LLC (Quantum) to document and evaluate the results of groundwater monitoring activities performed during the third quarter of 2022 semiannual reporting period at the closed South Industrial Waste Landfill (Landfill) at the former Eastalco Works aluminum smelter located in Frederick, Maryland (Figure 1-1). Quantum acquired the property from the Eastalco Aluminum Company on June 28, 2021. The site is now referred to as Quantum Frederick. Quantum has begun the permitting and design process for a master planned, first-of-its-kind, clean cloud community campus to be located on the property while continuing to monitor the groundwater in accordance with the Environmental Covenant (EC) executed on December 12, 2017 (Eastalco, 2017). This monitoring report documents and presents the results of semiannual groundwater monitoring activities at the Landfill performed during the third quarter of 2022 in accordance with the Closed Landfill Groundwater Monitoring Plan (Monitoring Plan) (MFG, 2006; Appendix G in Exhibit E of the EC).

## 1.1 OVERVIEW

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The Landfill (formerly referred to as the Closed Aluminum Industrial Waste Landfill) was operated between 1983 and 1994 for the disposal of various types of non-hazardous industrial wastes including fluoridated wastes, carbon wastes, refractory wastes, and miscellaneous trash. The last permit issued by the Maryland Department of the Environment (MDE) for the Landfill prior to its closure in 1994 was Refuse Disposal Permit No. 90-IW-0042 (dated June 12, 1990). Post-closure monitoring and maintenance of the Landfill are required per the regulations set forth in the Code of Maryland (COMAR) 26.04.07.22. Groundwater monitoring as well as routine inspections and maintenance of the Landfill have been performed since it was closed.

The Monitoring Plan (MFG, 2006) was developed to formalize the post-closure monitoring and maintenance program for the Landfill. Groundwater monitoring has continued semiannually. The EC was executed in December 2017 placing restrictions on land and groundwater use as a means of managing contamination and protecting human health and the environment during current and future activities/redevelopment. The Site Management Plan (SMP), a component of the EC, addresses the remediation and future management of known and potential environmental concerns associated with the operations at the former facility, including contaminated groundwater and surface water. In the Activity and Use Limitations (Paragraph 6) of the EC, the property owner, now Quantum, is required to maintain compliance with landfill post-closure care including groundwater monitoring and reporting in accordance with the Monitoring Plan (MFG, 2006), which is attached to the Post-Closure Care Plan as Exhibit E of the EC.

The reports will contain the following:

1. A complete copy of the laboratory data;

2. A comparison of the results against the fluoride Maximum Contaminant Level (MCL);
3. Concentration maps depicting total fluoride concentrations analyzed during the semiannual monitoring event;
4. Graphs showing the concentration of total fluoride at each well;
5. Graphs depicting historical concentration trends for total fluoride;
6. A summary of all groundwater elevations measured at the wells included in the monitoring plan; and
7. A narrative discussion concerning background information, sampling procedures, and results/trends, etc.

This report contains the above items for monitoring performed during the third quarter of 2022.

## **1.2 DOCUMENT ORGANIZATION**

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Section 2 provides a description of the site setting, and Section 3 describes the tasks that were performed to monitor groundwater quality in the vicinity of the Landfill. Section 4 provides results and associated conclusions.



## 2.0 SITE SETTING

### 2.1 TOPOGRAPHY

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The Quantum Frederick site (formerly known as the Eastalco site) is located in the Frederick Valley, a synclinal structure characterized by gently rolling topography. Natural elevations at the site range from approximately 300 feet above sea level in the low areas to about 400 feet in the higher areas (Figure 1-1). The Landfill is located in the southwestern corner of the former plant smelting operations area and is separate from the North Industrial Landfill (North Landfill) as shown on Figure 2-1.

### 2.2 SURFACE WATER

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The site is drained by Tuscarora Creek, a tributary of the Potomac River, located east of the former plant. There is also an unnamed tributary to the west that flows south to join Tuscarora Creek. Tuscarora Creek then flows south into the Potomac River. Several man-made drainage ditches flow into Tuscarora Creek or the unnamed tributary.

### 2.3 GEOLOGY

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#### 2.3.1 Regional Geology

The Quantum Frederick facility is located in the southwest corner of a geologic feature known as the Frederick Valley. The valley is the topographic expression of a subsurface asymmetrical synclinorium composed of folded Cambro-Ordovician carbonates and siltstones of the Araby, Frederick, and Grove Formations. The elongated western limb of the synclinorium is truncated by an angular unconformity and overlain by Triassic "redbed" sedimentary strata of the Newark Group, which includes the New Oxford Formation and the Gettysburg Shale. The eastern limb of the synclinorium is foreshortened and in some cases overturned. It is bounded to the east by Precambrian metasedimentary rocks of the Western Piedmont.

The Quantum property straddles the contact between the Triassic siltstones, sandstones, and shale of the New Oxford Formation and the Cambrian limestone of the Adamstown member of the Frederick Formation. The bedrock surface expression of this contact trends north-northeast by south-southwest and dips west-northwest. On the Quantum property, it is located approximately 200 feet southeast of the North Landfill. From east to west across the Quantum property, the depth to the contact between the New Oxford and Frederick Formations varies from zero feet at the bedrock surface contact to 90 feet beneath the North Landfill. The contact surface is irregular, reflecting the erosional nature of the angular unconformity, which defines the contact between these formations in the subsurface, but, in general, the depth to the contact increases westward.



The Frederick Formation is a thin-bedded, laminated limestone with argillaceous partings and shaley zones. Estimated thickness is approximately 500 feet. The Frederick Formation has been subdivided into three members designated in ascending order: Spring Station, Adamstown, and Lime Kiln. The Adamstown member underlies the south and eastern portion of the former plant site and consists of laminated, fine grained, thinly bedded, argillaceous, dark gray limestone. The beds have a north-northeast strike and dip about 40° to the east.

The New Oxford Formation consists of interbedded red and gray arkosic sandstone, red shale, and siltstone. A distinctive limestone/quartz pebble conglomerate at the base of the unit displays a mottled red and gray texture. Sandstone beds in this formation are lenticular and prone to pinching out over short distances. The total estimated thickness of the unit is 4,500 feet. In the vicinity of Quantum's property, beds of the New Oxford Formation underlie the western and northern portion of the property. The strike of these beds is north to south and dip is to the west at 5°.

### 2.3.2 Site Geology

Based on lithologic logs generated during installation of soil borings and monitoring wells at the facility, unconsolidated materials above bedrock (overburden) are composed of clay and silt with varying amounts of sand, gravel, and angular rock fragments. Near surface materials are composed of reddish orange to reddish brown, dense, compact silty clay, with occasional sandstone and shale fragments, gravel, and cobbles. Poorly graded limestone gravel is present at the surface at some locations.

Site boring logs indicate that deeper unconsolidated materials (weathered bedrock) are composed of reddish brown to yellowish orange silt, clay, and occasional zones of clayey gravel. The logs note relict bedding (inclined 20 to 30 degrees from horizontal), micaceous inclusions, and quartzite fragments. Several past reports identify this unconsolidated residual material as saprolite; however, saprolite is derived from the in-situ weathering of igneous or metamorphic material retaining many of the visual characteristics of the parent rock. The deeper unconsolidated materials at the site retain some of the characteristics of the parent rock; but they are derived from in-situ weathering of limestone. The thickness of this highly weathered limestone, which grades into the overlying silty clay unit, varies but averages about 5 feet.

The Quantum property is located within the northeast-trending Frederick syncline. According to geologic maps prepared by the Maryland Geological Survey (MGS), two bedrock formations are present beneath the site: the New Oxford and Frederick Limestone Formations (MGS, 1968). The New Oxford Formation is composed of interbedded red and gray arkosic sandstone, red shale and siltstone, with a basal conglomerate containing a red and gray calcareous matrix (MGS, 1981). The New Oxford Formation overlies the Frederick Formation. To the northwest of the Substation Area, the New Oxford Formation is reportedly about 90 feet thick (beneath the North Landfill) and thicknesses of the New Oxford increase to the west (Atlantic, 1996). The Upper Cambrian bedrock beneath the

eastern portion of the Site is the Frederick Limestone Formation, which consists of highly jointed and fractured, thinly bedded, argillaceous limestone with minor shale (MGS, 1981).

The Monitoring Plan (MFG, 2006) contains a topographic map of the bedrock surface from the western portion of the former plant to the southern property boundary that was developed based on survey data and logs of existing wells and former construction borings. The undulating bedrock surface slopes from north to south with a bedrock trough that starts north of the Landfill and appears to extend southward to the property boundary.

## **2.4 HYDROGEOLOGY**

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### **2.4.1 Regional Hydrogeology**

Information on the regional hydrogeology was obtained from the Groundwater Atlas of the United States published by the United States Geological Survey (USGS, 1997). In the Frederick Valley area, significant sources of groundwater exist in the carbonate rock aquifers. The Frederick Limestone, which underlies most of the site, has a typical well yield of 120 to 170 gallons per minute (GPM) and can yield up to 275 GPM in some areas. The carbonate rocks of the Piedmont have virtually no primary porosity, and water in these rocks moves through secondary openings such as fractures, bedding planes, joints and faults. Water moving through the secondary openings dissolves the carbonate rock and forms dissolution channels to create an interconnected network of openings, greatly increasing the porosity of the rock. Most of the water obtained from bedrock in this area is found in fractures and dissolution channels.

### **2.4.2 Site Hydrogeology**

The groundwater system beneath the site consists of two water-bearing units: an overburden water bearing zone and a bedrock water-bearing zone. Based on lithologic descriptions of the overburden materials, most groundwater flow likely occurs in the highly fractured zone (weathered bedrock) located directly above the competent bedrock (Atlantic, 1996). Groundwater movement in bedrock beneath the site typically occurs through fractures. In both the overburden and bedrock zones, the general direction of horizontal groundwater flow across the former plant is toward the southeast (MFG, 2006).

## 3.0 MONITORING PROGRAM

### 3.1 MONITORING POINTS AND FREQUENCY

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There are seven monitoring wells that surround the Landfill (Figure 3-1) included in the monitoring program. The wells are: MW-4 to the north; MW-6 to the west; MW-25, -66, -67, and -68 to the south; and MW-26 to the east. The frequency of groundwater quality monitoring (sampling) performed per the Monitoring Plan (MFG, 2006), is semiannually for MW-66, -67, and -68 (first and third calendar year quarters) and annually for MW-4, -6, -25, and -26 (third calendar year quarter). A round of synoptic groundwater level measurements is conducted from all monitoring wells during each sampling event.

For the second semiannual event of 2022, groundwater levels were measured on September 26, 2022, from all wells, and groundwater samples were collected on September 27 through September 29, 2022, at all seven wells.

### 3.2 SAMPLING AND ANALYSIS

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Groundwater samples were collected in accordance with the standard operating procedures (SOPs) appended to the Monitoring Plan (MFG, 2006). Field measurements included water level, pH, conductivity, dissolved oxygen, turbidity, oxidation-reduction potential, and temperature.

The samples were submitted to Eurofins Lancaster Laboratories Environmental for the analysis of fluoride with a Practical Quantitation Limit (PQL) set at 0.1 milligrams per liter (mg/L) per the Monitoring Plan.

## 4.0 RESULTS AND CONCLUSIONS

### 4.1 GROUNDWATER FLOW

Groundwater elevations based on depth to water measurements are provided in Table 4-1. Figure 4-1 is a map depicting groundwater elevations at the Landfill wells based on data recorded during the September 2022 event. In general, groundwater beneath the landfill flows in a southeasterly direction. A detailed evaluation of groundwater flow in the overburden and bedrock zones across the former plant can be found in the Site-Wide Investigation Report (MFG, 2005) which was submitted to MDE in October 2005.

### 4.2 GROUNDWATER QUALITY

The results of the groundwater field measurements are shown in Table 4-1. The results of the fluoride analyses performed on the groundwater samples collected during the third quarter of 2022 are provided in Table 4-2, and the results are summarized on Figure 4-2. Total fluoride was detected at concentrations above the MCL of 4 mg/L in five of the seven wells sampled during the September 2022 sampling event with fluoride concentrations in all wells ranging from 2.4 mg/L (MW-4) to 19.5 mg/L (MW-68).

Figure 4-3 shows post-closure temporal total fluoride concentration trends for the Landfill wells (the tabulated historical data summary can be found in Appendix B). The trend chart provides concentrations from 1994 (when the Landfill was closed) to the present. While there are fluctuations in the concentration trends of the downgradient wells, the overall concentrations declined after the Landfill was closed in 1994. Fluoride concentrations at most of the monitored wells have been relatively stable since 2003; whereas the concentrations in MW-68 have slightly declined over the last 5 years. There was a slight increase in the MW-68 concentration during the September 2020 sampling event with a decrease back to historical concentrations during the March 2021 sampling event; during the September 2022 sampling event the concentration has remained consistent with historical concentrations (between 15 and 20 mg/L).

As discussed in the Monitoring Plan (MFG, 2006), a site-wide groundwater investigation concluded that the Landfill is not a significant contributor to the fluoride plume, which is instead related to former upgradient sources (i.e., the former North Pond and possibly the former South Pond which have been removed/backfilled). Sitewide fluoride concentrations will continue to be monitored under the EC.

## 5.0 REFERENCES

Atlantic Environmental Services, Inc., 1996. *Eastalco Aluminum Company, Aquifer Characteristics Investigation*. May.

Eastalco, 2017. Environmental Covenant, 5601 Manor Woods Road, Frederick, Maryland 21701. Deed References: Liber D.D.L. No. 2371, Folio 341; Liber 2531. Folio 347; Tax Parcels: District: 01, Account Number: 000152, 005383, and 005405. December 12.

Maryland Geological Survey (MGS), 1968. *Geologic Maps of Maryland, Frederick County*. Detail 12.

Maryland Geological Survey (MGS), 1981. *A Brief Description of the Geology of Maryland*.

MFG, 2005. *Site-Wide Investigation Report, Alcoa Eastalco Works*. October.

MFG, 2006. *Closed Landfill Groundwater Monitoring Plan. Eastalco Aluminum Company*. May.

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## TABLES

**Table 4-1**

**September 2022  
Field Measurements**

Quantum Maryland, LLC  
Closed South Industrial Waste Landfill  
Frederick, Maryland

Well ID	Date of Water Level Measurement	TOC Elevation (ft MSL)	Depth to Water (ft)	Groundwater Elevation (ft MSL)	Sample Date	pH (s.u.)	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTUs)	Temperature (°C)	ORP (mV)
MW-4	9/26/2022	331.27	19.62	311.65	9/27/2022	7.27	0.681	1.55	9.55 <sup>(1)</sup>	15.95	120
MW-6	9/26/2022	323.66	14.85	308.81	9/29/2022	6.58	1.15	1.40	89.0	15.54	-97
MW-25	9/26/2022	321.92	18.28	303.64	9/28/2022	7.85	1.10	3.99	66.9	17.59	172
MW-26	9/26/2022	324.49	18.42	306.07	9/27/2022	7.63	0.742	4.81	19.5 <sup>(1)</sup>	16.52	104
MW-66	9/26/2022	327.26	22.20	305.06	9/27/2022	8.03	1.11	3.11	4.9 <sup>(1)</sup>	16.32	86
MW-67	9/26/2022	326.74	23.26	303.48	9/27/2022	7.62	0.917	4.36	63.0 <sup>(1)</sup>	15.99	219
MW-68	9/26/2022	328.12	24.11	304.01	9/27/2022	7.63	1.41	5.31	14.7 <sup>(1)</sup>	15.07	164

**Notes:**

- TOC Top of casing
- ORP Oxidation-reduction potential
- ft Feet
- ft MSL Feet above Mean Sea Level
- s.u. Standard units
- mS/cm Millisiemens per centimeter
- NTUs Nephelometric Turbidity Units
- mV Millivolts
- mg/L Milligrams per Liter
- °C Degrees Centigrade
- NI Not included in sampling event
- NA Not applicable
- <sup>(1)</sup> Horiba U52 Used for Turbidity Measurements



**Table 4-2**  
**September 2022 South Landfill**  
**Groundwater Analytical Results**

Quantum Maryland, LLC  
 Closed South Industrial Waste Landfill  
 Frederick, Maryland

Well ID	Fluoride (mg/L)
<b>MCL</b> <sup>(1)</sup>	<b>4</b>
MW-4	<b>2.4</b>
MW-6	<b>2.6</b>
MW-25	<b>14</b>
MW-26	<b>4.3</b>
MW-66	<b>9.6</b>
MW-67	<b>7.1</b>
MW-68	<b>20</b>
MW-68 DUP <sup>(2)</sup>	<b>19</b>

Notes:

All results are in milligrams/liter (mg/L).

<sup>(1)</sup> EPA Maximum Contaminant Level

<sup>(2)</sup> Duplicate sample from MW-68

**BOLD** indicates detected value

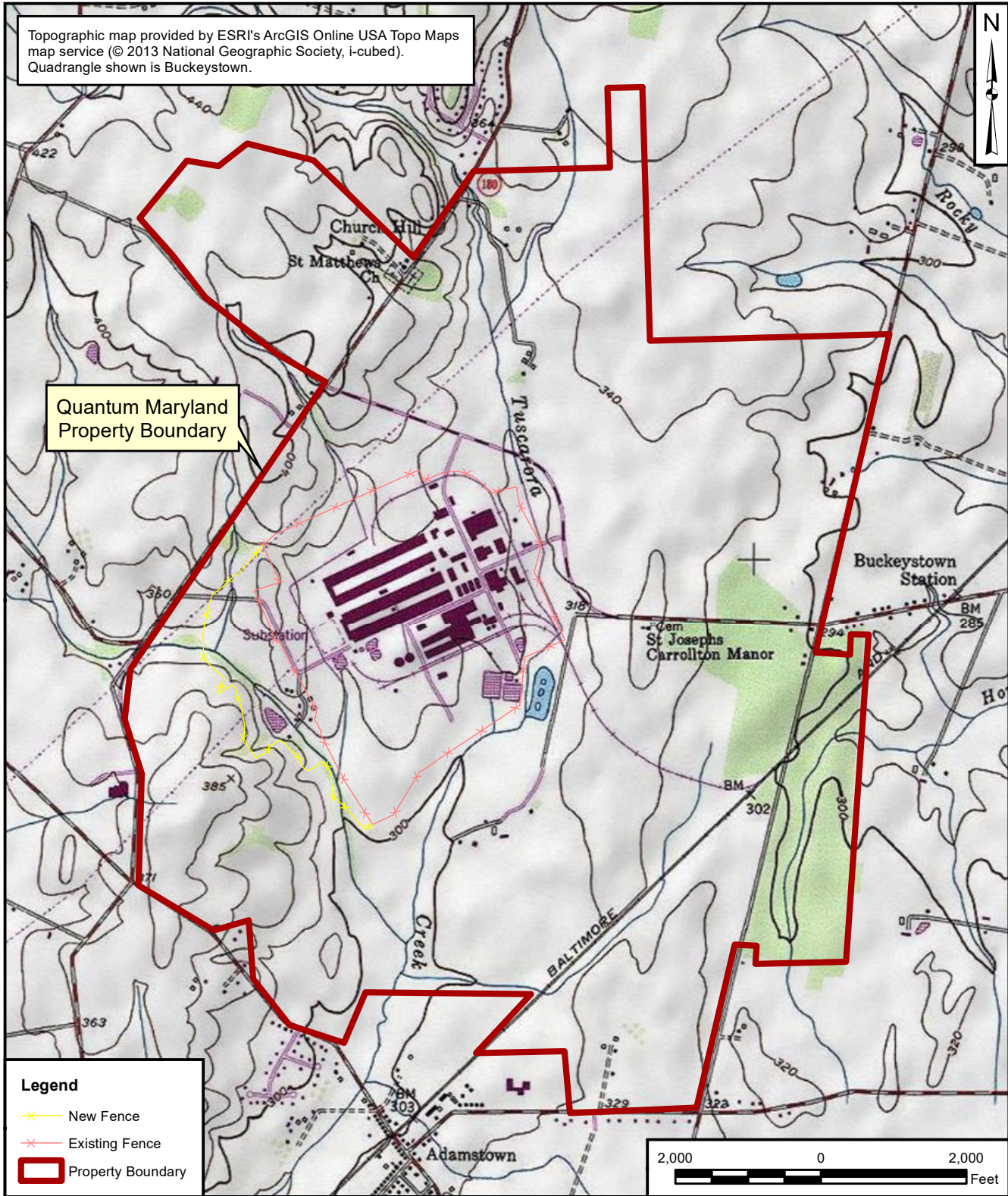
indicates concentration above MCL

## FIGURES

Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).  
Quadrangle shown is Buckeystown.

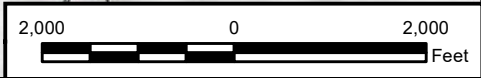


Quantum Maryland  
Property Boundary



**Legend**

- New Fence
- Existing Fence
- Property Boundary



SITE LOCATION  
QUANTUM MARYLAND  
FREDERICK, MARYLAND

DRAWN BY: J. ZAMUDIO 06/03/22  
CHECKED BY: D. MOORE 06/03/22  
APPROVED BY: D. MOORE 06/03/22  
CONTRACT NUMBER: 112C09729

FIGURE NUMBER  
1-1

REV  
0

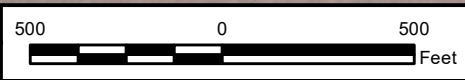


Aerial photograph provided by ESRI's ArcGIS Online MD iMAP, DoIT (© 2020 ESRI and its data suppliers).



**Legend**

- New Fence
- Existing Fence
- Closed Industrial Landfill



LANDFILL LOCATION MAP  
QUANTUM MARYLAND  
FREDERICK, MARYLAND

DRAWN BY: J. ZAMUDIO 06/03/22  
CHECKED BY: M. SIMCIK 06/03/22  
APPROVED BY: D. MOORE 06/03/22  
CONTRACT NUMBER: 112C09729

FIGURE NUMBER	REV
2-1	0

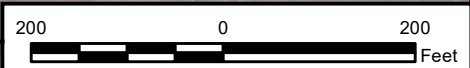


Aerial photograph provided by ESRI's ArcGIS Online MD iMAP, DoIT (© 2020 ESRI and its data suppliers).



**Legend**

-  Bedrock Monitoring Well
-  Overburden Monitoring Well
-  Overburden/Bedrock Monitoring Well
-  Existing Fence
-  Closed Industrial Landfill



MONITORING WELLS  
SOUTH INDUSTRIAL LANDFILL  
QUANTUM MARYLAND  
FREDERICK, MARYLAND

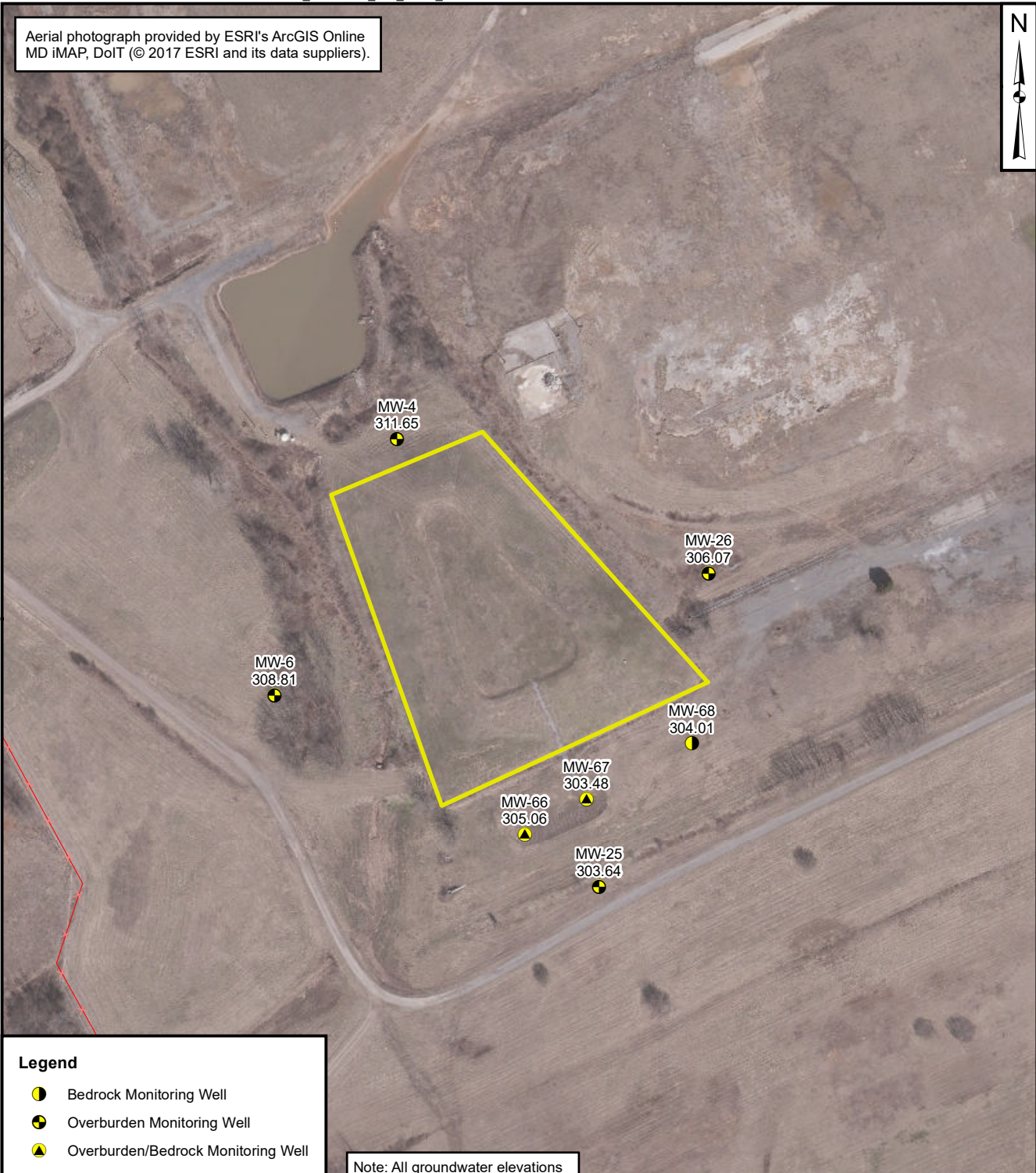
DRAWN BY: J. ENGLISH 04/17/20  
CHECKED BY: M. SIMCIK 06/03/22  
APPROVED BY: D. MOORE 06/03/22

CONTRACT NUMBER: 112C09729

FIGURE NUMBER  
3-1

REV  
0

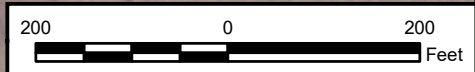
Aerial photograph provided by ESRI's ArcGIS Online MD iMAP, DoIT (© 2017 ESRI and its data suppliers).



**Legend**

- Bedrock Monitoring Well
- Overburden Monitoring Well
- Overburden/Bedrock Monitoring Well
- Existing Fence
- Closed Industrial Landfill

Note: All groundwater elevations are presented as ft msl (feet above mean sea level).



SOUTH INDUSTRIAL LANDFILL  
 MONITORING WELLS GROUNDWATER ELEVATIONS -  
 THIRD QUARTER 2022  
 QUANTUM MARYLAND  
 FREDERICK, MARYLAND

DRAWN BY: J. ZAMUDIO 11/18/22  
 CHECKED BY: M. SIMCIK 11/18/22  
 APPROVED BY: D. MOORE 11/18/22

CONTRACT NUMBER: 112C09729

FIGURE NUMBER	4-1
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REV	0
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Aerial photograph provided by ESRI's ArcGIS Online MD iMAP, DoIT (© 2017 ESRI and its data suppliers).



**Legend**

- Bedrock Monitoring Well
- Overburden Monitoring Well
- Overburden/Bedrock Monitoring Well

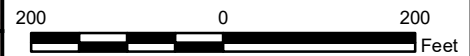
Existing Fence

Closed Industrial Landfill

MW-67 Well ID  
7.1 Fluoride Concentration (mg/L)

\* Duplicate sample collected, average result shown.

Note: \* Parent sample 20, duplicate sample 19.



SOUTH INDUSTRIAL LANDFILL  
MONITORING WELLS FLUORIDE CONCENTRATIONS -  
THIRD QUARTER 2022  
QUANTUM MARYLAND  
FREDERICK, MARYLAND

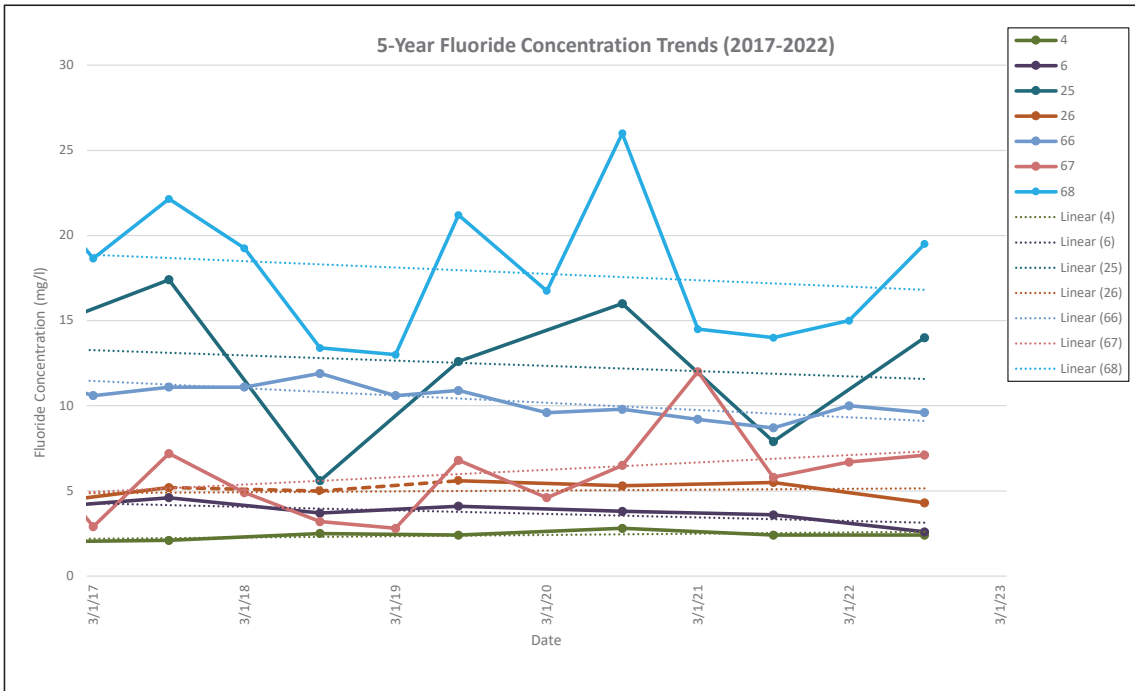
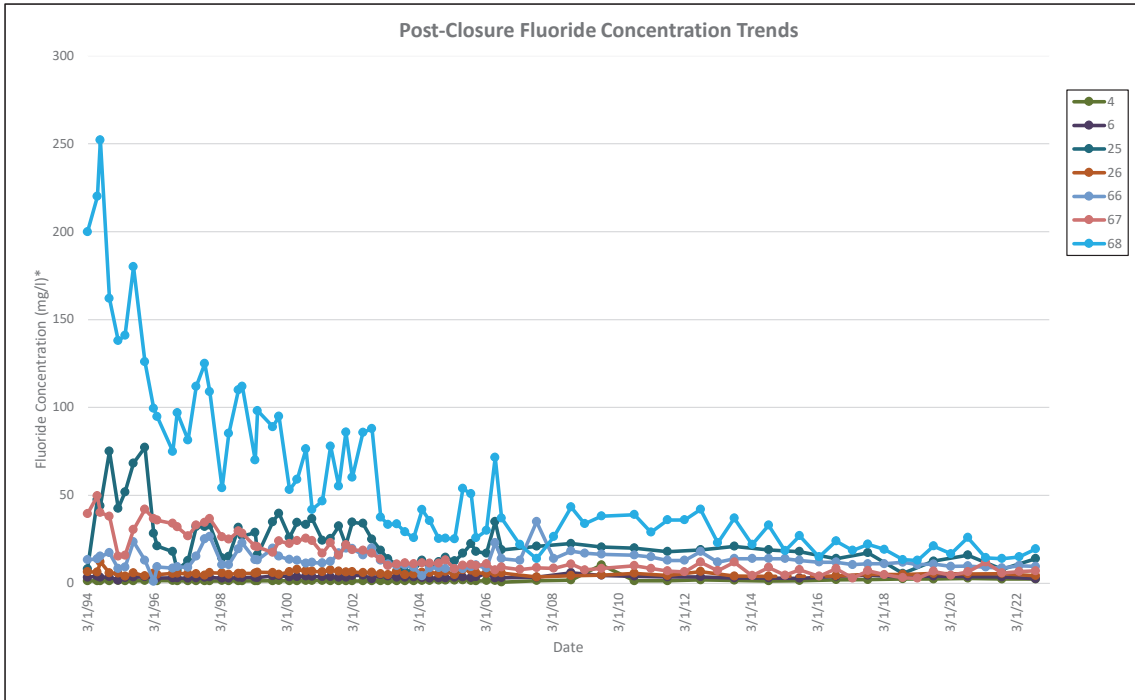
DRAWN BY: J. ZAMUDIO 11/18/22  
CHECKED BY: M. SIMCIK 12/09/22  
APPROVED BY: D. MOORE 12/09/22

CONTRACT NUMBER: 112C09729

FIGURE NUMBER  
4-2

REV  
0





**Figure 4-3**  
**Fluoride Concentration Trends in**  
**South Industrial Waste Landfill Monitoring Wells**  
**Quantum Maryland, LLC**

## APPENDIX A

### GROUNDWATER ANALYTICAL DATA LABORATORY REPORTS

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-99556-1  
Client Project/Site: EastAlco WW

For:  
Tetra Tech, Inc.  
Foster Plaza VII  
661 Anderson Drive  
Foster Plaza 7 Suite 200  
Pittsburgh, Pennsylvania 15220

Attn: Dan Drzik



---

Authorized for release by:  
10/11/2022 8:15:05 PM

Stephen Gordon, Senior Project Manager  
(412)525-0071  
[Stephen.Gordon@et.eurofinsus.com](mailto:Stephen.Gordon@et.eurofinsus.com)

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

A handwritten signature in black ink, appearing to read "Stephen Gordon".

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Stephen Gordon  
Senior Project Manager  
10/11/2022 8:15:05 PM



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# Definitions/Glossary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

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**Job ID: 410-99556-1**

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**Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC**

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## Narrative

### Job Narrative 410-99556-1

#### Receipt

The samples were received on 9/27/2022 7:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.2°C

#### Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): RW-29DUP-0922 (410-99556-2). The container labels list 09:15, while the COC lists 00:00. The client was contacted, and the lab was instructed to <EXPLANATION\_REQUIRED>.

#### HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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# Detection Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

## Client Sample ID: RW-29-0922

## Lab Sample ID: 410-99556-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	24		2.0	0.90	mg/L	10		EPA 300.0 R2.1	Total/NA

## Client Sample ID: RW-29DUP-0922

## Lab Sample ID: 410-99556-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	23		2.0	0.90	mg/L	10		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-108-0922

## Lab Sample ID: 410-99556-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	11		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-62-0922

## Lab Sample ID: 410-99556-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.4		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-68-0922

## Lab Sample ID: 410-99556-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	20		2.0	0.90	mg/L	10		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-68DUP-0922

## Lab Sample ID: 410-99556-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	19		2.0	0.90	mg/L	10		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-67-0922

## Lab Sample ID: 410-99556-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	7.1		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-66-0922

## Lab Sample ID: 410-99556-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	9.6		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-45-0922

## Lab Sample ID: 410-99556-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	26		2.0	0.90	mg/L	10		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-103-0922

## Lab Sample ID: 410-99556-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.9		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-4-0922

## Lab Sample ID: 410-99556-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.4		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

**Client Sample ID: RW-29-0922**

**Lab Sample ID: 410-99556-1**

Date Collected: 09/27/22 09:15

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	24		2.0	0.90	mg/L			10/10/22 17:45	10

**Client Sample ID: RW-29DUP-0922**

**Lab Sample ID: 410-99556-2**

Date Collected: 09/27/22 00:00

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	23		2.0	0.90	mg/L			10/10/22 17:24	10

**Client Sample ID: MW-108-0922**

**Lab Sample ID: 410-99556-3**

Date Collected: 09/27/22 10:45

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	11		1.0	0.45	mg/L			10/08/22 13:18	5

**Client Sample ID: MW-62-0922**

**Lab Sample ID: 410-99556-4**

Date Collected: 09/27/22 12:20

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.4		1.0	0.45	mg/L			10/08/22 13:29	5

**Client Sample ID: MW-68-0922**

**Lab Sample ID: 410-99556-5**

Date Collected: 09/27/22 08:55

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	20		2.0	0.90	mg/L			10/10/22 17:02	10

**Client Sample ID: MW-68DUP-0922**

**Lab Sample ID: 410-99556-6**

Date Collected: 09/27/22 00:00

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	19		2.0	0.90	mg/L			10/10/22 17:13	10

**Client Sample ID: MW-67-0922**

**Lab Sample ID: 410-99556-7**

Date Collected: 09/27/22 09:56

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	7.1		1.0	0.45	mg/L			10/08/22 14:44	5

# Client Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

**Client Sample ID: MW-66-0922**

**Lab Sample ID: 410-99556-8**

Date Collected: 09/27/22 10:29

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	9.6		1.0	0.45	mg/L			10/08/22 14:55	5

**Client Sample ID: MW-45-0922**

**Lab Sample ID: 410-99556-9**

Date Collected: 09/27/22 14:13

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	26		2.0	0.90	mg/L			10/10/22 17:35	10

**Client Sample ID: MW-103-0922**

**Lab Sample ID: 410-99556-10**

Date Collected: 09/27/22 14:25

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.9		1.0	0.45	mg/L			10/08/22 15:16	5

**Client Sample ID: MW-4-0922**

**Lab Sample ID: 410-99556-11**

Date Collected: 09/27/22 15:03

Matrix: Water

Date Received: 09/27/22 19:30

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.4		1.0	0.45	mg/L			10/08/22 15:27	5

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 410-304548/5**  
**Matrix: Water**  
**Analysis Batch: 304548**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/08/22 11:30	1

**Lab Sample ID: LCS 410-304548/3**  
**Matrix: Water**  
**Analysis Batch: 304548**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.711		mg/L		95	90 - 110

**Lab Sample ID: LCSD 410-304548/4**  
**Matrix: Water**  
**Analysis Batch: 304548**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.743		mg/L		99	90 - 110	4	20

**Lab Sample ID: 410-99556-11 MS**  
**Matrix: Water**  
**Analysis Batch: 304548**

**Client Sample ID: MW-4-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.4		2.50	5.15		mg/L		109	90 - 110

**Lab Sample ID: 410-99556-11 DU**  
**Matrix: Water**  
**Analysis Batch: 304548**

**Client Sample ID: MW-4-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	2.4		2.43		mg/L		0.3	15

**Lab Sample ID: MB 410-305226/5**  
**Matrix: Water**  
**Analysis Batch: 305226**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/10/22 13:27	1

**Lab Sample ID: LCS 410-305226/3**  
**Matrix: Water**  
**Analysis Batch: 305226**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.758		mg/L		101	90 - 110

**Lab Sample ID: LCSD 410-305226/4**  
**Matrix: Water**  
**Analysis Batch: 305226**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.764		mg/L		102	90 - 110	1	20

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Association Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

## HPLC/IC

### Analysis Batch: 304548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99556-3	MW-108-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-4	MW-62-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-7	MW-67-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-8	MW-66-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-10	MW-103-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-11	MW-4-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-304548/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-304548/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-304548/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
410-99556-11 MS	MW-4-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-11 DU	MW-4-0922	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 305226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99556-1	RW-29-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-2	RW-29DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-5	MW-68-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-6	MW-68DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99556-9	MW-45-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-305226/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-305226/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-305226/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

# Lab Chronicle

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

**Client Sample ID: RW-29-0922**

**Lab Sample ID: 410-99556-1**

Date Collected: 09/27/22 09:15

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		10	305226	L4QM	ELLE	10/10/22 17:45

**Client Sample ID: RW-29DUP-0922**

**Lab Sample ID: 410-99556-2**

Date Collected: 09/27/22 00:00

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		10	305226	L4QM	ELLE	10/10/22 17:24

**Client Sample ID: MW-108-0922**

**Lab Sample ID: 410-99556-3**

Date Collected: 09/27/22 10:45

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 13:18

**Client Sample ID: MW-62-0922**

**Lab Sample ID: 410-99556-4**

Date Collected: 09/27/22 12:20

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 13:29

**Client Sample ID: MW-68-0922**

**Lab Sample ID: 410-99556-5**

Date Collected: 09/27/22 08:55

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		10	305226	L4QM	ELLE	10/10/22 17:02

**Client Sample ID: MW-68DUP-0922**

**Lab Sample ID: 410-99556-6**

Date Collected: 09/27/22 00:00

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		10	305226	L4QM	ELLE	10/10/22 17:13

**Client Sample ID: MW-67-0922**

**Lab Sample ID: 410-99556-7**

Date Collected: 09/27/22 09:56

Matrix: Water

Date Received: 09/27/22 19:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 14:44

# Lab Chronicle

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

**Client Sample ID: MW-66-0922**

**Lab Sample ID: 410-99556-8**

**Date Collected: 09/27/22 10:29**

**Matrix: Water**

**Date Received: 09/27/22 19:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 14:55

**Client Sample ID: MW-45-0922**

**Lab Sample ID: 410-99556-9**

**Date Collected: 09/27/22 14:13**

**Matrix: Water**

**Date Received: 09/27/22 19:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		10	305226	L4QM	ELLE	10/10/22 17:35

**Client Sample ID: MW-103-0922**

**Lab Sample ID: 410-99556-10**

**Date Collected: 09/27/22 14:25**

**Matrix: Water**

**Date Received: 09/27/22 19:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 15:16

**Client Sample ID: MW-4-0922**

**Lab Sample ID: 410-99556-11**

**Date Collected: 09/27/22 15:03**

**Matrix: Water**

**Date Received: 09/27/22 19:30**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	304548	L4QM	ELLE	10/08/22 15:27

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Accreditation/Certification Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

<u>Authority</u>	<u>Program</u>	<u>Identification Number</u>	<u>Expiration Date</u>
Maryland	State	100	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

<u>Analysis Method</u>	<u>Prep Method</u>	<u>Matrix</u>	<u>Analyte</u>
EPA 300.0 R2.1		Water	Fluoride



# Method Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

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Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE

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**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99556-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-99556-1	RW-29-0922	Water	09/27/22 09:15	09/27/22 19:30
410-99556-2	RW-29DUP-0922	Water	09/27/22 00:00	09/27/22 19:30
410-99556-3	MW-108-0922	Water	09/27/22 10:45	09/27/22 19:30
410-99556-4	MW-62-0922	Water	09/27/22 12:20	09/27/22 19:30
410-99556-5	MW-68-0922	Water	09/27/22 08:55	09/27/22 19:30
410-99556-6	MW-68DUP-0922	Water	09/27/22 00:00	09/27/22 19:30
410-99556-7	MW-67-0922	Water	09/27/22 09:56	09/27/22 19:30
410-99556-8	MW-66-0922	Water	09/27/22 10:29	09/27/22 19:30
410-99556-9	MW-45-0922	Water	09/27/22 14:13	09/27/22 19:30
410-99556-10	MW-103-0922	Water	09/27/22 14:25	09/27/22 19:30
410-99556-11	MW-4-0922	Water	09/27/22 15:03	09/27/22 19:30

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410-99556 Chain of Custody

ries Environm

# Chain of Custody Record



Environment Testing America

Sampler <i>Mullis/Musser</i>		Lab PM Gordon, Stephen J		Carrier Tracking No(s)		COC No. 410-64743-18583 2									
Phone <i>410-279-2700</i>		E-Mail Stephen.Gordon@et.eurofinsus.com		State of Origin <i>MD</i>		Page <i>2 of 1 of 1</i>									
Client Contact Josh Mullis		PWSID		Analysis Requested				Job #							
Company Tetra Tech, Inc.		Due Date Requested:		<table border="1"> <tr><td>300_ORGFM_28D - Flouride Only</td></tr> <tr><td>300_ORGFM_28D, 300_ORGFMS</td></tr> <tr><td>2320B, 2510B, 2540C_SingleDry, 9040B</td></tr> <tr><td>SM2100B - Turbidity</td></tr> <tr><td>6020B, 7470A</td></tr> <tr><td>1677_Free - Free Cyanide</td></tr> </table>				300_ORGFM_28D - Flouride Only	300_ORGFM_28D, 300_ORGFMS	2320B, 2510B, 2540C_SingleDry, 9040B	SM2100B - Turbidity	6020B, 7470A	1677_Free - Free Cyanide	Preservation Codes:	
300_ORGFM_28D - Flouride Only															
300_ORGFM_28D, 300_ORGFMS															
2320B, 2510B, 2540C_SingleDry, 9040B															
SM2100B - Turbidity															
6020B, 7470A															
1677_Free - Free Cyanide															
Address: 20251 Century Blvd Suite 200		TAT Requested (days): <i>Standard</i>		A - HCL		M - Hexane									
City Germantown		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		B - NaOH		N - None									
State, Zip MD, 20874		PO #: 1188904		C - Zn Acetate		O - AsNaO2									
Phone 412-921-8277(Tel)		WO #:		D - Nitric Acid		P - Na2O4S									
Email Josh.Mullis@tetratech.com		Project # 41001054		E - NaHSO4		Q - Na2SO3									
Project Name EastAlco WW		SSOV#:		F - MeOH		R - Na2S2O3									
Site		Sample Identification		G - Amchlor		S - H2SO4									
		Sample Date		H - Ascorbic Acid		T - TSP Dodecahydrate									
		Sample Time		I - Ice		U - Acetone									
		Sample Type (C=comp, G=grab)		J - DI Water		V - MCAA									
		Matrix (W=water, S=solid, O=water/oil, BT=Tissue, A=Air)		K - EDTA		W - pH 4-5									
				L - EDA		Y - Trizma									
						Z - other (specify)									
						Other:									
						Special Instructions/Note:									
MW-107 <i>RW-29-0922</i>		<i>9/27/22</i>		<i>0915</i>		<i>G</i>		Water							
MW-108 <i>RW-29DUP-0922</i>				<i>0000</i>				Water							
MW-4 <i>MW-108-0922</i>				<i>1045</i>				Water							
MW-6 <i>MW-62-0922</i>				<i>1220</i>				Water							
MW-25 <i>MW-68-0922</i>				<i>0855</i>				Water							
MW-26 <i>MW-68DUP-0922</i>				<i>0000</i>				Water							
MW-68 <i>MW-67-0922</i>				<i>0956</i>				Water							
MW-68DUP <i>MW-66-0922</i>				<i>1029</i>				Water							
MW-66 <i>MW-45-0922</i>				<i>1413</i>				Water							
MW-67 <i>Jr MW-108 MW-103-0922</i>				<i>1425</i>				Water							
<i>MW-4-0922</i>				<i>1503</i>				Water							
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months											
Deliverable Requested: I, II, III, IV, Other (specify)				Special Instructions/QC Requirements:											
Empty Kit Relinquished by:		Date		Time:		Method of Shipment:									
Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/27/22</i>		Company: <i>ELLE</i>		Received by: <i>[Signature]</i>		Date/Time: <i>9/27/22 17:58</i>							
Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/27/22 19:10</i>		Company: <i>ELLE</i>		Received by: <i>[Signature]</i>		Date/Time: _____							
Relinquished by: <i>[Signature]</i>		Date/Time: _____		Company: _____		Received by: <i>[Signature]</i>		Date/Time: <i>9/27/22 19:30</i>							
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>0.2</i>											

# Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 410-99556-1

**Login Number: 99556**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Jeremiah, Cory T**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-99726-1  
Client Project/Site: EastAlco WW

**For:**

Tetra Tech, Inc.  
Foster Plaza VII  
661 Anderson Drive  
Foster Plaza 7 Suite 200  
Pittsburgh, Pennsylvania 15220

Attn: Dan Drzik



---

Authorized for release by:  
10/20/2022 8:02:01 AM

Stephen Gordon, Senior Project Manager  
(412)525-0071  
[Stephen.Gordon@et.eurofinsus.com](mailto:Stephen.Gordon@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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A handwritten signature in black ink, appearing to read "Stephen Gordon".

---

Stephen Gordon  
Senior Project Manager  
10/20/2022 8:02:01 AM



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# Definitions/Glossary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
cn	Refer to Case Narrative for further detail
F1	MS and/or MSD recovery exceeds control limits.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

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## Job ID: 410-99726-1

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### Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

#### Narrative

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#### Job Narrative 410-99726-1

#### Receipt

The samples were received on 9/28/2022 6:24 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.8°C

#### HPLC/IC

Method 300\_ORGFM\_28D: The continuing calibration verification (CCV) associated with batch 410-301680 recovered above the upper control limit for fluoride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: MW-64-0922 (410-99726-4), MW-76-0922 (410-99726-5) and MW-77-0922 (410-99726-6).

Method 300\_ORGFM\_28D: The laboratory control sample (LCS) for analytical batch 410-301680 recovered outside control limits for the following analytes: fluoride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### Metals

Method 6020B: The continuing calibration verification (CCV) associated with batch 410-305799 recovered above the upper control limit for Selenium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Client Sample ID: MW-25-0922

## Lab Sample ID: 410-99726-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	14		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-26-0922

## Lab Sample ID: 410-99726-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	4.3		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-13-0922

## Lab Sample ID: 410-99726-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.51	J	1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-64-0922

## Lab Sample ID: 410-99726-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrogen, Nitrate	3.3		0.55	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	6.1	J cn	7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	4.1	J cn	7.5	3.0	mg/L	5		EPA 300.0 R2.1	Total/NA
Aluminum	150		25	12	ug/L	1		6020B	Total/NA
Barium	0.040		0.0020	0.00075	mg/L	1		6020B	Total/NA
Beryllium	0.00034	J	0.00050	0.00012	mg/L	1		6020B	Total/NA
Cadmium	0.00015	J	0.00050	0.00015	mg/L	1		6020B	Total/NA
Chromium	0.0014	J	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.00021	J	0.00050	0.000071	mg/L	1		6020B	Total/NA
Nickel	0.0081		0.0010	0.00040	mg/L	1		6020B	Total/NA
Sodium	2.6		0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	3.0		1.0	1.0	NTU	1		2130B-2011	Total/NA
Specific Conductance	67		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	37		30	12	mg/L	1		2540C-2011	Total/NA
pH	5.6	HF	0.01	0.01	S.U.	1		9040B	Total/NA
Temperature	22.0	HF	0.01	0.01	Degrees C	1		9040B	Total/NA

## Client Sample ID: MW-76-0922

## Lab Sample ID: 410-99726-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.20		0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Nitrogen, Nitrate	3.1		0.55	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	24	cn	7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	3.6	J cn	7.5	3.0	mg/L	5		EPA 300.0 R2.1	Total/NA
Aluminum	610	cn	25	12	ug/L	1		6020B	Total/NA
Barium	0.027	cn	0.0020	0.00075	mg/L	1		6020B	Total/NA
Beryllium	0.00041	J cn	0.00050	0.00012	mg/L	1		6020B	Total/NA
Chromium	0.0034	cn	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.00031	J cn	0.00050	0.000071	mg/L	1		6020B	Total/NA
Nickel	0.0018	cn	0.0010	0.00040	mg/L	1		6020B	Total/NA
Sodium	5.7	cn	0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	10		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	45		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	180		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	100		30	12	mg/L	1		2540C-2011	Total/NA
pH	6.5	HF	0.01	0.01	S.U.	1		9040B	Total/NA
Temperature	21.9	HF	0.01	0.01	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Detection Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

**Client Sample ID: MW-77-0922**

**Lab Sample ID: 410-99726-6**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.15	J	0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Nitrogen, Nitrate	2.3		0.55	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	43	cn	7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	24	cn	7.5	3.0	mg/L	5		EPA 300.0 R2.1	Total/NA
Aluminum	42		25	12	ug/L	1		6020B	Total/NA
Barium	0.042		0.0020	0.00075	mg/L	1		6020B	Total/NA
Chromium	0.00087	J	0.0020	0.00033	mg/L	1		6020B	Total/NA
Sodium	14		0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	2.0		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	240		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	630		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	320		60	24	mg/L	1		2540C-2011	Total/NA
pH	7.3	HF	0.01	0.01	S.U.	1		9040B	Total/NA
Temperature	21.9	HF	0.01	0.01	Degrees C	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Client Sample ID: MW-25-0922

Lab Sample ID: 410-99726-1

Date Collected: 09/28/22 08:20

Matrix: Water

Date Received: 09/28/22 18:24

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	14		1.0	0.45	mg/L			10/10/22 18:18	5

## Client Sample ID: MW-26-0922

Lab Sample ID: 410-99726-2

Date Collected: 09/28/22 11:07

Matrix: Water

Date Received: 09/28/22 18:24

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	4.3		1.0	0.45	mg/L			10/10/22 19:01	5

## Client Sample ID: MW-13-0922

Lab Sample ID: 410-99726-3

Date Collected: 09/28/22 14:52

Matrix: Water

Date Received: 09/28/22 18:24

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.51	J	1.0	0.45	mg/L			10/10/22 18:50	5

## Client Sample ID: MW-64-0922

Lab Sample ID: 410-99726-4

Date Collected: 09/28/22 09:30

Matrix: Water

Date Received: 09/28/22 18:24

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/18/22 17:53	1
Nitrogen, Nitrate	3.3		0.55	0.25	mg/L			09/29/22 21:41	5
Sulfate	6.1	J cn	7.5	2.5	mg/L			09/29/22 21:41	5
Chloride	4.1	J cn	7.5	3.0	mg/L			09/29/22 21:41	5

### Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	150		25	12	ug/L		10/04/22 17:50	10/13/22 19:01	1
Arsenic	ND		0.0020	0.00068	mg/L		10/04/22 17:50	10/13/22 19:01	1
Barium	0.040		0.0020	0.00075	mg/L		10/04/22 17:50	10/13/22 19:01	1
Beryllium	0.00034	J	0.00050	0.00012	mg/L		10/04/22 17:50	10/13/22 19:01	1
Cadmium	0.00015	J	0.00050	0.00015	mg/L		10/04/22 17:50	10/13/22 19:01	1
Chromium	0.0014	J	0.0020	0.00033	mg/L		10/04/22 17:50	10/13/22 19:01	1
Lead	0.00021	J	0.00050	0.000071	mg/L		10/04/22 17:50	10/13/22 19:01	1
Nickel	0.0081		0.0010	0.00040	mg/L		10/04/22 17:50	10/13/22 19:01	1
Selenium	ND		0.0010	0.00028	mg/L		10/04/22 17:50	10/13/22 19:01	1
Sodium	2.6		0.20	0.090	mg/L		10/04/22 17:50	10/13/22 19:01	1

### Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:42	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	3.0		1.0	1.0	NTU			09/29/22 16:12	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	ND		8.0	8.0	mg/L			10/01/22 03:01	1

# Client Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

**Client Sample ID: MW-64-0922**

**Lab Sample ID: 410-99726-4**

Date Collected: 09/28/22 09:30

Matrix: Water

Date Received: 09/28/22 18:24

## General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B-2011)	67		5.0	1.7	umhos/cm			10/01/22 03:01	1
Total Dissolved Solids (SM 2540C-2011)	37		30	12	mg/L			09/29/22 07:44	1
pH (SW846 9040B)	5.6	HF	0.01	0.01	S.U.			10/01/22 03:01	1
Temperature (SW846 9040B)	22.0	HF	0.01	0.01	Degrees C			10/01/22 03:01	1

**Client Sample ID: MW-76-0922**

**Lab Sample ID: 410-99726-5**

Date Collected: 09/28/22 13:05

Matrix: Water

Date Received: 09/28/22 18:24

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.20		0.20	0.090	mg/L			10/18/22 18:04	1
Nitrogen, Nitrate	3.1		0.55	0.25	mg/L			09/29/22 22:01	5
Sulfate	24	cn	7.5	2.5	mg/L			09/29/22 22:01	5
Chloride	3.6	J cn	7.5	3.0	mg/L			09/29/22 22:01	5

## Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	610	cn	25	12	ug/L		10/04/22 17:55	10/12/22 09:44	1
Arsenic	ND	cn	0.0020	0.00068	mg/L		10/04/22 17:55	10/12/22 09:44	1
Barium	0.027	cn	0.0020	0.00075	mg/L		10/04/22 17:55	10/12/22 09:44	1
Beryllium	0.00041	J cn	0.00050	0.00012	mg/L		10/04/22 17:55	10/12/22 09:44	1
Cadmium	ND	cn	0.00050	0.00015	mg/L		10/04/22 17:55	10/12/22 09:44	1
Chromium	0.0034	cn	0.0020	0.00033	mg/L		10/04/22 17:55	10/12/22 09:44	1
Lead	0.00031	J cn	0.00050	0.000071	mg/L		10/04/22 17:55	10/12/22 09:44	1
Nickel	0.0018	cn	0.0010	0.00040	mg/L		10/04/22 17:55	10/12/22 09:44	1
Selenium	ND	^+ cn	0.0010	0.00028	mg/L		10/04/22 17:55	10/12/22 09:44	1
Sodium	5.7	cn	0.20	0.090	mg/L		10/04/22 17:55	10/12/22 09:44	1

## Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:29	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	10		1.0	1.0	NTU			09/29/22 16:12	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	45		8.0	8.0	mg/L			10/01/22 03:07	1
Specific Conductance (SM 2510B-2011)	180		5.0	1.7	umhos/cm			10/01/22 03:07	1
Total Dissolved Solids (SM 2540C-2011)	100		30	12	mg/L			09/29/22 07:44	1
pH (SW846 9040B)	6.5	HF	0.01	0.01	S.U.			10/01/22 03:07	1
Temperature (SW846 9040B)	21.9	HF	0.01	0.01	Degrees C			10/01/22 03:07	1

# Client Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

**Client Sample ID: MW-77-0922**

**Lab Sample ID: 410-99726-6**

Date Collected: 09/28/22 14:20

Matrix: Water

Date Received: 09/28/22 18:24

### Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.15	J	0.20	0.090	mg/L			10/18/22 18:15	1
Nitrogen, Nitrate	2.3		0.55	0.25	mg/L			09/29/22 22:20	5
Sulfate	43	cn	7.5	2.5	mg/L			09/29/22 22:20	5
Chloride	24	cn	7.5	3.0	mg/L			09/29/22 22:20	5

### Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	42		25	12	ug/L		10/04/22 17:50	10/13/22 19:06	1
Arsenic	ND		0.0020	0.00068	mg/L		10/04/22 17:50	10/13/22 19:06	1
Barium	0.042		0.0020	0.00075	mg/L		10/04/22 17:50	10/13/22 19:06	1
Beryllium	ND		0.00050	0.00012	mg/L		10/04/22 17:50	10/13/22 19:06	1
Cadmium	ND		0.00050	0.00015	mg/L		10/04/22 17:50	10/13/22 19:06	1
Chromium	0.00087	J	0.0020	0.00033	mg/L		10/04/22 17:50	10/13/22 19:06	1
Lead	ND		0.00050	0.000071	mg/L		10/04/22 17:50	10/13/22 19:06	1
Nickel	ND		0.0010	0.00040	mg/L		10/04/22 17:50	10/13/22 19:06	1
Selenium	ND		0.0010	0.00028	mg/L		10/04/22 17:50	10/13/22 19:06	1
Sodium	14		0.20	0.090	mg/L		10/04/22 17:50	10/13/22 19:06	1

### Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:40	1

### General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	2.0		1.0	1.0	NTU			09/29/22 16:12	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	240		8.0	8.0	mg/L			10/01/22 03:13	1
Specific Conductance (SM 2510B-2011)	630		5.0	1.7	umhos/cm			10/01/22 03:13	1
Total Dissolved Solids (SM 2540C-2011)	320		60	24	mg/L			09/29/22 07:44	1
pH (SW846 9040B)	7.3	HF	0.01	0.01	S.U.			10/01/22 03:13	1
Temperature (SW846 9040B)	21.9	HF	0.01	0.01	Degrees C			10/01/22 03:13	1

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 410-301679/5**  
**Matrix: Water**  
**Analysis Batch: 301679**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.11	0.050	mg/L			09/29/22 11:00	1

**Lab Sample ID: LCS 410-301679/3**  
**Matrix: Water**  
**Analysis Batch: 301679**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrogen, Nitrate	0.755	0.743		mg/L		98	90 - 110

**Lab Sample ID: LCSD 410-301679/4**  
**Matrix: Water**  
**Analysis Batch: 301679**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrogen, Nitrate	0.755	0.744		mg/L		99	90 - 110	0	20

**Lab Sample ID: 410-99726-6 MS**  
**Matrix: Water**  
**Analysis Batch: 301679**

**Client Sample ID: MW-77-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrogen, Nitrate	4.6	J	25.2	30.4		mg/L		103	90 - 110

**Lab Sample ID: 410-99726-6 DU**  
**Matrix: Water**  
**Analysis Batch: 301679**

**Client Sample ID: MW-77-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrogen, Nitrate	4.6	J	6.40	F5	mg/L		33	15

**Lab Sample ID: MB 410-301680/5**  
**Matrix: Water**  
**Analysis Batch: 301680**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			09/29/22 11:00	1
Sulfate	ND		1.5	0.50	mg/L			09/29/22 11:00	1
Chloride	ND		1.5	0.60	mg/L			09/29/22 11:00	1

**Lab Sample ID: LCS 410-301680/3**  
**Matrix: Water**  
**Analysis Batch: 301680**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	1.00	*+	mg/L		133	90 - 110
Sulfate	7.51	7.79		mg/L		104	90 - 110
Chloride	3.00	3.19		mg/L		106	90 - 110



# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCSD 410-301680/4**  
**Matrix: Water**  
**Analysis Batch: 301680**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.984	*+	mg/L		131	90 - 110	2	20
Sulfate	7.51	7.81		mg/L		104	90 - 110	0	20
Chloride	3.00	3.22		mg/L		107	90 - 110	1	20

**Lab Sample ID: 410-99726-6 MS**  
**Matrix: Water**  
**Analysis Batch: 301680**

**Client Sample ID: MW-77-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	ND	*+ F1	25.0	45.5	F1	mg/L		182	90 - 110
Sulfate	53	J F1	250	341	F1	mg/L		115	90 - 110
Chloride	ND	F1	100	143	F1	mg/L		143	90 - 110

**Lab Sample ID: 410-99726-6 DU**  
**Matrix: Water**  
**Analysis Batch: 301680**

**Client Sample ID: MW-77-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	ND	*+ F1	ND	*+	mg/L		NC	15
Sulfate	53	J F1	55.1	J	mg/L		3	15
Chloride	ND	F1	33.4	J	mg/L		NC	15

**Lab Sample ID: MB 410-305226/5**  
**Matrix: Water**  
**Analysis Batch: 305226**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/10/22 13:27	1

**Lab Sample ID: LCS 410-305226/3**  
**Matrix: Water**  
**Analysis Batch: 305226**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.758		mg/L		101	90 - 110

**Lab Sample ID: LCSD 410-305226/4**  
**Matrix: Water**  
**Analysis Batch: 305226**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.764		mg/L		102	90 - 110	1	20

**Lab Sample ID: 410-99726-1 DU**  
**Matrix: Water**  
**Analysis Batch: 305226**

**Client Sample ID: MW-25-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	14		13.5		mg/L		3	15

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 410-307931/5**  
**Matrix: Water**  
**Analysis Batch: 307931**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/18/22 16:38	1
Sulfate	ND		1.5	0.50	mg/L			10/18/22 16:38	1
Chloride	ND		1.5	0.60	mg/L			10/18/22 16:38	1

**Lab Sample ID: LCS 410-307931/3**  
**Matrix: Water**  
**Analysis Batch: 307931**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.736		mg/L		98	90 - 110
Sulfate	7.50	7.59		mg/L		101	90 - 110
Chloride	3.00	3.07		mg/L		102	90 - 110

**Lab Sample ID: LCSD 410-307931/4**  
**Matrix: Water**  
**Analysis Batch: 307931**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.738		mg/L		98	90 - 110	0	20
Sulfate	7.50	7.60		mg/L		101	90 - 110	0	20
Chloride	3.00	3.07		mg/L		102	90 - 110	0	20

## Method: 6020B - Metals (ICP/MS)

**Lab Sample ID: 410-99726-5 MS**  
**Matrix: Water**  
**Analysis Batch: 305799**

**Client Sample ID: MW-76-0922**  
**Prep Type: Total/NA**  
**Prep Batch: 303081**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	610	cn	5000	6190		ug/L		112	75 - 125
Arsenic	ND	cn	0.500	0.488		mg/L		98	75 - 125
Barium	0.027	cn	0.500	0.541		mg/L		103	75 - 125
Beryllium	0.00041	J cn	0.0500	0.0479		mg/L		95	75 - 125
Cadmium	ND	cn	0.0500	0.0509		mg/L		102	75 - 125
Chromium	0.0034	cn	0.500	0.528		mg/L		105	75 - 125
Lead	0.00031	J cn	0.0500	0.0509		mg/L		101	75 - 125
Nickel	0.0018	cn	0.500	0.491		mg/L		98	75 - 125
Selenium	ND	^+ cn	0.100	0.104	^+	mg/L		104	75 - 125
Sodium	5.7	cn	5.00	11.1		mg/L		107	75 - 125

**Lab Sample ID: 410-99726-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 305799**

**Client Sample ID: MW-76-0922**  
**Prep Type: Total/NA**  
**Prep Batch: 303081**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	610	cn	5000	6340		ug/L		115	75 - 125	2	20
Arsenic	ND	cn	0.500	0.487		mg/L		97	75 - 125	0	20
Barium	0.027	cn	0.500	0.554		mg/L		105	75 - 125	2	20
Beryllium	0.00041	J cn	0.0500	0.0484		mg/L		96	75 - 125	1	20
Cadmium	ND	cn	0.0500	0.0525		mg/L		105	75 - 125	3	20

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# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Method: 6020B - Metals (ICP/MS) (Continued)

**Lab Sample ID: 410-99726-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 305799**

**Client Sample ID: MW-76-0922**  
**Prep Type: Total/NA**  
**Prep Batch: 303081**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium	0.0034	cn	0.500	0.535		mg/L		106	75 - 125	1	20
Lead	0.00031	J cn	0.0500	0.0517		mg/L		103	75 - 125	2	20
Nickel	0.0018	cn	0.500	0.496		mg/L		99	75 - 125	1	20
Selenium	ND	^+ cn	0.100	0.104	^+	mg/L		104	75 - 125	0	20
Sodium	5.7	cn	5.00	11.2		mg/L		109	75 - 125	1	20

**Lab Sample ID: 410-99726-5 DU**  
**Matrix: Water**  
**Analysis Batch: 305799**

**Client Sample ID: MW-76-0922**  
**Prep Type: Total/NA**  
**Prep Batch: 303081**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	610	cn	608		ug/L		0.07	20
Arsenic	ND	cn	ND		mg/L		NC	20
Barium	0.027	cn	0.0270		mg/L		0.1	20
Beryllium	0.00041	J cn	0.000398	J	mg/L		2	20
Cadmium	ND	cn	ND		mg/L		NC	20
Chromium	0.0034	cn	0.00300		mg/L		14	20
Lead	0.00031	J cn	0.000311	J	mg/L		0.3	20
Nickel	0.0018	cn	0.00174		mg/L		3	20
Selenium	ND	^+ cn	ND	^+	mg/L		NC	20
Sodium	5.7	cn	5.68		mg/L		0.8	20

**Lab Sample ID: MB 410-303078/1-A**  
**Matrix: Water**  
**Analysis Batch: 306542**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303078**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		25	12	ug/L		10/04/22 17:50	10/13/22 18:29	1
Arsenic	ND		0.0020	0.00068	mg/L		10/04/22 17:50	10/13/22 18:29	1
Barium	ND		0.0020	0.00075	mg/L		10/04/22 17:50	10/13/22 18:29	1
Beryllium	ND		0.00050	0.00012	mg/L		10/04/22 17:50	10/13/22 18:29	1
Cadmium	ND		0.00050	0.00015	mg/L		10/04/22 17:50	10/13/22 18:29	1
Chromium	ND		0.0020	0.00033	mg/L		10/04/22 17:50	10/13/22 18:29	1
Lead	ND		0.00050	0.000071	mg/L		10/04/22 17:50	10/13/22 18:29	1
Nickel	ND		0.0010	0.00040	mg/L		10/04/22 17:50	10/13/22 18:29	1
Selenium	ND		0.0010	0.00028	mg/L		10/04/22 17:50	10/13/22 18:29	1
Sodium	ND		0.20	0.090	mg/L		10/04/22 17:50	10/13/22 18:29	1

**Lab Sample ID: LCS 410-303078/2-A**  
**Matrix: Water**  
**Analysis Batch: 306542**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303078**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	5000	4930		ug/L		99	87 - 119
Arsenic	0.500	0.474		mg/L		95	85 - 120
Barium	0.500	0.510		mg/L		102	80 - 120
Beryllium	0.0500	0.0486		mg/L		97	90 - 112
Cadmium	0.0500	0.0509		mg/L		102	86 - 113
Chromium	0.500	0.507		mg/L		101	90 - 115

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Method: 6020B - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCS 410-303078/2-A**  
**Matrix: Water**  
**Analysis Batch: 306542**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303078**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	0.0500	0.0493		mg/L		99	90 - 115
Nickel	0.500	0.496		mg/L		99	90 - 114
Selenium	0.100	0.0986		mg/L		99	80 - 120
Sodium	5.00	4.85		mg/L		97	89 - 112

**Lab Sample ID: LCSD 410-303078/3-A**  
**Matrix: Water**  
**Analysis Batch: 306542**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303078**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	5000	5080		ug/L		102	87 - 119	3	20
Arsenic	0.500	0.479		mg/L		96	85 - 120	1	20
Barium	0.500	0.504		mg/L		101	80 - 120	1	20
Beryllium	0.0500	0.0486		mg/L		97	90 - 112	0	20
Cadmium	0.0500	0.0505		mg/L		101	86 - 113	1	20
Chromium	0.500	0.516		mg/L		103	90 - 115	2	20
Lead	0.0500	0.0503		mg/L		101	90 - 115	2	20
Nickel	0.500	0.502		mg/L		100	90 - 114	1	20
Selenium	0.100	0.101		mg/L		101	80 - 120	2	20
Sodium	5.00	4.93		mg/L		99	89 - 112	2	20

**Lab Sample ID: MB 410-303081/1-A**  
**Matrix: Water**  
**Analysis Batch: 305799**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303081**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		25	12	ug/L		10/04/22 17:54	10/12/22 09:34	1
Arsenic	ND		0.0020	0.00068	mg/L		10/04/22 17:54	10/12/22 09:34	1
Barium	ND		0.0020	0.00075	mg/L		10/04/22 17:54	10/12/22 09:34	1
Beryllium	ND		0.00050	0.00012	mg/L		10/04/22 17:54	10/12/22 09:34	1
Cadmium	ND		0.00050	0.00015	mg/L		10/04/22 17:54	10/12/22 09:34	1
Chromium	ND		0.0020	0.00033	mg/L		10/04/22 17:54	10/12/22 09:34	1
Lead	ND		0.00050	0.000071	mg/L		10/04/22 17:54	10/12/22 09:34	1
Nickel	ND		0.0010	0.00040	mg/L		10/04/22 17:54	10/12/22 09:34	1
Selenium	ND		0.0010	0.00028	mg/L		10/04/22 17:54	10/12/22 09:34	1
Sodium	ND		0.20	0.090	mg/L		10/04/22 17:54	10/12/22 09:34	1

**Lab Sample ID: LCS 410-303081/2-A**  
**Matrix: Water**  
**Analysis Batch: 305799**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303081**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	5000	4960		ug/L		99	87 - 119
Arsenic	0.500	0.479		mg/L		96	85 - 120
Barium	0.500	0.508		mg/L		102	80 - 120
Beryllium	0.0500	0.0473		mg/L		95	90 - 112
Cadmium	0.0500	0.0504		mg/L		101	86 - 113
Chromium	0.500	0.500		mg/L		100	90 - 115
Lead	0.0500	0.0500		mg/L		100	90 - 115

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 410-303081/2-A  
Matrix: Water  
Analysis Batch: 305799

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 303081

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	0.500	0.492		mg/L		98	90 - 114
Selenium	0.100	0.104		mg/L		104	80 - 120
Sodium	5.00	4.96		mg/L		99	89 - 112

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 410-303587/1-A  
Matrix: Water  
Analysis Batch: 303940

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 303587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 13:45	1

Lab Sample ID: LCS 410-303587/2-A  
Matrix: Water  
Analysis Batch: 303940

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 303587

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00100	0.000960		mg/L		96	80 - 118

Lab Sample ID: LCSD 410-303587/3-A  
Matrix: Water  
Analysis Batch: 303940

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 303587

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Mercury	0.00100	0.000956		mg/L		96	80 - 118	0	20

## Method: 2130B-2011 - Turbidity

Lab Sample ID: MB 410-301416/3  
Matrix: Water  
Analysis Batch: 301416

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		1.0	1.0	NTU			09/29/22 16:12	1

Lab Sample ID: LCS 410-301416/4  
Matrix: Water  
Analysis Batch: 301416

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	9.8		NTU		98	90 - 104

## Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-302465/75  
Matrix: Water  
Analysis Batch: 302465

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			10/01/22 00:28	1

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# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: LCS 410-302465/78  
Matrix: Water  
Analysis Batch: 302465

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3 to pH 4.5	189	175		mg/L		92	82 - 106

## Method: 2510B-2011 - Conductivity, Specific Conductance

Lab Sample ID: MB 410-302466/75  
Matrix: Water  
Analysis Batch: 302466

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		5.0	1.7	umhos/cm			10/01/22 00:28	1

Lab Sample ID: LCS 410-302466/76  
Matrix: Water  
Analysis Batch: 302466

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Specific Conductance	1410	1430		umhos/cm		101	97 - 103

## Method: 2540C-2011 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 410-301136/1  
Matrix: Water  
Analysis Batch: 301136

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		30	12	mg/L			09/29/22 07:44	1

Lab Sample ID: LCS 410-301136/2  
Matrix: Water  
Analysis Batch: 301136

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	200	193		mg/L		97	72 - 127

## Method: 9040B - pH

Lab Sample ID: LCS 410-302467/77  
Matrix: Water  
Analysis Batch: 302467

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		S.U.		100	95 - 105

# QC Association Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## HPLC/IC

### Analysis Batch: 301679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-5	MW-76-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-301679/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-301679/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-301679/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6 MS	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6 DU	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 301680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-5	MW-76-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-301680/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-301680/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-301680/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6 MS	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6 DU	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 305226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-1	MW-25-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-2	MW-26-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-3	MW-13-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-305226/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-305226/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-305226/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
410-99726-1 DU	MW-25-0922	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 307931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-5	MW-76-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99726-6	MW-77-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-307931/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-307931/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-307931/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

## Metals

### Prep Batch: 303078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	3005A	
410-99726-6	MW-77-0922	Total/NA	Water	3005A	
MB 410-303078/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-303078/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 410-303078/3-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	



# QC Association Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Metals

### Prep Batch: 303081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-5	MW-76-0922	Total/NA	Water	3005A	
MB 410-303081/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-303081/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
410-99726-5 MS	MW-76-0922	Total/NA	Water	3005A	
410-99726-5 MSD	MW-76-0922	Total/NA	Water	3005A	
410-99726-5 DU	MW-76-0922	Total/NA	Water	3005A	

### Prep Batch: 303587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	7470A	
410-99726-5	MW-76-0922	Total/NA	Water	7470A	
410-99726-6	MW-77-0922	Total/NA	Water	7470A	
MB 410-303587/1-A	Method Blank	Total/NA	Water	7470A	
LCS 410-303587/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 410-303587/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	

### Analysis Batch: 303940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	7470A	303587
410-99726-5	MW-76-0922	Total/NA	Water	7470A	303587
410-99726-6	MW-77-0922	Total/NA	Water	7470A	303587
MB 410-303587/1-A	Method Blank	Total/NA	Water	7470A	303587
LCS 410-303587/2-A	Lab Control Sample	Total/NA	Water	7470A	303587
LCSD 410-303587/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	303587

### Analysis Batch: 305799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-5	MW-76-0922	Total/NA	Water	6020B	303081
MB 410-303081/1-A	Method Blank	Total Recoverable	Water	6020B	303081
LCS 410-303081/2-A	Lab Control Sample	Total Recoverable	Water	6020B	303081
410-99726-5 MS	MW-76-0922	Total/NA	Water	6020B	303081
410-99726-5 MSD	MW-76-0922	Total/NA	Water	6020B	303081
410-99726-5 DU	MW-76-0922	Total/NA	Water	6020B	303081

### Analysis Batch: 306542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	6020B	303078
410-99726-6	MW-77-0922	Total/NA	Water	6020B	303078
MB 410-303078/1-A	Method Blank	Total Recoverable	Water	6020B	303078
LCS 410-303078/2-A	Lab Control Sample	Total Recoverable	Water	6020B	303078
LCSD 410-303078/3-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	303078

## General Chemistry

### Analysis Batch: 301136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	2540C-2011	
410-99726-5	MW-76-0922	Total/NA	Water	2540C-2011	
410-99726-6	MW-77-0922	Total/NA	Water	2540C-2011	
MB 410-301136/1	Method Blank	Total/NA	Water	2540C-2011	
LCS 410-301136/2	Lab Control Sample	Total/NA	Water	2540C-2011	



# QC Association Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## General Chemistry

### Analysis Batch: 301416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	2130B-2011	
410-99726-5	MW-76-0922	Total/NA	Water	2130B-2011	
410-99726-6	MW-77-0922	Total/NA	Water	2130B-2011	
MB 410-301416/3	Method Blank	Total/NA	Water	2130B-2011	
LCS 410-301416/4	Lab Control Sample	Total/NA	Water	2130B-2011	

### Analysis Batch: 302465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	2320B-2011	
410-99726-5	MW-76-0922	Total/NA	Water	2320B-2011	
410-99726-6	MW-77-0922	Total/NA	Water	2320B-2011	
MB 410-302465/75	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-302465/78	Lab Control Sample	Total/NA	Water	2320B-2011	

### Analysis Batch: 302466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	2510B-2011	
410-99726-5	MW-76-0922	Total/NA	Water	2510B-2011	
410-99726-6	MW-77-0922	Total/NA	Water	2510B-2011	
MB 410-302466/75	Method Blank	Total/NA	Water	2510B-2011	
LCS 410-302466/76	Lab Control Sample	Total/NA	Water	2510B-2011	

### Analysis Batch: 302467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99726-4	MW-64-0922	Total/NA	Water	9040B	
410-99726-5	MW-76-0922	Total/NA	Water	9040B	
410-99726-6	MW-77-0922	Total/NA	Water	9040B	
LCS 410-302467/77	Lab Control Sample	Total/NA	Water	9040B	

# Lab Chronicle

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Client Sample ID: MW-25-0922

## Lab Sample ID: 410-99726-1

Date Collected: 09/28/22 08:20

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305226	L4QM	ELLE	10/10/22 18:18

## Client Sample ID: MW-26-0922

## Lab Sample ID: 410-99726-2

Date Collected: 09/28/22 11:07

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305226	L4QM	ELLE	10/10/22 19:01

## Client Sample ID: MW-13-0922

## Lab Sample ID: 410-99726-3

Date Collected: 09/28/22 14:52

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305226	L4QM	ELLE	10/10/22 18:50

## Client Sample ID: MW-64-0922

## Lab Sample ID: 410-99726-4

Date Collected: 09/28/22 09:30

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	301679	L4QM	ELLE	09/29/22 21:41
Total/NA	Analysis	EPA 300.0 R2.1		5	301680	L4QM	ELLE	09/29/22 21:41
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 17:53
Total/NA	Prep	3005A			303078	UAMX	ELLE	10/04/22 17:50
Total/NA	Analysis	6020B		1	306542	F7JF	ELLE	10/13/22 19:01
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:42
Total/NA	Analysis	2130B-2011		1	301416	F8TI	ELLE	09/29/22 16:12
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 03:01
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 03:01
Total/NA	Analysis	2540C-2011		1	301136	M98K	ELLE	09/29/22 07:44
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 03:01

## Client Sample ID: MW-76-0922

## Lab Sample ID: 410-99726-5

Date Collected: 09/28/22 13:05

Matrix: Water

Date Received: 09/28/22 18:24

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	301679	L4QM	ELLE	09/29/22 22:01
Total/NA	Analysis	EPA 300.0 R2.1		5	301680	L4QM	ELLE	09/29/22 22:01
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 18:04
Total/NA	Prep	3005A			303081	UAMX	ELLE	10/04/22 17:55
Total/NA	Analysis	6020B		1	305799	F7JF	ELLE	10/12/22 09:44

# Lab Chronicle

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

**Client Sample ID: MW-76-0922**

**Lab Sample ID: 410-99726-5**

**Date Collected: 09/28/22 13:05**

**Matrix: Water**

**Date Received: 09/28/22 18:24**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:29
Total/NA	Analysis	2130B-2011		1	301416	F8TI	ELLE	09/29/22 16:12
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 03:07
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 03:07
Total/NA	Analysis	2540C-2011		1	301136	M98K	ELLE	09/29/22 07:44
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 03:07

**Client Sample ID: MW-77-0922**

**Lab Sample ID: 410-99726-6**

**Date Collected: 09/28/22 14:20**

**Matrix: Water**

**Date Received: 09/28/22 18:24**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	301679	L4QM	ELLE	09/29/22 22:20
Total/NA	Analysis	EPA 300.0 R2.1		5	301680	L4QM	ELLE	09/29/22 22:20
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 18:15
Total/NA	Prep	3005A			303078	UAMX	ELLE	10/04/22 17:50
Total/NA	Analysis	6020B		1	306542	F7JF	ELLE	10/13/22 19:06
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:40
Total/NA	Analysis	2130B-2011		1	301416	F8TI	ELLE	09/29/22 16:12
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 03:13
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 03:13
Total/NA	Analysis	2540C-2011		1	301136	M98K	ELLE	09/29/22 07:44
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 03:13

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2130B-2011		Water	Turbidity
2320B-2011		Water	Total Alkalinity as CaCO <sub>3</sub> to pH 4.5
2510B-2011		Water	Specific Conductance
2540C-2011		Water	Total Dissolved Solids
6020B	3005A	Water	Aluminum
6020B	3005A	Water	Arsenic
6020B	3005A	Water	Barium
6020B	3005A	Water	Beryllium
6020B	3005A	Water	Cadmium
6020B	3005A	Water	Chromium
6020B	3005A	Water	Lead
6020B	3005A	Water	Nickel
6020B	3005A	Water	Selenium
6020B	3005A	Water	Sodium
7470A	7470A	Water	Mercury
9040B		Water	pH
9040B		Water	Temperature
EPA 300.0 R2.1		Water	Chloride
EPA 300.0 R2.1		Water	Fluoride
EPA 300.0 R2.1		Water	Sulfate



# Method Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6020B	Metals (ICP/MS)	SW846	ELLE
7470A	Mercury (CVAA)	SW846	ELLE
2130B-2011	Turbidity	SM	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
2510B-2011	Conductivity, Specific Conductance	SM	ELLE
2540C-2011	Solids, Total Dissolved (TDS)	SM	ELLE
9040B	pH	SW846	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
7470A	Preparation, Mercury	SW846	ELLE

#### Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Sample Summary

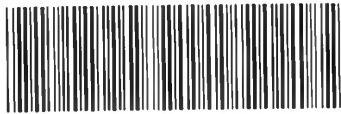
Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99726-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-99726-1	MW-25-0922	Water	09/28/22 08:20	09/28/22 18:24
410-99726-2	MW-26-0922	Water	09/28/22 11:07	09/28/22 18:24
410-99726-3	MW-13-0922	Water	09/28/22 14:52	09/28/22 18:24
410-99726-4	MW-64-0922	Water	09/28/22 09:30	09/28/22 18:24
410-99726-5	MW-76-0922	Water	09/28/22 13:05	09/28/22 18:24
410-99726-6	MW-77-0922	Water	09/28/22 14:20	09/28/22 18:24

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onmi

# Chain of Custody Record



Environment Testing America

410-99726 Chain of Custody

Client Contact: Josh Mullis	Sampler: Mullis	Lab PM: Gordon, Stephen J	Carrier Tracking No(s):	COC No: 410-64743-18583 3
Company: Tetra Tech, Inc.	Phone: 410-279-2700	E-Mail: Stephen.Gordon@et.eurofinsus.com	State of Origin: MD	Page: Page 3 of 2 of 2

Address: 20251 Century Blvd Suite 200	Due Date Requested:	<b>Analysis Requested</b> 300_ORGFM_28D - Fluoride Only 300_ORGFM_28D, 300_ORGFM5 2320B, 2510B, 2540C_SingleDry, 9040B SM2130B - Turbidity 6020B, 7470A 1677_Free - Free Cyanide	Job #	
City: Germantown	TAT Requested (days): Standard		Preservation Codes:	
State, Zip: MD, 20874	Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA	M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)
Phone: 412-921-8277(Tel)	PO #: 1188904		Other:	
Email: Josh.Mullis@tetratech.com	WO #:			

Project Name: EastAlco WW	Project #: 41001054	Matrix: (W=water, S=solid, O=oil, BT=Tissue, A=Air)	Special Instructions/Note:
Site:	SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix	300_ORGFM_28D - Fluoride Only	300_ORGFM_28D, 300_ORGFM5	2320B, 2510B, 2540C_SingleDry, 9040B	SM2130B - Turbidity	6020B, 7470A	1677_Free - Free Cyanide	Special Instructions/Note:
				Water							
MW-64	9/28/22	0930	G	Water	X	X	X	X			Includes Fluoride
MW-74				Water							
MW-76	9/28/22	1305	G	Water	X	X	X	X			" "
MW-77	9/28/22	1420	G	Water	X	X	X	X			" "
EUR-SATT				Water							
				Water							
				Water							

<b>Possible Hazard Identification</b> <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b> <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
--	--

Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_

Special Instructions/QC Requirements: \_\_\_\_\_

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment
Relinquished by: [Signature]	Date/Time: 9/28/22 1526	Company: Tetra Tech Inc	Received by: [Signature] Date/Time: 9/28/22 1526 Company: [Signature]
Relinquished by: [Signature]	Date/Time: 9/28/22 1809	Company: [Signature]	Received by: [Signature] Date/Time: [Signature] Company: [Signature]
Relinquished by: [Signature]	Date/Time: [Signature]	Company: [Signature]	Received by: [Signature] Date/Time: 9-28-22 1824 Company: ETC

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.: N/A	Cooler Temperature(s) °C and Other Remarks: 4.8
--	-----------------------	---



# Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 410-99726-1

**Login Number: 99726**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Metzger, Katherine A**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
The cooler's custody seal is intact.	N/A	Not present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	Not present.
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC  
2425 New Holland Pike  
Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-99897-1  
Client Project/Site: EastAlco WW  
Revision: 1

For:  
Tetra Tech, Inc.  
Foster Plaza VII  
661 Anderson Drive  
Foster Plaza 7 Suite 200  
Pittsburgh, Pennsylvania 15220

Attn: Dan Drzik



---

Authorized for release by:  
10/25/2022 3:25:50 PM

Stephen Gordon, Senior Project Manager  
(412)525-0071  
[Stephen.Gordon@et.eurofinsus.com](mailto:Stephen.Gordon@et.eurofinsus.com)

### LINKS

Review your project  
results through



Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
  - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
  - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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Stephen Gordon  
Senior Project Manager  
10/25/2022 3:25:51 PM



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# Definitions/Glossary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Qualifiers

### HPLC/IC

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
cn	Refer to Case Narrative for further detail
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^5-	Linear Range Check (LRC) is outside acceptance limits, low biased.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
♠	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

# Definitions/Glossary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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# Case Narrative

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

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## Job ID: 410-99897-1

---

### Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

#### Narrative

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#### Job Narrative 410-99897-1

#### REVISION

The report being provided is a revision of the original report sent on 10/13/2022. The report (revision 1) is being revised due to Revised to report fluoride at DF1.

Report revision history

#### Receipt

The samples were received on 9/29/2022 6:53 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.1°C

#### HPLC/IC

Method 300\_ORGFM\_28D: The continuing calibration verification (CCV) associated with batch 410-302228 recovered above the upper control limit for fluoride. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: MW-111-0922 (410-99897-1), MW-75-0922 (410-99897-3), MW-75DUP-0922 (410-99897-4) and EQR-SA11-0922 (410-99897-5).

Method 300\_ORGFM\_28D: The continuing calibration verification (CCV) associated with batch 410-302228 recovered above the upper control limit for sulfate. The sample associated with this CCV was non-detect for the affected analyte; therefore, the data have been reported. The following sample is impacted: EQR-SA11-0922 (410-99897-5).

Method 300\_ORGFMS: The following samples were analyzed outside of analytical holding time due to a laboratory error: MW-111-0922 (410-99897-1), MW-74-0922 (410-99897-2), MW-75-0922 (410-99897-3), MW-75DUP-0922 (410-99897-4) and EQR-SA11-0922 (410-99897-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### Metals

Method 6020B: The continuing calibration verification (CCV) associated with batch 410-305815 recovered above the upper control limit for Selenium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

#### General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

# Detection Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Client Sample ID: MW-111-0922

## Lab Sample ID: 410-99897-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.11	J	0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Nitrogen, Nitrate	2.8	H cn	0.55	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	13		7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	12	cn	7.5	3.0	mg/L	5		EPA 300.0 R2.1	Total/NA
Aluminum	110		25	12	ug/L	1		6020B	Total/NA
Barium	0.042		0.0020	0.00075	mg/L	1		6020B	Total/NA
Beryllium	0.00019	J	0.00050	0.00012	mg/L	1		6020B	Total/NA
Chromium	0.0014	J	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.00028	J	0.00050	0.000071	mg/L	1		6020B	Total/NA
Nickel	0.0017		0.0010	0.00040	mg/L	1		6020B	Total/NA
Sodium	4.1		0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	5.1		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	46		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	190		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	100		30	12	mg/L	1		2540C-2011	Total/NA
pH	6.4	HF	0.01	0.01	S.U.	1		9040B	Total/NA

## Client Sample ID: MW-74-0922

## Lab Sample ID: 410-99897-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.69		0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Nitrogen, Nitrate	0.89	H cn	0.55	0.25	mg/L	5		EPA 300.0 R2.1	Total/NA
Sulfate	21		7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	4.0	J	7.5	3.0	mg/L	5		EPA 300.0 R2.1	Total/NA
Aluminum	1300		25	12	ug/L	1		6020B	Total/NA
Barium	0.029		0.0020	0.00075	mg/L	1		6020B	Total/NA
Chromium	0.0017	J	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.0013		0.00050	0.000071	mg/L	1		6020B	Total/NA
Nickel	0.0017		0.0010	0.00040	mg/L	1		6020B	Total/NA
Sodium	6.8		0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	39		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	160		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	370		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	190		30	12	mg/L	1		2540C-2011	Total/NA
pH	7.3	HF	0.01	0.01	S.U.	1		9040B	Total/NA

## Client Sample ID: MW-75-0922

## Lab Sample ID: 410-99897-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.14	J	0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Sulfate	28		7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	43		15	6.0	mg/L	10		EPA 300.0 R2.1	Total/NA
Aluminum	96	cn	25	12	ug/L	1		6020B	Total/NA
Barium	0.055	cn	0.0020	0.00075	mg/L	1		6020B	Total/NA
Chromium	0.00051	J cn	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.00010	J cn	0.00050	0.000071	mg/L	1		6020B	Total/NA
Sodium	19	cn	0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	3.2		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	230		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	640		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	320		60	24	mg/L	1		2540C-2011	Total/NA
pH	7.3	HF	0.01	0.01	S.U.	1		9040B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Detection Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Client Sample ID: MW-75DUP-0922

Lab Sample ID: 410-99897-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.15	J	0.20	0.090	mg/L	1		EPA 300.0 R2.1	Total/NA
Sulfate	27		7.5	2.5	mg/L	5		EPA 300.0 R2.1	Total/NA
Chloride	43		15	6.0	mg/L	10		EPA 300.0 R2.1	Total/NA
Aluminum	97		25	12	ug/L	1		6020B	Total/NA
Barium	0.053		0.0020	0.00075	mg/L	1		6020B	Total/NA
Chromium	0.00034	J	0.0020	0.00033	mg/L	1		6020B	Total/NA
Lead	0.000080	J	0.00050	0.000071	mg/L	1		6020B	Total/NA
Nickel	0.00057	J	0.0010	0.00040	mg/L	1		6020B	Total/NA
Sodium	20		0.20	0.090	mg/L	1		6020B	Total/NA
Turbidity	3.5		1.0	1.0	NTU	1		2130B-2011	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	230		8.0	8.0	mg/L	1		2320B-2011	Total/NA
Specific Conductance	630		5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	330		60	24	mg/L	1		2540C-2011	Total/NA
pH	7.3	HF	0.01	0.01	S.U.	1		9040B	Total/NA

## Client Sample ID: EQR-SA11-0922

Lab Sample ID: 410-99897-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	2.1	J	5.0	1.7	umhos/cm	1		2510B-2011	Total/NA
Total Dissolved Solids	3100		240	96	mg/L	1		2540C-2011	Total/NA
pH	6.2	HF	0.01	0.01	S.U.	1		9040B	Total/NA

## Client Sample ID: SW-D-0922

Lab Sample ID: 410-99897-6

No Detections.

## Client Sample ID: SW-E-0922

Lab Sample ID: 410-99897-7

No Detections.

## Client Sample ID: SW-I-0922

Lab Sample ID: 410-99897-8

No Detections.

## Client Sample ID: TUSCARORA CREEK DUP

Lab Sample ID: 410-99897-9

No Detections.

## Client Sample ID: MW-107-0922

Lab Sample ID: 410-99897-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.6		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-6-0922

Lab Sample ID: 410-99897-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.6		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

## Client Sample ID: MW-51-0922

Lab Sample ID: 410-99897-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.6		1.0	0.45	mg/L	5		EPA 300.0 R2.1	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

# Client Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

**Client Sample ID: MW-111-0922**

**Lab Sample ID: 410-99897-1**

Date Collected: 09/29/22 09:00

Matrix: Water

Date Received: 09/29/22 18:53

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.11	J	0.20	0.090	mg/L			10/18/22 17:10	1
Nitrogen, Nitrate	2.8	H cn	0.55	0.25	mg/L			10/01/22 13:54	5
Sulfate	13		7.5	2.5	mg/L			10/04/22 05:54	5
Chloride	12	cn	7.5	3.0	mg/L			10/01/22 13:54	5

**Method: SW846 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	110		25	12	ug/L		10/05/22 19:44	10/12/22 11:54	1
Arsenic	ND		0.0020	0.00068	mg/L		10/05/22 19:44	10/12/22 11:54	1
Barium	0.042		0.0020	0.00075	mg/L		10/05/22 19:44	10/12/22 11:54	1
Beryllium	0.00019	J	0.00050	0.00012	mg/L		10/05/22 19:44	10/12/22 11:54	1
Cadmium	ND		0.00050	0.00015	mg/L		10/05/22 19:44	10/12/22 11:54	1
Chromium	0.0014	J	0.0020	0.00033	mg/L		10/05/22 19:44	10/12/22 11:54	1
Lead	0.00028	J	0.00050	0.000071	mg/L		10/05/22 19:44	10/12/22 11:54	1
Nickel	0.0017		0.0010	0.00040	mg/L		10/05/22 19:44	10/12/22 11:54	1
Selenium	ND		0.0010	0.00028	mg/L		10/05/22 19:44	10/12/22 11:54	1
Sodium	4.1		0.20	0.090	mg/L		10/05/22 19:44	10/12/22 15:25	1

**Method: SW846 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 13:51	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	5.1		1.0	1.0	NTU			10/01/22 06:47	1
Total Alkalinity as CaCO <sub>3</sub> to pH 4.5 (SM 2320B-2011)	46		8.0	8.0	mg/L			10/01/22 02:06	1
Specific Conductance (SM 2510B-2011)	190		5.0	1.7	umhos/cm			10/01/22 02:06	1
Total Dissolved Solids (SM 2540C-2011)	100		30	12	mg/L			09/30/22 07:33	1
pH (SW846 9040B)	6.4	HF	0.01	0.01	S.U.			10/01/22 02:06	1

**Client Sample ID: MW-74-0922**

**Lab Sample ID: 410-99897-2**

Date Collected: 09/29/22 12:45

Matrix: Water

Date Received: 09/29/22 18:53

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.69		0.20	0.090	mg/L			10/18/22 17:21	1
Nitrogen, Nitrate	0.89	H cn	0.55	0.25	mg/L			10/01/22 14:11	5
Sulfate	21		7.5	2.5	mg/L			10/04/22 18:25	5
Chloride	4.0	J	7.5	3.0	mg/L			10/01/22 14:11	5

**Method: SW846 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1300		25	12	ug/L		10/05/22 19:52	10/13/22 10:07	1
Arsenic	ND		0.0020	0.00068	mg/L		10/05/22 19:52	10/13/22 10:07	1
Barium	0.029		0.0020	0.00075	mg/L		10/05/22 19:52	10/13/22 10:07	1
Beryllium	ND	^5- ^+	0.00050	0.00012	mg/L		10/05/22 19:52	10/13/22 10:07	1
Cadmium	ND		0.00050	0.00015	mg/L		10/05/22 19:52	10/13/22 10:07	1
Chromium	0.0017	J	0.0020	0.00033	mg/L		10/05/22 19:52	10/13/22 10:07	1

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# Client Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

**Client Sample ID: MW-74-0922**

**Lab Sample ID: 410-99897-2**

Date Collected: 09/29/22 12:45

Matrix: Water

Date Received: 09/29/22 18:53

**Method: SW846 6020B - Metals (ICP/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0013		0.00050	0.000071	mg/L		10/05/22 19:52	10/13/22 10:07	1
Nickel	0.0017		0.0010	0.00040	mg/L		10/05/22 19:52	10/13/22 10:07	1
Selenium	ND		0.0010	0.00028	mg/L		10/05/22 19:52	10/13/22 10:07	1
Sodium	6.8		0.20	0.090	mg/L		10/05/22 19:52	10/13/22 10:07	1

**Method: SW846 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:10	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	39		1.0	1.0	NTU			10/01/22 06:47	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	160		8.0	8.0	mg/L			10/01/22 02:12	1
Specific Conductance (SM 2510B-2011)	370		5.0	1.7	umhos/cm			10/01/22 02:12	1
Total Dissolved Solids (SM 2540C-2011)	190		30	12	mg/L			09/30/22 07:33	1
pH (SW846 9040B)	7.3	HF	0.01	0.01	S.U.			10/01/22 02:12	1

**Client Sample ID: MW-75-0922**

**Lab Sample ID: 410-99897-3**

Date Collected: 09/29/22 10:40

Matrix: Water

Date Received: 09/29/22 18:53

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.14	J	0.20	0.090	mg/L			10/18/22 17:32	1
Nitrogen, Nitrate	ND	H cn	0.55	0.25	mg/L			10/01/22 14:28	5
Sulfate	28		7.5	2.5	mg/L			10/04/22 03:47	5
Chloride	43		15	6.0	mg/L			10/04/22 03:57	10

**Method: SW846 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	96	cn	25	12	ug/L		10/05/22 19:44	10/12/22 11:18	1
Arsenic	ND	cn	0.0020	0.00068	mg/L		10/05/22 19:44	10/12/22 11:18	1
Barium	0.055	cn	0.0020	0.00075	mg/L		10/05/22 19:44	10/12/22 11:18	1
Beryllium	ND	cn	0.00050	0.00012	mg/L		10/05/22 19:44	10/12/22 11:18	1
Cadmium	ND	cn	0.00050	0.00015	mg/L		10/05/22 19:44	10/12/22 11:18	1
Chromium	0.00051	J cn	0.0020	0.00033	mg/L		10/05/22 19:44	10/12/22 11:18	1
Lead	0.00010	J cn	0.00050	0.000071	mg/L		10/05/22 19:44	10/12/22 11:18	1
Nickel	ND	cn	0.0010	0.00040	mg/L		10/05/22 19:44	10/12/22 11:18	1
Selenium	ND	^+ cn	0.0010	0.00028	mg/L		10/05/22 19:44	10/12/22 11:18	1
Sodium	19	cn	0.20	0.090	mg/L		10/05/22 19:44	10/12/22 15:21	1

**Method: SW846 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:02	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	3.2		1.0	1.0	NTU			10/01/22 06:47	1

# Client Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

**Client Sample ID: MW-75-0922**

**Lab Sample ID: 410-99897-3**

Date Collected: 09/29/22 10:40

Matrix: Water

Date Received: 09/29/22 18:53

## General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	230		8.0	8.0	mg/L			10/01/22 02:18	1
Specific Conductance (SM 2510B-2011)	640		5.0	1.7	umhos/cm			10/01/22 02:18	1
Total Dissolved Solids (SM 2540C-2011)	320		60	24	mg/L			09/30/22 07:33	1
pH (SW846 9040B)	7.3	HF	0.01	0.01	S.U.			10/01/22 02:18	1

**Client Sample ID: MW-75DUP-0922**

**Lab Sample ID: 410-99897-4**

Date Collected: 09/29/22 00:00

Matrix: Water

Date Received: 09/29/22 18:53

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.15	J	0.20	0.090	mg/L			10/18/22 17:43	1
Nitrogen, Nitrate	ND	H cn	0.55	0.25	mg/L			10/01/22 15:03	5
Sulfate	27		7.5	2.5	mg/L			10/04/22 04:07	5
Chloride	43		15	6.0	mg/L			10/04/22 04:17	10

## Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	97		25	12	ug/L		10/05/22 19:44	10/12/22 11:30	1
Arsenic	ND		0.0020	0.00068	mg/L		10/05/22 19:44	10/12/22 11:30	1
Barium	0.053		0.0020	0.00075	mg/L		10/05/22 19:44	10/12/22 11:30	1
Beryllium	ND		0.00050	0.00012	mg/L		10/05/22 19:44	10/12/22 11:30	1
Cadmium	ND		0.00050	0.00015	mg/L		10/05/22 19:44	10/12/22 11:30	1
Chromium	0.00034	J	0.0020	0.00033	mg/L		10/05/22 19:44	10/12/22 11:30	1
Lead	0.000080	J	0.00050	0.000071	mg/L		10/05/22 19:44	10/12/22 11:30	1
Nickel	0.00057	J	0.0010	0.00040	mg/L		10/05/22 19:44	10/12/22 11:30	1
Selenium	ND		0.0010	0.00028	mg/L		10/05/22 19:44	10/12/22 11:30	1
Sodium	20		0.20	0.090	mg/L		10/05/22 19:44	10/12/22 15:23	1

## Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:04	1

## General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	3.5		1.0	1.0	NTU			10/01/22 06:47	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	230		8.0	8.0	mg/L			10/01/22 02:24	1
Specific Conductance (SM 2510B-2011)	630		5.0	1.7	umhos/cm			10/01/22 02:24	1
Total Dissolved Solids (SM 2540C-2011)	330		60	24	mg/L			09/30/22 07:33	1
pH (SW846 9040B)	7.3	HF	0.01	0.01	S.U.			10/01/22 02:24	1

# Client Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

**Client Sample ID: EQR-SA11-0922**

**Lab Sample ID: 410-99897-5**

Date Collected: 09/29/22 00:00

Matrix: Water

Date Received: 09/29/22 18:53

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/24/22 23:21	1
Nitrogen, Nitrate	ND	H cn	0.55	0.25	mg/L			10/01/22 15:20	5
Sulfate	ND	cn	7.5	2.5	mg/L			10/01/22 15:20	5
Chloride	ND	cn	7.5	3.0	mg/L			10/01/22 15:20	5

**Method: SW846 6020B - Metals (ICP/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	cn	25	12	ug/L		10/05/22 19:44	10/12/22 11:12	1
Arsenic	ND	cn	0.0020	0.00068	mg/L		10/05/22 19:44	10/12/22 11:12	1
Barium	ND	cn	0.0020	0.00075	mg/L		10/05/22 19:44	10/12/22 11:12	1
Beryllium	ND	cn	0.00050	0.00012	mg/L		10/05/22 19:44	10/12/22 11:12	1
Cadmium	ND	cn	0.00050	0.00015	mg/L		10/05/22 19:44	10/12/22 11:12	1
Chromium	ND	cn	0.0020	0.00033	mg/L		10/05/22 19:44	10/12/22 11:12	1
Lead	ND	cn	0.00050	0.000071	mg/L		10/05/22 19:44	10/12/22 11:12	1
Nickel	ND	cn	0.0010	0.00040	mg/L		10/05/22 19:44	10/12/22 11:12	1
Selenium	ND	^+ cn	0.0010	0.00028	mg/L		10/05/22 19:44	10/12/22 11:12	1
Sodium	ND	cn	0.20	0.090	mg/L		10/05/22 19:44	10/12/22 15:19	1

**Method: SW846 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 14:25	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B-2011)	ND		1.0	1.0	NTU			10/01/22 06:47	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B-2011)	ND		8.0	8.0	mg/L			10/01/22 02:30	1
<b>Specific Conductance (SM 2510B-2011)</b>	<b>2.1</b>	<b>J</b>	5.0	1.7	umhos/cm			10/01/22 02:30	1
<b>Total Dissolved Solids (SM 2540C-2011)</b>	<b>3100</b>		240	96	mg/L			09/30/22 07:33	1
<b>pH (SW846 9040B)</b>	<b>6.2</b>	<b>HF</b>	0.01	0.01	S.U.			10/01/22 02:30	1

**Client Sample ID: SW-D-0922**

**Lab Sample ID: 410-99897-6**

Date Collected: 09/29/22 14:05

Matrix: Water

Date Received: 09/29/22 18:53

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free (OI CORP OIA-1677)	ND	F1	0.0060	0.0050	mg/L			09/30/22 10:05	1

**Client Sample ID: SW-E-0922**

**Lab Sample ID: 410-99897-7**

Date Collected: 09/29/22 13:35

Matrix: Water

Date Received: 09/29/22 18:53

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free (OI CORP OIA-1677)	ND		0.0060	0.0050	mg/L			09/30/22 10:13	1

# Client Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

**Client Sample ID: SW-I-0922**

**Lab Sample ID: 410-99897-8**

Date Collected: 09/29/22 13:55

Matrix: Water

Date Received: 09/29/22 18:53

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free (OI CORP OIA-1677)	ND		0.0060	0.0050	mg/L			09/30/22 10:16	1

**Client Sample ID: TUSCARORA CREEK DUP**

**Lab Sample ID: 410-99897-9**

Date Collected: 09/29/22 00:00

Matrix: Water

Date Received: 09/29/22 18:53

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free (OI CORP OIA-1677)	ND		0.0060	0.0050	mg/L			09/30/22 10:19	1

**Client Sample ID: MW-107-0922**

**Lab Sample ID: 410-99897-10**

Date Collected: 09/29/22 09:29

Matrix: Water

Date Received: 09/29/22 18:53

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.6		1.0	0.45	mg/L			10/11/22 20:56	5

**Client Sample ID: MW-6-0922**

**Lab Sample ID: 410-99897-11**

Date Collected: 09/29/22 09:42

Matrix: Water

Date Received: 09/29/22 18:53

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	2.6		1.0	0.45	mg/L			10/11/22 21:06	5

**Client Sample ID: MW-51-0922**

**Lab Sample ID: 410-99897-12**

Date Collected: 09/29/22 09:01

Matrix: Water

Date Received: 09/29/22 18:53

**Method: EPA 300.0 R2.1 - Anions, Ion Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.6		1.0	0.45	mg/L			10/11/22 21:39	5

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

**Lab Sample ID: MB 410-302227/5**  
**Matrix: Water**  
**Analysis Batch: 302227**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.11	0.050	mg/L			10/01/22 12:54	1

**Lab Sample ID: MB 410-302227/64**  
**Matrix: Water**  
**Analysis Batch: 302227**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate	ND		0.11	0.050	mg/L			10/01/22 21:20	1

**Lab Sample ID: LCS 410-302227/3**  
**Matrix: Water**  
**Analysis Batch: 302227**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrogen, Nitrate	0.755	0.776		mg/L		103	90 - 110

**Lab Sample ID: LCS 410-302227/62**  
**Matrix: Water**  
**Analysis Batch: 302227**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrogen, Nitrate	0.755	0.782		mg/L		104	90 - 110

**Lab Sample ID: LCSD 410-302227/4**  
**Matrix: Water**  
**Analysis Batch: 302227**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrogen, Nitrate	0.755	0.787		mg/L		104	90 - 110	1	20

**Lab Sample ID: LCSD 410-302227/63**  
**Matrix: Water**  
**Analysis Batch: 302227**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrogen, Nitrate	0.755	0.790		mg/L		105	90 - 110	1	20

**Lab Sample ID: MB 410-302228/5**  
**Matrix: Water**  
**Analysis Batch: 302228**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/01/22 12:54	1
Sulfate	ND		1.5	0.50	mg/L			10/01/22 12:54	1
Chloride	ND		1.5	0.60	mg/L			10/01/22 12:54	1

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 410-302228/64**  
**Matrix: Water**  
**Analysis Batch: 302228**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/01/22 21:20	1
Sulfate	ND		1.5	0.50	mg/L			10/01/22 21:20	1
Chloride	ND		1.5	0.60	mg/L			10/01/22 21:20	1

**Lab Sample ID: LCS 410-302228/3**  
**Matrix: Water**  
**Analysis Batch: 302228**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.749		mg/L		100	90 - 110
Sulfate	7.51	8.07		mg/L		108	90 - 110
Chloride	3.00	3.25		mg/L		108	90 - 110

**Lab Sample ID: LCS 410-302228/62**  
**Matrix: Water**  
**Analysis Batch: 302228**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.811		mg/L		108	90 - 110
Chloride	3.00	3.29		mg/L		110	90 - 110

**Lab Sample ID: LCSD 410-302228/4**  
**Matrix: Water**  
**Analysis Batch: 302228**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.749		mg/L		100	90 - 110	0	20
Sulfate	7.51	8.09		mg/L		108	90 - 110	0	20
Chloride	3.00	3.28		mg/L		109	90 - 110	1	20

**Lab Sample ID: LCSD 410-302228/63**  
**Matrix: Water**  
**Analysis Batch: 302228**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.793		mg/L		106	90 - 110	2	20
Chloride	3.00	3.29		mg/L		110	90 - 110	0	20

**Lab Sample ID: MB 410-302604/5**  
**Matrix: Water**  
**Analysis Batch: 302604**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/03/22 20:59	1
Sulfate	ND		1.5	0.50	mg/L			10/03/22 20:59	1
Chloride	ND		1.5	0.60	mg/L			10/03/22 20:59	1



# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 410-302604/3**  
**Matrix: Water**  
**Analysis Batch: 302604**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.296	*-	mg/L		39	90 - 110
Sulfate	7.51	7.56		mg/L		101	90 - 110
Chloride	3.00	3.07		mg/L		102	90 - 110

**Lab Sample ID: LCSD 410-302604/4**  
**Matrix: Water**  
**Analysis Batch: 302604**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	7.51	7.55		mg/L		101	90 - 110	0	20
Chloride	3.00	3.09		mg/L		103	90 - 110	1	20

**Lab Sample ID: MB 410-302609/5**  
**Matrix: Water**  
**Analysis Batch: 302609**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/04/22 05:25	1
Sulfate	ND		1.5	0.50	mg/L			10/04/22 05:25	1
Chloride	ND		1.5	0.60	mg/L			10/04/22 05:25	1

**Lab Sample ID: LCS 410-302609/3**  
**Matrix: Water**  
**Analysis Batch: 302609**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	7.51	7.81		mg/L		104	90 - 110
Chloride	3.00	3.12		mg/L		104	90 - 110

**Lab Sample ID: LCSD 410-302609/4**  
**Matrix: Water**  
**Analysis Batch: 302609**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	7.51	7.72		mg/L		103	90 - 110	1	20
Chloride	3.00	3.11		mg/L		104	90 - 110	0	20

**Lab Sample ID: MB 410-302612/5**  
**Matrix: Water**  
**Analysis Batch: 302612**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/04/22 11:41	1
Sulfate	ND		1.5	0.50	mg/L			10/04/22 11:41	1
Chloride	ND		1.5	0.60	mg/L			10/04/22 11:41	1

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCS 410-302612/3**  
**Matrix: Water**  
**Analysis Batch: 302612**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.682		mg/L		91	90 - 110
Sulfate	7.50	6.84		mg/L		91	90 - 110
Chloride	3.00	2.89		mg/L		96	90 - 110

**Lab Sample ID: LCSD 410-302612/4**  
**Matrix: Water**  
**Analysis Batch: 302612**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.680		mg/L		91	90 - 110	0	20
Sulfate	7.50	6.84		mg/L		91	90 - 110	0	20
Chloride	3.00	2.88		mg/L		96	90 - 110	0	20

**Lab Sample ID: 410-99897-2 MS**  
**Matrix: Water**  
**Analysis Batch: 302612**

**Client Sample ID: MW-74-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.81	J	2.50	3.39		mg/L		103	90 - 110
Sulfate	21		25.0	46.8		mg/L		104	90 - 110

**Lab Sample ID: 410-99897-2 DU**  
**Matrix: Water**  
**Analysis Batch: 302612**

**Client Sample ID: MW-74-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.81	J	0.792	J	mg/L		3	15
Sulfate	21		20.7		mg/L		0.1	15

**Lab Sample ID: MB 410-305447/5**  
**Matrix: Water**  
**Analysis Batch: 305447**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/11/22 14:38	1

**Lab Sample ID: LCS 410-305447/3**  
**Matrix: Water**  
**Analysis Batch: 305447**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.747		mg/L		100	90 - 110

**Lab Sample ID: LCSD 410-305447/4**  
**Matrix: Water**  
**Analysis Batch: 305447**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.728		mg/L		97	90 - 110	3	20

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: MB 410-307931/5**  
**Matrix: Water**  
**Analysis Batch: 307931**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/18/22 16:38	1
Sulfate	ND		1.5	0.50	mg/L			10/18/22 16:38	1
Chloride	ND		1.5	0.60	mg/L			10/18/22 16:38	1

**Lab Sample ID: LCS 410-307931/3**  
**Matrix: Water**  
**Analysis Batch: 307931**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.736		mg/L		98	90 - 110
Sulfate	7.50	7.59		mg/L		101	90 - 110
Chloride	3.00	3.07		mg/L		102	90 - 110

**Lab Sample ID: LCSD 410-307931/4**  
**Matrix: Water**  
**Analysis Batch: 307931**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.738		mg/L		98	90 - 110	0	20
Sulfate	7.50	7.60		mg/L		101	90 - 110	0	20
Chloride	3.00	3.07		mg/L		102	90 - 110	0	20

**Lab Sample ID: MB 410-309905/5**  
**Matrix: Water**  
**Analysis Batch: 309905**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.090	mg/L			10/24/22 22:27	1
Sulfate	ND		1.5	0.50	mg/L			10/24/22 22:27	1
Chloride	ND		1.5	0.60	mg/L			10/24/22 22:27	1

**Lab Sample ID: LCS 410-309905/3**  
**Matrix: Water**  
**Analysis Batch: 309905**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.750	0.703		mg/L		94	90 - 110
Sulfate	7.50	7.12		mg/L		95	90 - 110
Chloride	3.00	2.77		mg/L		92	90 - 110

**Lab Sample ID: LCSD 410-309905/4**  
**Matrix: Water**  
**Analysis Batch: 309905**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.750	0.706		mg/L		94	90 - 110	0	20
Sulfate	7.50	7.17		mg/L		96	90 - 110	1	20
Chloride	3.00	2.79		mg/L		93	90 - 110	1	20

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: 6020B - Metals (ICP/MS)

**Lab Sample ID: 410-99897-2 MS**  
**Matrix: Water**  
**Analysis Batch: 306267**

**Client Sample ID: MW-74-0922**  
**Prep Type: Total/NA**  
**Prep Batch: 303581**

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Aluminum	1300		5000	7220		ug/L		119	75 - 125
Arsenic	ND		0.500	0.483		mg/L		97	75 - 125
Barium	0.029		0.500	0.542		mg/L		103	75 - 125
Beryllium	ND	^5- ^+	0.0500	0.0512	^5- ^+	mg/L		102	75 - 125
Cadmium	ND		0.0500	0.0506		mg/L		101	75 - 125
Chromium	0.0017	J	0.500	0.499		mg/L		100	75 - 125
Lead	0.0013		0.0500	0.0512		mg/L		100	75 - 125
Nickel	0.0017		0.500	0.494		mg/L		98	75 - 125
Selenium	ND		0.100	0.101		mg/L		101	75 - 125
Sodium	6.8		5.00	11.7		mg/L		99	75 - 125

**Lab Sample ID: 410-99897-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 306267**

**Client Sample ID: MW-74-0922**  
**Prep Type: Total/NA**  
**Prep Batch: 303581**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Aluminum	1300		5000	7380		ug/L		122	75 - 125	2	20
Arsenic	ND		0.500	0.473		mg/L		95	75 - 125	2	20
Barium	0.029		0.500	0.539		mg/L		102	75 - 125	1	20
Beryllium	ND	^5- ^+	0.0500	0.0510	^5- ^+	mg/L		102	75 - 125	1	20
Cadmium	ND		0.0500	0.0504		mg/L		101	75 - 125	0	20
Chromium	0.0017	J	0.500	0.497		mg/L		99	75 - 125	0	20
Lead	0.0013		0.0500	0.0511		mg/L		99	75 - 125	0	20
Nickel	0.0017		0.500	0.490		mg/L		98	75 - 125	1	20
Selenium	ND		0.100	0.101		mg/L		101	75 - 125	0	20
Sodium	6.8		5.00	12.2		mg/L		109	75 - 125	4	20

**Lab Sample ID: 410-99897-2 DU**  
**Matrix: Water**  
**Analysis Batch: 306267**

**Client Sample ID: MW-74-0922**  
**Prep Type: Total/NA**  
**Prep Batch: 303581**

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Aluminum	1300		1390		ug/L		8	20
Arsenic	ND		ND		mg/L		NC	20
Barium	0.029		0.0299		mg/L		4	20
Beryllium	ND	^5- ^+	0.000126	J ^+	mg/L		NC	20
Cadmium	ND		ND		mg/L		NC	20
Chromium	0.0017	J	0.00188	J	mg/L		9	20
Lead	0.0013		0.00137		mg/L		3	20
Nickel	0.0017		0.00202		mg/L		16	20
Selenium	ND		0.000284	J	mg/L		NC	20
Sodium	6.8		6.85		mg/L		1	20

**Lab Sample ID: MB 410-303577/1-A**  
**Matrix: Water**  
**Analysis Batch: 305815**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303577**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
	Result	Qualifier								
Aluminum	ND		25	12	ug/L		10/05/22 19:44	10/12/22 10:39	1	

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: 6020B - Metals (ICP/MS) (Continued)

**Lab Sample ID: MB 410-303577/1-A**  
**Matrix: Water**  
**Analysis Batch: 305815**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303577**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0020	0.00068	mg/L		10/05/22 19:44	10/12/22 10:39	1
Barium	ND		0.0020	0.00075	mg/L		10/05/22 19:44	10/12/22 10:39	1
Beryllium	ND		0.00050	0.00012	mg/L		10/05/22 19:44	10/12/22 10:39	1
Cadmium	ND		0.00050	0.00015	mg/L		10/05/22 19:44	10/12/22 10:39	1
Chromium	ND		0.0020	0.00033	mg/L		10/05/22 19:44	10/12/22 10:39	1
Lead	ND		0.00050	0.000071	mg/L		10/05/22 19:44	10/12/22 10:39	1
Nickel	ND		0.0010	0.00040	mg/L		10/05/22 19:44	10/12/22 10:39	1
Selenium	ND	^+	0.0010	0.00028	mg/L		10/05/22 19:44	10/12/22 10:39	1
Sodium	ND		0.20	0.090	mg/L		10/05/22 19:44	10/12/22 10:39	1

**Lab Sample ID: LCS 410-303577/2-A**  
**Matrix: Water**  
**Analysis Batch: 305815**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303577**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	5000	5120		ug/L		102	87 - 119
Arsenic	0.500	0.486		mg/L		97	85 - 120
Barium	0.500	0.518		mg/L		104	80 - 120
Beryllium	0.0500	0.0486		mg/L		97	90 - 112
Cadmium	0.0500	0.0510		mg/L		102	86 - 113
Chromium	0.500	0.526		mg/L		105	90 - 115
Lead	0.0500	0.0514		mg/L		103	90 - 115
Nickel	0.500	0.495		mg/L		99	90 - 114
Selenium	0.100	0.105	^+	mg/L		105	80 - 120
Sodium	5.00	5.16		mg/L		103	89 - 112

**Lab Sample ID: MB 410-303581/1-A**  
**Matrix: Water**  
**Analysis Batch: 306267**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303581**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		25	12	ug/L		10/05/22 19:52	10/13/22 09:57	1
Arsenic	ND		0.0020	0.00068	mg/L		10/05/22 19:52	10/13/22 09:57	1
Barium	ND		0.0020	0.00075	mg/L		10/05/22 19:52	10/13/22 09:57	1
Beryllium	ND	^5- ^+	0.00050	0.00012	mg/L		10/05/22 19:52	10/13/22 09:57	1
Cadmium	ND		0.00050	0.00015	mg/L		10/05/22 19:52	10/13/22 09:57	1
Chromium	ND		0.0020	0.00033	mg/L		10/05/22 19:52	10/13/22 09:57	1
Lead	ND		0.00050	0.000071	mg/L		10/05/22 19:52	10/13/22 09:57	1
Nickel	ND		0.0010	0.00040	mg/L		10/05/22 19:52	10/13/22 09:57	1
Selenium	ND		0.0010	0.00028	mg/L		10/05/22 19:52	10/13/22 09:57	1
Sodium	ND		0.20	0.090	mg/L		10/05/22 19:52	10/13/22 09:57	1

**Lab Sample ID: LCS 410-303581/2-A**  
**Matrix: Water**  
**Analysis Batch: 306267**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303581**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	5000	5060		ug/L		101	87 - 119
Arsenic	0.500	0.486		mg/L		97	85 - 120

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: 6020B - Metals (ICP/MS) (Continued)

**Lab Sample ID: LCS 410-303581/2-A**  
**Matrix: Water**  
**Analysis Batch: 306267**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 303581**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.500	0.506		mg/L		101	80 - 120
Cadmium	0.0500	0.0502		mg/L		100	86 - 113
Chromium	0.500	0.503		mg/L		101	90 - 115
Lead	0.0500	0.0502		mg/L		100	90 - 115
Nickel	0.500	0.509		mg/L		102	90 - 114
Selenium	0.100	0.103		mg/L		103	80 - 120
Sodium	5.00	5.08		mg/L		102	89 - 112

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 410-303587/1-A**  
**Matrix: Water**  
**Analysis Batch: 303940**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 303587**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.000079	mg/L		10/05/22 20:59	10/06/22 13:45	1

**Lab Sample ID: LCS 410-303587/2-A**  
**Matrix: Water**  
**Analysis Batch: 303940**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 303587**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00100	0.000960		mg/L		96	80 - 118

**Lab Sample ID: LCSD 410-303587/3-A**  
**Matrix: Water**  
**Analysis Batch: 303940**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 303587**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00100	0.000956		mg/L		96	80 - 118	0	20

**Lab Sample ID: 410-99897-1 MS**  
**Matrix: Water**  
**Analysis Batch: 303940**

**Client Sample ID: MW-111-0922**  
**Prep Type: Total/NA**  
**Prep Batch: 303587**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.00100	0.000934		mg/L		93	80 - 120

**Lab Sample ID: 410-99897-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 303940**

**Client Sample ID: MW-111-0922**  
**Prep Type: Total/NA**  
**Prep Batch: 303587**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00100	0.000989		mg/L		99	80 - 120	6	20



# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 410-99897-1 DU  
Matrix: Water  
Analysis Batch: 303940

Client Sample ID: MW-111-0922  
Prep Type: Total/NA  
Prep Batch: 303587

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Mercury	ND		ND		mg/L		NC	20

## Method: 2130B-2011 - Turbidity

Lab Sample ID: MB 410-302041/3  
Matrix: Water  
Analysis Batch: 302041

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	ND		1.0	1.0	NTU			10/01/22 06:47	1

Lab Sample ID: LCS 410-302041/4  
Matrix: Water  
Analysis Batch: 302041

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	9.7		NTU		97	90 - 104

Lab Sample ID: 410-99897-2 DU  
Matrix: Water  
Analysis Batch: 302041

Client Sample ID: MW-74-0922  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Turbidity	39		39		NTU		0.8	8

## Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 410-302465/75  
Matrix: Water  
Analysis Batch: 302465

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		8.0	8.0	mg/L			10/01/22 00:28	1

Lab Sample ID: LCS 410-302465/78  
Matrix: Water  
Analysis Batch: 302465

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3 to pH 4.5	189	175		mg/L		92	82 - 106

## Method: 2510B-2011 - Conductivity, Specific Conductance

Lab Sample ID: MB 410-302466/75  
Matrix: Water  
Analysis Batch: 302466

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		5.0	1.7	umhos/cm			10/01/22 00:28	1

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: 2510B-2011 - Conductivity, Specific Conductance (Continued)

Lab Sample ID: LCS 410-302466/76  
Matrix: Water  
Analysis Batch: 302466

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Specific Conductance	1410	1430		umhos/cm		101	97 - 103

## Method: 2540C-2011 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 410-301647/1  
Matrix: Water  
Analysis Batch: 301647

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		30	12	mg/L			09/30/22 07:33	1

Lab Sample ID: LCS 410-301647/2  
Matrix: Water  
Analysis Batch: 301647

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	200	195		mg/L		98	72 - 127

## Method: 9040B - pH

Lab Sample ID: LCS 410-302467/77  
Matrix: Water  
Analysis Batch: 302467

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		S.U.		100	95 - 105

## Method: OIA-1677 - Cyanide, Free (Flow Injection)

Lab Sample ID: MB 410-301757/18  
Matrix: Water  
Analysis Batch: 301757

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free	ND		0.0060	0.0050	mg/L			09/30/22 08:40	1

Lab Sample ID: MB 410-301757/40  
Matrix: Water  
Analysis Batch: 301757

Client Sample ID: Method Blank  
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free	ND		0.0060	0.0050	mg/L			09/30/22 09:57	1

Lab Sample ID: LCS 410-301757/38  
Matrix: Water  
Analysis Batch: 301757

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Free	0.0500	0.0468		mg/L		94	86 - 132

# QC Sample Results

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Method: OIA-1677 - Cyanide, Free (Flow Injection) (Continued)

**Lab Sample ID: LCSD 410-301757/39**  
**Matrix: Water**  
**Analysis Batch: 301757**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Free	0.0500	0.0495		mg/L		99	86 - 132	5	11

**Lab Sample ID: 410-99897-6 MS**  
**Matrix: Water**  
**Analysis Batch: 301757**

**Client Sample ID: SW-D-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Free	ND	F1	0.0500	0.0392	F1	mg/L		78	82 - 130		

**Lab Sample ID: 410-99897-6 MSD**  
**Matrix: Water**  
**Analysis Batch: 301757**

**Client Sample ID: SW-D-0922**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Free	ND	F1	0.0500	0.0419		mg/L		84	82 - 130	6	11

# QC Association Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## HPLC/IC

### Analysis Batch: 302227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-2	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-3	MW-75-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-4	MW-75DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-5	EQR-SA11-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302227/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302227/64	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302227/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302227/62	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302227/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302227/63	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 302228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-2	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-5	EQR-SA11-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302228/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302228/64	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302228/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302228/62	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302228/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302228/63	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 302604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-3	MW-75-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-3	MW-75-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-4	MW-75DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-4	MW-75DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302604/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302604/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302604/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 302609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302609/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302609/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302609/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 302612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-2	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-302612/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-302612/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-302612/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	
410-99897-2 MS	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-2 DU	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	

# QC Association Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## HPLC/IC

### Analysis Batch: 305447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-10	MW-107-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-11	MW-6-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-12	MW-51-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-305447/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-305447/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-305447/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 307931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-2	MW-74-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-3	MW-75-0922	Total/NA	Water	EPA 300.0 R2.1	
410-99897-4	MW-75DUP-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-307931/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-307931/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-307931/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

### Analysis Batch: 309905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-5	EQR-SA11-0922	Total/NA	Water	EPA 300.0 R2.1	
MB 410-309905/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-309905/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-309905/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

## Metals

### Prep Batch: 303577

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	3005A	
410-99897-3	MW-75-0922	Total/NA	Water	3005A	
410-99897-4	MW-75DUP-0922	Total/NA	Water	3005A	
410-99897-5	EQR-SA11-0922	Total/NA	Water	3005A	
MB 410-303577/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-303577/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Prep Batch: 303581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-2	MW-74-0922	Total/NA	Water	3005A	
MB 410-303581/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-303581/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
410-99897-2 MS	MW-74-0922	Total/NA	Water	3005A	
410-99897-2 MSD	MW-74-0922	Total/NA	Water	3005A	
410-99897-2 DU	MW-74-0922	Total/NA	Water	3005A	

### Prep Batch: 303587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	7470A	
410-99897-2	MW-74-0922	Total/NA	Water	7470A	
410-99897-3	MW-75-0922	Total/NA	Water	7470A	
410-99897-4	MW-75DUP-0922	Total/NA	Water	7470A	
410-99897-5	EQR-SA11-0922	Total/NA	Water	7470A	

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Association Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## Metals (Continued)

### Prep Batch: 303587 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-303587/1-A	Method Blank	Total/NA	Water	7470A	
LCS 410-303587/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 410-303587/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	
410-99897-1 MS	MW-111-0922	Total/NA	Water	7470A	
410-99897-1 MSD	MW-111-0922	Total/NA	Water	7470A	
410-99897-1 DU	MW-111-0922	Total/NA	Water	7470A	

### Analysis Batch: 303940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	7470A	303587
410-99897-2	MW-74-0922	Total/NA	Water	7470A	303587
410-99897-3	MW-75-0922	Total/NA	Water	7470A	303587
410-99897-4	MW-75DUP-0922	Total/NA	Water	7470A	303587
410-99897-5	EQR-SA11-0922	Total/NA	Water	7470A	303587
MB 410-303587/1-A	Method Blank	Total/NA	Water	7470A	303587
LCS 410-303587/2-A	Lab Control Sample	Total/NA	Water	7470A	303587
LCSD 410-303587/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	303587
410-99897-1 MS	MW-111-0922	Total/NA	Water	7470A	303587
410-99897-1 MSD	MW-111-0922	Total/NA	Water	7470A	303587
410-99897-1 DU	MW-111-0922	Total/NA	Water	7470A	303587

### Analysis Batch: 305815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	6020B	303577
410-99897-3	MW-75-0922	Total/NA	Water	6020B	303577
410-99897-4	MW-75DUP-0922	Total/NA	Water	6020B	303577
410-99897-5	EQR-SA11-0922	Total/NA	Water	6020B	303577
MB 410-303577/1-A	Method Blank	Total Recoverable	Water	6020B	303577
LCS 410-303577/2-A	Lab Control Sample	Total Recoverable	Water	6020B	303577

### Analysis Batch: 305934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	6020B	303577
410-99897-3	MW-75-0922	Total/NA	Water	6020B	303577
410-99897-4	MW-75DUP-0922	Total/NA	Water	6020B	303577
410-99897-5	EQR-SA11-0922	Total/NA	Water	6020B	303577

### Analysis Batch: 306267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-2	MW-74-0922	Total/NA	Water	6020B	303581
MB 410-303581/1-A	Method Blank	Total Recoverable	Water	6020B	303581
LCS 410-303581/2-A	Lab Control Sample	Total Recoverable	Water	6020B	303581
410-99897-2 MS	MW-74-0922	Total/NA	Water	6020B	303581
410-99897-2 MSD	MW-74-0922	Total/NA	Water	6020B	303581
410-99897-2 DU	MW-74-0922	Total/NA	Water	6020B	303581

## General Chemistry

### Analysis Batch: 301647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	2540C-2011	

Eurofins Lancaster Laboratories Environment Testing, LLC

# QC Association Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## General Chemistry (Continued)

### Analysis Batch: 301647 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-2	MW-74-0922	Total/NA	Water	2540C-2011	
410-99897-3	MW-75-0922	Total/NA	Water	2540C-2011	
410-99897-4	MW-75DUP-0922	Total/NA	Water	2540C-2011	
410-99897-5	EQR-SA11-0922	Total/NA	Water	2540C-2011	
MB 410-301647/1	Method Blank	Total/NA	Water	2540C-2011	
LCS 410-301647/2	Lab Control Sample	Total/NA	Water	2540C-2011	

### Analysis Batch: 301757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-6	SW-D-0922	Total/NA	Water	OIA-1677	
410-99897-7	SW-E-0922	Total/NA	Water	OIA-1677	
410-99897-8	SW-I-0922	Total/NA	Water	OIA-1677	
410-99897-9	TUSCARORA CREEK DUP	Total/NA	Water	OIA-1677	
MB 410-301757/18	Method Blank	Total/NA	Water	OIA-1677	
MB 410-301757/40	Method Blank	Total/NA	Water	OIA-1677	
LCS 410-301757/38	Lab Control Sample	Total/NA	Water	OIA-1677	
LCS 410-301757/39	Lab Control Sample Dup	Total/NA	Water	OIA-1677	
410-99897-6 MS	SW-D-0922	Total/NA	Water	OIA-1677	
410-99897-6 MSD	SW-D-0922	Total/NA	Water	OIA-1677	

### Analysis Batch: 302041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	2130B-2011	
410-99897-2	MW-74-0922	Total/NA	Water	2130B-2011	
410-99897-3	MW-75-0922	Total/NA	Water	2130B-2011	
410-99897-4	MW-75DUP-0922	Total/NA	Water	2130B-2011	
410-99897-5	EQR-SA11-0922	Total/NA	Water	2130B-2011	
MB 410-302041/3	Method Blank	Total/NA	Water	2130B-2011	
LCS 410-302041/4	Lab Control Sample	Total/NA	Water	2130B-2011	
410-99897-2 DU	MW-74-0922	Total/NA	Water	2130B-2011	

### Analysis Batch: 302465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	2320B-2011	
410-99897-2	MW-74-0922	Total/NA	Water	2320B-2011	
410-99897-3	MW-75-0922	Total/NA	Water	2320B-2011	
410-99897-4	MW-75DUP-0922	Total/NA	Water	2320B-2011	
410-99897-5	EQR-SA11-0922	Total/NA	Water	2320B-2011	
MB 410-302465/75	Method Blank	Total/NA	Water	2320B-2011	
LCS 410-302465/78	Lab Control Sample	Total/NA	Water	2320B-2011	

### Analysis Batch: 302466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	2510B-2011	
410-99897-2	MW-74-0922	Total/NA	Water	2510B-2011	
410-99897-3	MW-75-0922	Total/NA	Water	2510B-2011	
410-99897-4	MW-75DUP-0922	Total/NA	Water	2510B-2011	
410-99897-5	EQR-SA11-0922	Total/NA	Water	2510B-2011	
MB 410-302466/75	Method Blank	Total/NA	Water	2510B-2011	
LCS 410-302466/76	Lab Control Sample	Total/NA	Water	2510B-2011	



# QC Association Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

## General Chemistry

### Analysis Batch: 302467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-99897-1	MW-111-0922	Total/NA	Water	9040B	
410-99897-2	MW-74-0922	Total/NA	Water	9040B	
410-99897-3	MW-75-0922	Total/NA	Water	9040B	
410-99897-4	MW-75DUP-0922	Total/NA	Water	9040B	
410-99897-5	EQR-SA11-0922	Total/NA	Water	9040B	
LCS 410-302467/77	Lab Control Sample	Total/NA	Water	9040B	

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# Lab Chronicle

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

**Client Sample ID: MW-111-0922**

**Lab Sample ID: 410-99897-1**

**Date Collected: 09/29/22 09:00**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	302609	L4QM	ELLE	10/04/22 05:54
Total/NA	Analysis	EPA 300.0 R2.1		5	302227	L4QM	ELLE	10/01/22 13:54
Total/NA	Analysis	EPA 300.0 R2.1		5	302228	L4QM	ELLE	10/01/22 13:54
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 17:10
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305934	UCIG	ELLE	10/12/22 15:25
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305815	F7JF	ELLE	10/12/22 11:54
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 13:51
Total/NA	Analysis	2130B-2011		1	302041	UDS7	ELLE	10/01/22 06:47
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 02:06
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 02:06
Total/NA	Analysis	2540C-2011		1	301647	M98K	ELLE	09/30/22 07:33
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 02:06

**Client Sample ID: MW-74-0922**

**Lab Sample ID: 410-99897-2**

**Date Collected: 09/29/22 12:45**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	302227	L4QM	ELLE	10/01/22 14:11
Total/NA	Analysis	EPA 300.0 R2.1		5	302228	L4QM	ELLE	10/01/22 14:11
Total/NA	Analysis	EPA 300.0 R2.1		5	302612	L4QM	ELLE	10/04/22 18:25
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 17:21
Total/NA	Prep	3005A			303581	UAMX	ELLE	10/05/22 19:52
Total/NA	Analysis	6020B		1	306267	F7JF	ELLE	10/13/22 10:07
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:10
Total/NA	Analysis	2130B-2011		1	302041	UDS7	ELLE	10/01/22 06:47
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 02:12
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 02:12
Total/NA	Analysis	2540C-2011		1	301647	M98K	ELLE	09/30/22 07:33
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 02:12

**Client Sample ID: MW-75-0922**

**Lab Sample ID: 410-99897-3**

**Date Collected: 09/29/22 10:40**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	302604	L4QM	ELLE	10/04/22 03:47
Total/NA	Analysis	EPA 300.0 R2.1		10	302604	L4QM	ELLE	10/04/22 03:57
Total/NA	Analysis	EPA 300.0 R2.1		5	302227	L4QM	ELLE	10/01/22 14:28

Eurofins Lancaster Laboratories Environment Testing, LLC

# Lab Chronicle

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

**Client Sample ID: MW-75-0922**

**Lab Sample ID: 410-99897-3**

**Date Collected: 09/29/22 10:40**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 17:32
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305934	UCIG	ELLE	10/12/22 15:21
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305815	F7JF	ELLE	10/12/22 11:18
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:02
Total/NA	Analysis	2130B-2011		1	302041	UDS7	ELLE	10/01/22 06:47
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 02:18
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 02:18
Total/NA	Analysis	2540C-2011		1	301647	M98K	ELLE	09/30/22 07:33
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 02:18

**Client Sample ID: MW-75DUP-0922**

**Lab Sample ID: 410-99897-4**

**Date Collected: 09/29/22 00:00**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	302604	L4QM	ELLE	10/04/22 04:07
Total/NA	Analysis	EPA 300.0 R2.1		10	302604	L4QM	ELLE	10/04/22 04:17
Total/NA	Analysis	EPA 300.0 R2.1		5	302227	L4QM	ELLE	10/01/22 15:03
Total/NA	Analysis	EPA 300.0 R2.1		1	307931	L4QM	ELLE	10/18/22 17:43
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305934	UCIG	ELLE	10/12/22 15:23
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305815	F7JF	ELLE	10/12/22 11:30
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:04
Total/NA	Analysis	2130B-2011		1	302041	UDS7	ELLE	10/01/22 06:47
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 02:24
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 02:24
Total/NA	Analysis	2540C-2011		1	301647	M98K	ELLE	09/30/22 07:33
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 02:24

**Client Sample ID: EQR-SA11-0922**

**Lab Sample ID: 410-99897-5**

**Date Collected: 09/29/22 00:00**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	302227	L4QM	ELLE	10/01/22 15:20
Total/NA	Analysis	EPA 300.0 R2.1		5	302228	L4QM	ELLE	10/01/22 15:20
Total/NA	Analysis	EPA 300.0 R2.1		1	309905	L4QM	ELLE	10/24/22 23:21

# Lab Chronicle

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

**Client Sample ID: EQR-SA11-0922**

**Lab Sample ID: 410-99897-5**

**Date Collected: 09/29/22 00:00**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305934	UCIG	ELLE	10/12/22 15:19
Total/NA	Prep	3005A			303577	UAMX	ELLE	10/05/22 19:44
Total/NA	Analysis	6020B		1	305815	F7JF	ELLE	10/12/22 11:12
Total/NA	Prep	7470A			303587	UAMX	ELLE	10/05/22 20:59
Total/NA	Analysis	7470A		1	303940	UEFS	ELLE	10/06/22 14:25
Total/NA	Analysis	2130B-2011		1	302041	UDS7	ELLE	10/01/22 06:47
Total/NA	Analysis	2320B-2011		1	302465	DI9Q	ELLE	10/01/22 02:30
Total/NA	Analysis	2510B-2011		1	302466	DI9Q	ELLE	10/01/22 02:30
Total/NA	Analysis	2540C-2011		1	301647	M98K	ELLE	09/30/22 07:33
Total/NA	Analysis	9040B		1	302467	DI9Q	ELLE	10/01/22 02:30

**Client Sample ID: SW-D-0922**

**Lab Sample ID: 410-99897-6**

**Date Collected: 09/29/22 14:05**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	OIA-1677		1	301757	CBM8	ELLE	09/30/22 10:05

**Client Sample ID: SW-E-0922**

**Lab Sample ID: 410-99897-7**

**Date Collected: 09/29/22 13:35**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	OIA-1677		1	301757	CBM8	ELLE	09/30/22 10:13

**Client Sample ID: SW-I-0922**

**Lab Sample ID: 410-99897-8**

**Date Collected: 09/29/22 13:55**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	OIA-1677		1	301757	CBM8	ELLE	09/30/22 10:16

**Client Sample ID: TUSCARORA CREEK DUP**

**Lab Sample ID: 410-99897-9**

**Date Collected: 09/29/22 00:00**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	OIA-1677		1	301757	CBM8	ELLE	09/30/22 10:19

# Lab Chronicle

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

**Client Sample ID: MW-107-0922**

**Lab Sample ID: 410-99897-10**

**Date Collected: 09/29/22 09:29**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305447	L4QM	ELLE	10/11/22 20:56

**Client Sample ID: MW-6-0922**

**Lab Sample ID: 410-99897-11**

**Date Collected: 09/29/22 09:42**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305447	L4QM	ELLE	10/11/22 21:06

**Client Sample ID: MW-51-0922**

**Lab Sample ID: 410-99897-12**

**Date Collected: 09/29/22 09:01**

**Matrix: Water**

**Date Received: 09/29/22 18:53**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	EPA 300.0 R2.1		5	305447	L4QM	ELLE	10/11/22 21:39

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

# Accreditation/Certification Summary

Client: Tetra Tech, Inc.  
 Project/Site: EastAlco WW

Job ID: 410-99897-1

## Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Maryland	State	100	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2130B-2011		Water	Turbidity
2320B-2011		Water	Total Alkalinity as CaCO <sub>3</sub> to pH 4.5
2510B-2011		Water	Specific Conductance
2540C-2011		Water	Total Dissolved Solids
6020B	3005A	Water	Aluminum
6020B	3005A	Water	Arsenic
6020B	3005A	Water	Barium
6020B	3005A	Water	Beryllium
6020B	3005A	Water	Cadmium
6020B	3005A	Water	Chromium
6020B	3005A	Water	Lead
6020B	3005A	Water	Nickel
6020B	3005A	Water	Selenium
6020B	3005A	Water	Sodium
7470A	7470A	Water	Mercury
9040B		Water	pH
EPA 300.0 R2.1		Water	Chloride
EPA 300.0 R2.1		Water	Fluoride
EPA 300.0 R2.1		Water	Sulfate
OIA-1677		Water	Cyanide, Free



# Method Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

Method	Method Description	Protocol	Laboratory
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
6020B	Metals (ICP/MS)	SW846	ELLE
7470A	Mercury (CVAA)	SW846	ELLE
2130B-2011	Turbidity	SM	ELLE
2320B-2011	Alkalinity, Total	SM	ELLE
2510B-2011	Conductivity, Specific Conductance	SM	ELLE
2540C-2011	Solids, Total Dissolved (TDS)	SM	ELLE
9040B	pH	SW846	ELLE
OIA-1677	Cyanide, Free (Flow Injection)	OI CORP	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
7470A	Preparation, Mercury	SW846	ELLE

#### Protocol References:

EPA = US Environmental Protection Agency

OI CORP = OI Corporation Instrument Manual.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Tetra Tech, Inc.  
Project/Site: EastAlco WW

Job ID: 410-99897-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-99897-1	MW-111-0922	Water	09/29/22 09:00	09/29/22 18:53
410-99897-2	MW-74-0922	Water	09/29/22 12:45	09/29/22 18:53
410-99897-3	MW-75-0922	Water	09/29/22 10:40	09/29/22 18:53
410-99897-4	MW-75DUP-0922	Water	09/29/22 00:00	09/29/22 18:53
410-99897-5	EQR-SA11-0922	Water	09/29/22 00:00	09/29/22 18:53
410-99897-6	SW-D-0922	Water	09/29/22 14:05	09/29/22 18:53
410-99897-7	SW-E-0922	Water	09/29/22 13:35	09/29/22 18:53
410-99897-8	SW-I-0922	Water	09/29/22 13:55	09/29/22 18:53
410-99897-9	TUSCARORA CREEK DUP	Water	09/29/22 00:00	09/29/22 18:53
410-99897-10	MW-107-0922	Water	09/29/22 09:29	09/29/22 18:53
410-99897-11	MW-6-0922	Water	09/29/22 09:42	09/29/22 18:53
410-99897-12	MW-51-0922	Water	09/29/22 09:01	09/29/22 18:53

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**Eurofins Lancaster Laboratories Environm**

2425 New Holland Pike  
Lancaster, PA 17601  
Phone: 717-656-2300 Fax: 717-656-2681

**Chain of Custody Record**



eurofins  
Environment Testing  
America

<b>Client Information</b>		Sampler: <i>Mullis</i>		Lab PM Gordon, Stephen J		410-99897 Chain of Custody		C No 0-64743-18583 3																																																																									
Client Contact Josh Mullis		Phone: <i>410-279-2700</i>		E-Mail Stephen.Gordon@et.eurofinsus.com		<i>M7</i>		Page <i>1</i> of <i>3</i>																																																																									
Company Tetra Tech, Inc.		PWSID:		<b>Analysis Requested</b>						Job #																																																																							
Address: 20251 Century Blvd Suite 200		Due Date Requested:		<table border="1"> <tr><td>Field Filtered Sample (Yes or No)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>300_ORGFM_28D - Fluoride Only</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>300_ORGFM_28D, 300_ORGFMS</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>2320B, 2510B, 2540C, SingleDry, 9040B</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>SM2130B - Turbidity</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>6020B, 7470A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>1677_Free - Free Cyanide</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>						Field Filtered Sample (Yes or No)										300_ORGFM_28D - Fluoride Only										300_ORGFM_28D, 300_ORGFMS										2320B, 2510B, 2540C, SingleDry, 9040B										SM2130B - Turbidity										6020B, 7470A										1677_Free - Free Cyanide										Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Field Filtered Sample (Yes or No)																																																																																	
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6020B, 7470A																																																																																	
1677_Free - Free Cyanide																																																																																	
City Germantown		TAT Requested (days): <i>STANDARD</i>		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		Other:		Special Instructions/Note:																																																																									
State, Zip MD, 20874		PO #: 1188904		WO #:		Total Number of Containers																																																																											
Phone 412-921-8277(Tel)		Project #: 41001054		SSOW#:																																																																													
Email Josh Mullis@tetratech.com		Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)																																																																									
Project Name EastAlco WW		Matrix (Water, Solid, Waste/Oil, Tissue, Air)		Preservation Code		X		X																																																																									
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<b>Possible Hazard Identification</b>				<b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>																																																																													
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																																																													
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Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/29/22 1830</i>		Company:		Received by:		Date/Time:																																																																									
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: <i>9-29-22 1853</i>																																																																									
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>4.1</i>																																																																													

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Chain of Custody Record

<b>Client Information</b>		Sampler: <i>Mullis/Musser</i>		Lab PM: Gordon, Stephen J		Camer Tracking No(s)		COC No: 410-64743-18583 4	
Client Contact: Josh Mullis		Phone: 410-279-2900		E-Mail: Stephen.Gordon@et.eurofinsus.com		State of Origin: <i>MD</i>		Page: <del>4 of 4</del> 2 of 3	
Company: Tetra Tech, Inc.				PWSID		<b>Analysis Requested</b>			
Address: 20251 Century Blvd Suite 200		Due Date Requested:		T NO 300_ORGFM_28D - Flouride Only 300_ORGFM_28D, 300_ORGFMS 2320B, 2510B, 2540C, SingleDry, 9040B SM2130B - Turbidity 6020B, 7470A 1877_Free - Free Cyanide		Job #		<b>Preservation Codes:</b> A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trnzma Z - other (specify)	
City: Germantown		TAT Requested (days): <i>Standard</i>							
State, Zip: MD, 20874		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No							
Phone: 412-921-8277(Tel)		PO #: 1188904							
Email: Josh.Mullis@tetratech.com		WO #:							
Project Name: EastAlco WW		Project #: 41001054		SSOW#:		<b>Special Instructions/Note:</b>			
Site:									
<b>Sample Identification</b>		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=metal/oil, BT=Tissue, A=Air)	Preserv	ion Code		
<i>D SW-D-0922</i>		<i>9/29/22</i>	<i>1405</i>	<i>G</i>	<i>Water</i>			<i>K</i>	
<i>E SW-E-0922</i>		<i>↓</i>	<i>1335</i>	<i>↓</i>	<i>Water</i>			<i>K</i>	
<i>T SW-T-0922</i>		<i>↓</i>	<i>1355</i>	<i>↓</i>	<i>Water</i>			<i>K</i>	
TUSCARORA CREEK DUP		<i>↓</i>	<i>0000</i>	<i>↓</i>	<i>Water</i>			<i>K</i>	
					<i>Water</i>				
<b>Possible Hazard Identification</b>					<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>				
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Deliverable Requested I, II, III, IV, Other (specify)					Special Instructions/QC Requirements:				
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/29/22</i>		Company: <i>TH</i>		Received by: <i>[Signature]</i>		Date/Time: <i>9/29/22 1505</i>	
Relinquished by: <i>[Signature]</i>		Date/Time: <i>9/29/22 1830</i>		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: <i>9/29/22 1853</i>	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: <i>4.1</i>					

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# Chain of Custody Record

<b>Client Information</b>		Sampler: <i>Mullis/Muller</i>		Lab PM: Gordon, Stephen J		Carrier Tracking No(s)		COC No: 410-64743-18583 1										
Client Contact: Josh Mullis		Phone: <i>410-279-2700</i>		E-Mail: Stephen.Gordon@et.eurofinsus.com		State of Origin: <i>MD</i>		Page: <i>4 of 4</i> of <i>3 of 3</i>										
Company: Tetra Tech, Inc.		PWSID		<b>Analysis Requested</b>						Job #:								
Address: 20251 Century Blvd Suite 200		Due Date Requested:		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Filtration Method (Y/N)</td> <td>300_ORGFM_28D - Flouride Only</td> <td>300_ORGFM_28D, 300_ORGFMS</td> <td>2320B, 2510B, 2540C - SingleDry, 9040B</td> <td>SM2130B - Turbidity</td> <td>6020B, 7470A</td> <td>1677_Free - Free Cyanide</td> </tr> </table>						Filtration Method (Y/N)	300_ORGFM_28D - Flouride Only	300_ORGFM_28D, 300_ORGFMS	2320B, 2510B, 2540C - SingleDry, 9040B	SM2130B - Turbidity	6020B, 7470A	1677_Free - Free Cyanide	Preservation Codes:	
Filtration Method (Y/N)	300_ORGFM_28D - Flouride Only	300_ORGFM_28D, 300_ORGFMS	2320B, 2510B, 2540C - SingleDry, 9040B							SM2130B - Turbidity	6020B, 7470A	1677_Free - Free Cyanide						
City: Germantown		TAT Requested (days): <i>Standard</i>								A - HCL		M - Hexane						
State, Zip: MD, 20874		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No								B - NaOH		N - None						
Phone: 412-921-8277(Tel)		PO #: 1188904								C - Zn Acetate		O - AsNaO2						
Email: Josh.Mullis@tetratech.com		WO #:		D - Nitric Acid		P - Na2O4S												
Project Name: EastAlco WW		Project #: 41001054		E - NaHSO4		Q - Na2SO3												
Site:		SSOW#:		F - MeOH		R - Na2S2O3												
				G - Amchlor		S - H2SO4												
				H - Ascorbic Acid		T - TSP Dodecahydrate												
				I - Ice		U - Acetone												
				J - DI Water		V - MCAA												
				K - EDTA		W - pH 4-5												
				L - EDA		Y - Trizma												
				Other:		Z - other (specify)												

**Sample Identification**		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Total Number of containers	
										Special Instructions/Note:	
										Preservation Code: X X N N N N N D B	
*JM* MW-13		*MW-107-0922*		*9/29/22*		*0929*		*6*		Water	
RW-29		*MW-6-0922*		*↓*		*0942*		*6*		Water	
RW-29 DUP		*MW-51-0922*		*↓*		*0901*		*6*		Water	
MW-45										Water	
MW-51										Water	
MW-52										Water	
MW-56										Water	
MW-60										Water	
MW-62										Water	
MW-72										Water	
MW-103										Water	
**Possible Hazard Identification**						**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**					
Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological						Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months					
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:					
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:			
Relinquished by: *[Signature]*		Date/Time: *9/29/22*		Company:		Received by: *[Signature]*		Date/Time: *9/29/22 1505*		Company:	
Relinquished by: *[Signature]*		Date/Time: *9/29/22 1830*		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by: *[Signature]*		Date/Time: *9-29-22 1855*		Company: *ELLE*	
Custody Seals Intact:  Yes  No		Custody Seal No.:		Cooler Temperature(s)°C and Other Remarks: *4-1*							


# Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 410-99897-1

**Login Number: 99897**

**List Source: Eurofins Lancaster Laboratories Environment Testing, LLC**

**List Number: 1**

**Creator: Jeremiah, Cory T**

<b>Question</b>	<b>Answer</b>	<b>Comment</b>
The cooler's custody seal is intact.	N/A	Not present.
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	Not present.
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

## APPENDIX B

### SOUTH LANDFILL HISTORICAL GROUNDWATER ANALYTICAL DATA SUMMARY

Appendix B  
Quantum Maryland, LLC  
South Landfill Historical Groundwater Analytical Data Summary

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
1/26/83	Total Fluoride	4	0.69	mg/L
2/16/83	Total Fluoride	4	0.74	mg/L
2/24/83	Total Fluoride	4	0.99	mg/L
3/3/83	Total Fluoride	4	0.86	mg/L
3/15/83	Total Fluoride	4	0.75	mg/L
3/17/83	Total Fluoride	4	0.71	mg/L
3/23/83	Total Fluoride	4	0.67	mg/L
3/24/83	Total Fluoride	4	0.66	mg/L
3/29/83	Total Fluoride	4	0.51	mg/L
3/30/83	Total Fluoride	4	0.48	mg/L
4/5/83	Total Fluoride	4	0.50	mg/L
4/6/83	Total Fluoride	4	0.47	mg/L
4/14/83	Total Fluoride	4	0.45	mg/L
4/19/83	Total Fluoride	4	0.42	mg/L
4/21/83	Total Fluoride	4	0.48	mg/L
4/27/83	Total Fluoride	4	0.47	mg/L
5/6/83	Total Fluoride	4	0.46	mg/L
5/13/83	Total Fluoride	4	0.46	mg/L
5/19/83	Total Fluoride	4	0.57	mg/L
5/27/83	Total Fluoride	4	0.54	mg/L
6/2/83	Total Fluoride	4	0.78	mg/L
6/9/83	Total Fluoride	4	1.13	mg/L
6/17/83	Total Fluoride	4	0.48	mg/L
6/23/83	Total Fluoride	4	0.48	mg/L
7/1/83	Total Fluoride	4	0.39	mg/L
7/6/83	Total Fluoride	4	0.47	mg/L
7/13/83	Total Fluoride	4	0.54	mg/L
7/20/83	Total Fluoride	4	0.43	mg/L
7/27/83	Total Fluoride	4	0.43	mg/L
8/12/83	Total Fluoride	4	0.42	mg/L
8/16/83	Total Fluoride	4	0.47	mg/L
8/23/83	Total Fluoride	4	0.49	mg/L
8/31/83	Total Fluoride	4	0.64	mg/L
9/7/83	Total Fluoride	4	0.61	mg/L
9/13/83	Total Fluoride	4	0.49	mg/L
9/23/83	Total Fluoride	4	0.44	mg/L
9/27/83	Total Fluoride	4	0.46	mg/L
10/6/83	Total Fluoride	4	0.49	mg/L
10/13/83	Total Fluoride	4	0.54	mg/L
10/18/83	Total Fluoride	4	0.65	mg/L
11/2/83	Total Fluoride	4	0.55	mg/L
12/15/83	Total Fluoride	4	0.74	mg/L
2/20/84	Total Fluoride	4	0.36	mg/L
4/3/84	Total Fluoride	4	0.75	mg/L
6/14/84	Total Fluoride	4	0.72	mg/L
7/30/84	Total Fluoride	4	0.89	mg/L
9/6/84	Total Fluoride	4	0.81	mg/L
12/19/84	Total Fluoride	4	0.67	mg/L
3/13/85	Total Fluoride	4	0.56	mg/L
4/17/85	Total Fluoride	4	0.62	mg/L
9/6/85	Total Fluoride	4	0.67	mg/L
12/5/85	Total Fluoride	4	1.03	mg/L
3/17/86	Total Fluoride	4	1.12	mg/L
6/4/86	Total Fluoride	4	0.85	mg/L
9/9/86	Total Fluoride	4	0.87	mg/L
10/28/86	Total Fluoride	4	1.16	mg/L
3/3/87	Total Fluoride	4	0.75	mg/L
3/26/87	Total Fluoride	4	0.84	mg/L
6/5/87	Total Fluoride	4	0.71	mg/L
8/25/87	Total Fluoride	4	0.90	mg/L
10/8/87	Total Fluoride	4	1.01	mg/L
2/15/88	Total Fluoride	4	1.31	mg/L
3/16/88	Total Fluoride	4	1.07	mg/L
5/23/88	Total Fluoride	4	1.04	mg/L
6/21/88	Total Fluoride	4	0.97	mg/L
8/16/88	Total Fluoride	4	1.02	mg/L
10/19/88	Total Fluoride	4	1.04	mg/L
12/9/88	Total Fluoride	4	1.18	mg/L
1/19/89	Total Fluoride	4	1.12	mg/L
4/20/89	Total Fluoride	4	0.87	mg/L
7/11/89	Total Fluoride	4	1.10	mg/L
10/3/89	Total Fluoride	4	1.00	mg/L
3/5/90	Total Fluoride	4	1.10	mg/L
4/10/90	Total Fluoride	4	1.03	mg/L
8/13/90	Total Fluoride	4	1.12	mg/L
10/18/90	Total Fluoride	4	1.19	mg/L
9/9/91	Total Fluoride	4	1.17	mg/L

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
10/10/91	Total Fluoride	4	1.08	mg/L
2/17/92	Total Fluoride	4	1.16	mg/L
5/18/92	Total Fluoride	4	1.14	mg/L
8/17/92	Total Fluoride	4	1.28	mg/L
10/19/92	Total Fluoride	4	1.30	mg/L
1/29/93	Total Fluoride	4	1.30	mg/L
4/19/93	Total Fluoride	4	1.42	mg/L
8/12/93	Total Fluoride	4	0.98	mg/L
11/3/93	Total Fluoride	4	1.18	mg/L
3/1/94	Total Fluoride	4	1.30	mg/L
6/15/94	Total Fluoride	4	1.41	mg/L
7/18/94	Total Fluoride	4	1.31	mg/L
10/26/94	Total Fluoride	4	1.44	mg/L
1/30/95	Total Fluoride	4	1.45	mg/L
4/17/95	Total Fluoride	4	1.28	mg/L
7/19/95	Total Fluoride	4	1.44	mg/L
11/21/95	Total Fluoride	4	1.48	mg/L
2/26/96	Total Fluoride	4	1.58	mg/L
4/5/96	Total Fluoride	4	1.44	mg/L
9/24/96	Total Fluoride	4	1.50	mg/L
11/12/96	Total Fluoride	4	1.40	mg/L
3/11/97	Total Fluoride	4	1.28	mg/L
6/9/97	Total Fluoride	4	1.42	mg/L
9/9/97	Total Fluoride	4	1.34	mg/L
11/4/97	Total Fluoride	4	1.38	mg/L
3/19/98	Total Fluoride	4	1.49	mg/L
6/3/98	Total Fluoride	4	1.36	mg/L
9/15/98	Total Fluoride	4	1.30	mg/L
10/28/98	Total Fluoride	4	1.28	mg/L
3/18/99	Total Fluoride	4	1.39	mg/L
4/14/99	Total Fluoride	4	1.43	mg/L
9/28/99	Total Fluoride	4	1.38	mg/L
12/7/99	Total Fluoride	4	1.46	mg/L
3/31/00	Total Fluoride	4	1.42	mg/L
6/23/00	Total Fluoride	4	1.41	mg/L
9/27/00	Total Fluoride	4	1.47	mg/L
12/5/00	Total Fluoride	4	1.59	mg/L
3/27/01	Total Fluoride	4	1.48	mg/L
6/25/01	Total Fluoride	4	1.44	mg/L
9/25/01	Total Fluoride	4	1.42	mg/L
12/13/01	Total Fluoride	4	1.43	mg/L
2/19/02	Total Fluoride	4	1.34	mg/L
6/18/02	Total Fluoride	4	1.32	mg/L
9/24/02	Total Fluoride	4	1.31	mg/L
12/30/02	Total Fluoride	4	1.37	mg/L
3/21/03	Total Fluoride	4	1.38	mg/L
6/25/03	Total Fluoride	4	1.29	mg/L
9/24/03	Total Fluoride	4	1.28	mg/L
12/29/03	Total Fluoride	4	1.41	mg/L
3/29/04	Total Fluoride	4	1.53	mg/L
6/23/04	Total Fluoride	4	1.50	mg/L
9/29/04	Total Fluoride	4	1.61	mg/L
12/13/04	Total Fluoride	4	1.62	mg/L
3/24/05	Total Fluoride	4	1.65	mg/L
6/21/05	Total Fluoride	4	1.92	mg/L
9/19/05	Total Fluoride	4	1.52	mg/L
11/15/05	Total Fluoride	4	1.29	mg/L
3/9/06	Total Fluoride	4	1.50	mg/L
6/12/06	Total Fluoride	4	1.50	mg/L
8/22/06	Total Fluoride	4	0.63	mg/L
9/12/07	Total Fluoride	4	1.50	mg/L
9/25/08	Total Fluoride	4	1.80	mg/L
8/26/09	Total Fluoride	4	10.40	mg/L
8/24/10	Total Fluoride	4	1.40	mg/L
8/23/11	Total Fluoride	4	1.40	mg/L
8/21/12	Total Fluoride	4	1.90	mg/L
8/27/13	Total Fluoride	4	1.70	mg/L
9/9/14	Total Fluoride	4	1.30	mg/L
8/17/15	Total Fluoride	4	1.50	mg/L
9/22/16	Total Fluoride	4	2.00	mg/L
9/7/17	Total Fluoride	4	2.10	mg/L
9/26/18	Total Fluoride	4	2.50	mg/L
8/29/19	Total Fluoride	4	2.40	mg/L
9/10/20	Total Fluoride	4	2.80	mg/L
9/22/21	Total Fluoride	4	2.40	mg/L
9/27/22	Total Fluoride	4	2.40	mg/L



Appendix B  
Quantum Maryland, LLC  
South Landfill Historical Groundwater Analytical Data Summary

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
1/26/83	Total Fluoride	6	3.30	mg/L
2/16/83	Total Fluoride	6	3.60	mg/L
2/24/83	Total Fluoride	6	2.70	mg/L
3/3/83	Total Fluoride	6	2.80	mg/L
3/15/83	Total Fluoride	6	2.45	mg/L
3/17/83	Total Fluoride	6	2.35	mg/L
3/23/83	Total Fluoride	6	2.30	mg/L
3/24/83	Total Fluoride	6	3.05	mg/L
3/29/83	Total Fluoride	6	2.55	mg/L
3/30/83	Total Fluoride	6	2.45	mg/L
4/5/83	Total Fluoride	6	2.35	mg/L
4/6/83	Total Fluoride	6	2.55	mg/L
4/14/83	Total Fluoride	6	2.00	mg/L
4/19/83	Total Fluoride	6	1.75	mg/L
4/21/83	Total Fluoride	6	2.08	mg/L
4/27/83	Total Fluoride	6	2.46	mg/L
5/6/83	Total Fluoride	6	2.34	mg/L
5/13/83	Total Fluoride	6	1.64	mg/L
5/19/83	Total Fluoride	6	1.84	mg/L
5/27/83	Total Fluoride	6	1.89	mg/L
6/2/83	Total Fluoride	6	2.19	mg/L
6/9/83	Total Fluoride	6	2.12	mg/L
6/17/83	Total Fluoride	6	4.20	mg/L
6/23/83	Total Fluoride	6	2.60	mg/L
7/1/83	Total Fluoride	6	3.34	mg/L
7/6/83	Total Fluoride	6	2.94	mg/L
7/13/83	Total Fluoride	6	3.20	mg/L
7/20/83	Total Fluoride	6	4.05	mg/L
7/27/83	Total Fluoride	6	4.05	mg/L
8/12/83	Total Fluoride	6	4.20	mg/L
8/16/83	Total Fluoride	6	4.10	mg/L
8/23/83	Total Fluoride	6	4.05	mg/L
8/31/83	Total Fluoride	6	4.20	mg/L
9/7/83	Total Fluoride	6	3.90	mg/L
9/13/83	Total Fluoride	6	3.95	mg/L
9/23/83	Total Fluoride	6	4.20	mg/L
9/27/83	Total Fluoride	6	3.95	mg/L
10/6/83	Total Fluoride	6	3.95	mg/L
10/13/83	Total Fluoride	6	3.90	mg/L
10/18/83	Total Fluoride	6	3.80	mg/L
11/2/83	Total Fluoride	6	3.85	mg/L
12/15/83	Total Fluoride	6	2.75	mg/L
2/20/84	Total Fluoride	6	2.65	mg/L
4/3/84	Total Fluoride	6	2.62	mg/L
6/14/84	Total Fluoride	6	2.50	mg/L
7/30/84	Total Fluoride	6	4.05	mg/L
9/6/84	Total Fluoride	6	5.37	mg/L
9/18/84	Total Fluoride	6	4.30	mg/L
12/19/84	Total Fluoride	6	3.80	mg/L
3/13/85	Total Fluoride	6	3.90	mg/L
4/17/85	Total Fluoride	6	3.70	mg/L
9/6/85	Total Fluoride	6	3.70	mg/L
12/5/85	Total Fluoride	6	4.70	mg/L
3/17/86	Total Fluoride	6	3.10	mg/L
6/5/86	Total Fluoride	6	4.30	mg/L
12/8/86	Total Fluoride	6	3.55	mg/L
3/3/87	Total Fluoride	6	2.80	mg/L
3/26/87	Total Fluoride	6	3.25	mg/L
6/5/87	Total Fluoride	6	2.90	mg/L
8/25/87	Total Fluoride	6	3.40	mg/L
10/8/87	Total Fluoride	6	3.60	mg/L
2/15/88	Total Fluoride	6	3.40	mg/L
3/16/88	Total Fluoride	6	3.20	mg/L
5/24/88	Total Fluoride	6	3.30	mg/L
6/21/88	Total Fluoride	6	3.35	mg/L
8/16/88	Total Fluoride	6	3.40	mg/L
10/19/88	Total Fluoride	6	3.75	mg/L
12/9/88	Total Fluoride	6	3.15	mg/L
1/25/89	Total Fluoride	6	3.50	mg/L
4/20/89	Total Fluoride	6	2.90	mg/L
7/12/89	Total Fluoride	6	3.55	mg/L
10/3/89	Total Fluoride	6	3.45	mg/L
3/5/90	Total Fluoride	6	3.25	mg/L
4/10/90	Total Fluoride	6	3.55	mg/L
8/13/90	Total Fluoride	6	2.10	mg/L
10/18/90	Total Fluoride	6	4.70	mg/L
9/10/91	Total Fluoride	6	2.85	mg/L

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
10/10/91	Total Fluoride	6	1.55	mg/L
10/11/91	Total Fluoride	6	1.55	mg/L
2/17/92	Total Fluoride	6	3.80	mg/L
5/18/92	Total Fluoride	6	3.80	mg/L
8/17/92	Total Fluoride	6	4.32	mg/L
10/19/92	Total Fluoride	6	3.97	mg/L
1/29/93	Total Fluoride	6	3.77	mg/L
4/19/93	Total Fluoride	6	3.63	mg/L
8/13/93	Total Fluoride	6	3.50	mg/L
11/3/93	Total Fluoride	6	3.48	mg/L
3/1/94	Total Fluoride	6	3.44	mg/L
6/15/94	Total Fluoride	6	3.99	mg/L
7/19/94	Total Fluoride	6	3.35	mg/L
10/26/94	Total Fluoride	6	3.67	mg/L
1/30/95	Total Fluoride	6	1.63	mg/L
4/17/95	Total Fluoride	6	3.14	mg/L
7/18/95	Total Fluoride	6	3.49	mg/L
11/21/95	Total Fluoride	6	3.66	mg/L
2/26/96	Total Fluoride	6	3.31	mg/L
4/5/96	Total Fluoride	6	3.04	mg/L
9/24/96	Total Fluoride	6	3.10	mg/L
12/18/96	Total Fluoride	6	3.02	mg/L
3/11/97	Total Fluoride	6	2.88	mg/L
6/9/97	Total Fluoride	6	3.09	mg/L
9/12/97	Total Fluoride	6	3.30	mg/L
10/30/97	Total Fluoride	6	3.47	mg/L
3/19/98	Total Fluoride	6	2.91	mg/L
6/3/98	Total Fluoride	6	2.90	mg/L
9/15/98	Total Fluoride	6	3.35	mg/L
10/28/98	Total Fluoride	6	3.16	mg/L
3/18/99	Total Fluoride	6	3.31	mg/L
4/14/99	Total Fluoride	6	3.26	mg/L
9/27/99	Total Fluoride	6	4.17	mg/L
12/7/99	Total Fluoride	6	4.40	mg/L
3/31/00	Total Fluoride	6	3.55	mg/L
6/23/00	Total Fluoride	6	3.69	mg/L
9/27/00	Total Fluoride	6	4.01	mg/L
12/5/00	Total Fluoride	6	3.79	mg/L
3/27/01	Total Fluoride	6	3.70	mg/L
6/25/01	Total Fluoride	6	3.65	mg/L
9/25/01	Total Fluoride	6	3.35	mg/L
12/12/01	Total Fluoride	6	3.36	mg/L
2/19/02	Total Fluoride	6	4.41	mg/L
6/18/02	Total Fluoride	6	4.49	mg/L
9/25/02	Total Fluoride	6	2.56	mg/L
12/30/02	Total Fluoride	6	4.82	mg/L
3/21/03	Total Fluoride	6	4.08	mg/L
6/25/03	Total Fluoride	6	3.36	mg/L
9/24/03	Total Fluoride	6	3.39	mg/L
12/29/03	Total Fluoride	6	3.58	mg/L
3/29/04	Total Fluoride	6	3.22	mg/L
6/23/04	Total Fluoride	6	2.84	mg/L
9/29/04	Total Fluoride	6	3.04	mg/L
12/13/04	Total Fluoride	6	2.95	mg/L
3/24/05	Total Fluoride	6	3.35	mg/L
6/14/05	Total Fluoride	6	3.50	mg/L
9/19/05	Total Fluoride	6	3.12	mg/L
11/15/05	Total Fluoride	6	3.66	mg/L
3/10/06	Total Fluoride	6	5.70	mg/L
6/12/06	Total Fluoride	6	3.10	mg/L
8/22/06	Total Fluoride	6	3.20	mg/L
9/13/07	Total Fluoride	6	3.40	mg/L
9/25/08	Total Fluoride	6	6.00	mg/L
8/26/09	Total Fluoride	6	4.50	mg/L
8/24/10	Total Fluoride	6	4.00	mg/L
8/23/11	Total Fluoride	6	3.60	mg/L
8/21/12	Total Fluoride	6	3.70	mg/L
8/28/13	Total Fluoride	6	3.00	mg/L
9/10/14	Total Fluoride	6	3.00	mg/L
8/19/15	Total Fluoride	6	2.80	mg/L
9/21/16	Total Fluoride	6	3.90	mg/L
9/6/17	Total Fluoride	6	4.60	mg/L
9/26/18	Total Fluoride	6	3.70	mg/L
8/29/19	Total Fluoride	6	4.10	mg/L
9/11/20	Total Fluoride	6	3.8	mg/L
9/23/21	Total Fluoride	6	3.6	mg/L
9/29/22	Total Fluoride	6	2.6	mg/L

Appendix B  
Quantum Maryland, LLC  
South Landfill Historical Groundwater Analytical Data Summary

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
1/26/83	Total Fluoride	25	1.43	mg/L
2/16/83	Total Fluoride	25	7.50	mg/L
2/24/83	Total Fluoride	25	2.80	mg/L
3/3/83	Total Fluoride	25	3.10	mg/L
3/15/83	Total Fluoride	25	1.80	mg/L
3/17/83	Total Fluoride	25	1.70	mg/L
3/23/83	Total Fluoride	25	1.70	mg/L
3/24/83	Total Fluoride	25	2.30	mg/L
3/29/83	Total Fluoride	25	1.60	mg/L
3/30/83	Total Fluoride	25	1.50	mg/L
4/5/83	Total Fluoride	25	1.45	mg/L
4/6/83	Total Fluoride	25	1.55	mg/L
4/14/83	Total Fluoride	25	1.10	mg/L
4/19/83	Total Fluoride	25	1.22	mg/L
4/21/83	Total Fluoride	25	1.44	mg/L
4/27/83	Total Fluoride	25	2.38	mg/L
5/6/83	Total Fluoride	25	0.90	mg/L
5/13/83	Total Fluoride	25	0.81	mg/L
5/19/83	Total Fluoride	25	0.92	mg/L
5/27/83	Total Fluoride	25	1.98	mg/L
6/2/83	Total Fluoride	25	1.14	mg/L
6/9/83	Total Fluoride	25	1.58	mg/L
6/17/83	Total Fluoride	25	2.15	mg/L
6/23/83	Total Fluoride	25	2.74	mg/L
7/1/83	Total Fluoride	25	4.90	mg/L
7/6/83	Total Fluoride	25	4.15	mg/L
7/13/83	Total Fluoride	25	4.35	mg/L
7/20/83	Total Fluoride	25	6.25	mg/L
7/27/83	Total Fluoride	25	6.25	mg/L
8/12/83	Total Fluoride	25	6.35	mg/L
8/23/83	Total Fluoride	25	3.05	mg/L
12/15/83	Total Fluoride	25	5.40	mg/L
2/20/84	Total Fluoride	25	2.60	mg/L
4/3/84	Total Fluoride	25	2.66	mg/L
6/14/84	Total Fluoride	25	6.45	mg/L
7/27/84	Total Fluoride	25	11.30	mg/L
7/30/84	Total Fluoride	25	10.30	mg/L
9/6/84	Total Fluoride	25	11.40	mg/L
9/18/84	Total Fluoride	25	10.80	mg/L
12/19/84	Total Fluoride	25	7.50	mg/L
3/13/85	Total Fluoride	25	9.90	mg/L
4/17/85	Total Fluoride	25	14.70	mg/L
12/5/85	Total Fluoride	25	14.30	mg/L
3/17/86	Total Fluoride	25	11.40	mg/L
12/8/86	Total Fluoride	25	14.90	mg/L
3/3/87	Total Fluoride	25	12.70	mg/L
3/26/87	Total Fluoride	25	13.70	mg/L
6/5/87	Total Fluoride	25	19.25	mg/L
10/8/87	Total Fluoride	25	24.25	mg/L
2/15/88	Total Fluoride	25	20.00	mg/L
3/18/88	Total Fluoride	25	26.25	mg/L
5/23/88	Total Fluoride	25	13.25	mg/L
6/21/88	Total Fluoride	25	15.50	mg/L
10/20/88	Total Fluoride	25	24.75	mg/L
1/19/89	Total Fluoride	25	37.20	mg/L
4/20/89	Total Fluoride	25	22.20	mg/L
7/12/89	Total Fluoride	25	26.00	mg/L
3/6/90	Total Fluoride	25	39.00	mg/L
4/11/90	Total Fluoride	25	26.30	mg/L
8/13/90	Total Fluoride	25	33.00	mg/L
9/21/90	Total Fluoride	25	22.00	mg/L
10/19/90	Total Fluoride	25	33.00	mg/L
2/17/92	Total Fluoride	25	28.20	mg/L
3/5/92	Total Fluoride	25	28.20	mg/L
5/18/92	Total Fluoride	25	31.00	mg/L
8/18/92	Total Fluoride	25	37.80	mg/L
10/20/92	Total Fluoride	25	25.40	mg/L
1/29/93	Total Fluoride	25	28.50	mg/L
4/19/93	Total Fluoride	25	20.50	mg/L

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
8/16/93	Total Fluoride	25	28.50	mg/L
11/5/93	Total Fluoride	25	19.70	mg/L
3/1/94	Total Fluoride	25	8.22	mg/L
6/15/94	Total Fluoride	25	47.60	mg/L
7/19/94	Total Fluoride	25	44.00	mg/L
10/26/94	Total Fluoride	25	75.10	mg/L
1/30/95	Total Fluoride	25	42.60	mg/L
4/17/95	Total Fluoride	25	51.90	mg/L
7/19/95	Total Fluoride	25	68.30	mg/L
12/6/95	Total Fluoride	25	77.30	mg/L
2/26/96	Total Fluoride	25	28.30	mg/L
4/4/96	Total Fluoride	25	21.20	mg/L
9/24/96	Total Fluoride	25	18.00	mg/L
12/18/96	Total Fluoride	25	7.43	mg/L
3/11/97	Total Fluoride	25	12.90	mg/L
6/9/97	Total Fluoride	25	32.20	mg/L
9/12/97	Total Fluoride	25	32.30	mg/L
10/30/97	Total Fluoride	25	33.10	mg/L
3/19/98	Total Fluoride	25	14.40	mg/L
6/3/98	Total Fluoride	25	15.20	mg/L
9/15/98	Total Fluoride	25	31.70	mg/L
10/29/98	Total Fluoride	25	26.80	mg/L
3/18/99	Total Fluoride	25	28.91	mg/L
4/14/99	Total Fluoride	25	16.14	mg/L
9/28/99	Total Fluoride	25	34.93	mg/L
12/7/99	Total Fluoride	25	39.77	mg/L
3/9/00	Total Fluoride	25	26.12	mg/L
6/23/00	Total Fluoride	25	34.63	mg/L
9/27/00	Total Fluoride	25	33.44	mg/L
12/5/00	Total Fluoride	25	36.66	mg/L
3/27/01	Total Fluoride	25	24.42	mg/L
6/22/01	Total Fluoride	25	25.38	mg/L
9/25/01	Total Fluoride	25	32.57	mg/L
12/28/01	Total Fluoride	25	21.88	mg/L
2/20/02	Total Fluoride	25	34.74	mg/L
6/18/02	Total Fluoride	25	34.01	mg/L
9/25/02	Total Fluoride	25	25.06	mg/L
12/31/02	Total Fluoride	25	18.70	mg/L
3/21/03	Total Fluoride	25	13.86	mg/L
6/30/03	Total Fluoride	25	10.48	mg/L
9/24/03	Total Fluoride	25	6.69	mg/L
12/29/03	Total Fluoride	25	7.26	mg/L
3/29/04	Total Fluoride	25	13.05	mg/L
6/23/04	Total Fluoride	25	9.94	mg/L
9/29/04	Total Fluoride	25	12.23	mg/L
12/13/04	Total Fluoride	25	14.66	mg/L
3/29/05	Total Fluoride	25	12.69	mg/L
6/20/05	Total Fluoride	25	16.98	mg/L
9/19/05	Total Fluoride	25	22.48	mg/L
11/15/05	Total Fluoride	25	18.08	mg/L
3/10/06	Total Fluoride	25	17.00	mg/L
6/12/06	Total Fluoride	25	35.00	mg/L
8/23/06	Total Fluoride	25	19.00	mg/L
9/12/07	Total Fluoride	25	21.00	mg/L
9/25/08	Total Fluoride	25	22.60	mg/L
8/26/09	Total Fluoride	25	20.60	mg/L
8/24/10	Total Fluoride	25	20.00	mg/L
8/23/11	Total Fluoride	25	18.00	mg/L
8/21/12	Total Fluoride	25	19.00	mg/L
8/28/13	Total Fluoride	25	21.00	mg/L
9/9/14	Total Fluoride	25	19.00	mg/L
8/19/15	Total Fluoride	25	18.00	mg/L
9/21/16	Total Fluoride	25	14.00	mg/L
9/7/17	Total Fluoride	25	17.40	mg/L
9/26/18	Total Fluoride	25	5.60	mg/L
8/26/19	Total Fluoride	25	12.60	mg/L
9/11/20	Total Fluoride	25	16.0	mg/L
9/23/21	Total Fluoride	25	7.9	mg/L
9/28/22	Total Fluoride	25	14	mg/L

Appendix B  
Quantum Maryland, LLC  
South Landfill Historical Groundwater Analytical Data Summary

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
1/26/83	Total Fluoride	26	0.46	mg/L
2/16/83	Total Fluoride	26	0.36	mg/L
2/24/83	Total Fluoride	26	0.39	mg/L
3/3/83	Total Fluoride	26	0.71	mg/L
3/15/83	Total Fluoride	26	0.31	mg/L
3/17/83	Total Fluoride	26	0.36	mg/L
3/23/83	Total Fluoride	26	0.46	mg/L
3/24/83	Total Fluoride	26	0.42	mg/L
3/29/83	Total Fluoride	26	0.31	mg/L
3/30/83	Total Fluoride	26	0.40	mg/L
4/5/83	Total Fluoride	26	0.72	mg/L
4/6/83	Total Fluoride	26	0.56	mg/L
4/14/83	Total Fluoride	26	0.75	mg/L
4/19/83	Total Fluoride	26	0.89	mg/L
4/21/83	Total Fluoride	26	1.06	mg/L
4/27/83	Total Fluoride	26	0.92	mg/L
5/6/83	Total Fluoride	26	1.20	mg/L
5/13/83	Total Fluoride	26	1.23	mg/L
5/19/83	Total Fluoride	26	1.07	mg/L
5/27/83	Total Fluoride	26	0.56	mg/L
6/2/83	Total Fluoride	26	2.58	mg/L
6/9/83	Total Fluoride	26	1.50	mg/L
6/17/83	Total Fluoride	26	1.36	mg/L
6/23/83	Total Fluoride	26	1.23	mg/L
7/1/83	Total Fluoride	26	1.34	mg/L
7/6/83	Total Fluoride	26	1.16	mg/L
7/13/83	Total Fluoride	26	1.06	mg/L
7/27/83	Total Fluoride	26	2.11	mg/L
8/12/83	Total Fluoride	26	2.06	mg/L
8/16/83	Total Fluoride	26	1.92	mg/L
8/23/83	Total Fluoride	26	2.58	mg/L
8/31/83	Total Fluoride	26	2.58	mg/L
9/7/83	Total Fluoride	26	3.80	mg/L
9/13/83	Total Fluoride	26	4.20	mg/L
9/23/83	Total Fluoride	26	3.96	mg/L
9/27/83	Total Fluoride	26	3.34	mg/L
10/6/83	Total Fluoride	26	3.95	mg/L
10/13/83	Total Fluoride	26	3.20	mg/L
10/18/83	Total Fluoride	26	4.45	mg/L
11/2/83	Total Fluoride	26	4.35	mg/L
12/15/83	Total Fluoride	26	2.30	mg/L
4/3/84	Total Fluoride	26	3.25	mg/L
6/14/84	Total Fluoride	26	3.30	mg/L
7/30/84	Total Fluoride	26	1.70	mg/L
9/6/84	Total Fluoride	26	2.10	mg/L
9/18/84	Total Fluoride	26	1.60	mg/L
12/19/84	Total Fluoride	26	1.54	mg/L
3/13/85	Total Fluoride	26	1.40	mg/L
4/17/85	Total Fluoride	26	1.40	mg/L
9/6/85	Total Fluoride	26	1.90	mg/L
12/17/85	Total Fluoride	26	2.86	mg/L
3/19/86	Total Fluoride	26	2.60	mg/L
6/5/86	Total Fluoride	26	0.75	mg/L
9/9/86	Total Fluoride	26	1.82	mg/L
10/28/86	Total Fluoride	26	1.88	mg/L
3/3/87	Total Fluoride	26	1.74	mg/L
3/26/87	Total Fluoride	26	2.60	mg/L
6/9/87	Total Fluoride	26	4.00	mg/L
8/25/87	Total Fluoride	26	4.40	mg/L
10/8/87	Total Fluoride	26	2.48	mg/L
2/15/88	Total Fluoride	26	3.94	mg/L
3/18/88	Total Fluoride	26	2.80	mg/L
5/18/88	Total Fluoride	26	3.38	mg/L
6/22/88	Total Fluoride	26	3.10	mg/L
8/17/88	Total Fluoride	26	3.25	mg/L
10/19/88	Total Fluoride	26	3.40	mg/L
11/22/88	Total Fluoride	26	3.50	mg/L
1/18/89	Total Fluoride	26	3.05	mg/L
4/20/89	Total Fluoride	26	3.00	mg/L
7/14/89	Total Fluoride	26	3.88	mg/L
10/3/89	Total Fluoride	26	3.43	mg/L
3/6/90	Total Fluoride	26	6.15	mg/L
4/11/90	Total Fluoride	26	4.15	mg/L
8/13/90	Total Fluoride	26	1.80	mg/L
10/19/90	Total Fluoride	26	4.50	mg/L
9/10/91	Total Fluoride	26	3.43	mg/L

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
10/10/91	Total Fluoride	26	4.00	mg/L
2/17/92	Total Fluoride	26	4.75	mg/L
5/19/92	Total Fluoride	26	5.10	mg/L
8/18/92	Total Fluoride	26	5.57	mg/L
10/19/92	Total Fluoride	26	4.74	mg/L
1/29/93	Total Fluoride	26	5.54	mg/L
4/19/93	Total Fluoride	26	4.89	mg/L
8/12/93	Total Fluoride	26	3.54	mg/L
11/4/93	Total Fluoride	26	4.71	mg/L
3/15/94	Total Fluoride	26	6.57	mg/L
6/15/94	Total Fluoride	26	6.35	mg/L
7/19/94	Total Fluoride	26	12.20	mg/L
10/26/94	Total Fluoride	26	5.84	mg/L
1/30/95	Total Fluoride	26	5.62	mg/L
4/17/95	Total Fluoride	26	3.95	mg/L
7/19/95	Total Fluoride	26	5.90	mg/L
11/21/95	Total Fluoride	26	4.16	mg/L
2/26/96	Total Fluoride	26	5.68	mg/L
4/4/96	Total Fluoride	26	5.03	mg/L
9/24/96	Total Fluoride	26	5.60	mg/L
12/18/96	Total Fluoride	26	5.63	mg/L
3/11/97	Total Fluoride	26	5.49	mg/L
6/9/97	Total Fluoride	26	5.31	mg/L
9/9/97	Total Fluoride	26	4.46	mg/L
10/30/97	Total Fluoride	26	6.00	mg/L
3/19/98	Total Fluoride	26	5.88	mg/L
6/3/98	Total Fluoride	26	5.08	mg/L
9/15/98	Total Fluoride	26	5.59	mg/L
10/28/98	Total Fluoride	26	5.58	mg/L
3/18/99	Total Fluoride	26	5.63	mg/L
4/14/99	Total Fluoride	26	6.27	mg/L
9/28/99	Total Fluoride	26	6.07	mg/L
12/7/99	Total Fluoride	26	5.06	mg/L
3/9/00	Total Fluoride	26	6.48	mg/L
6/23/00	Total Fluoride	26	7.85	mg/L
9/27/00	Total Fluoride	26	6.98	mg/L
12/5/00	Total Fluoride	26	6.81	mg/L
3/27/01	Total Fluoride	26	6.55	mg/L
6/22/01	Total Fluoride	26	7.48	mg/L
9/25/01	Total Fluoride	26	6.78	mg/L
12/13/01	Total Fluoride	26	6.36	mg/L
2/20/02	Total Fluoride	26	6.51	mg/L
6/18/02	Total Fluoride	26	6.05	mg/L
9/24/02	Total Fluoride	26	6.18	mg/L
12/31/02	Total Fluoride	26	5.35	mg/L
3/21/03	Total Fluoride	26	4.92	mg/L
6/30/03	Total Fluoride	26	6.96	mg/L
9/24/03	Total Fluoride	26	4.94	mg/L
12/29/03	Total Fluoride	26	5.14	mg/L
3/30/04	Total Fluoride	26	6.16	mg/L
6/23/04	Total Fluoride	26	5.95	mg/L
9/29/04	Total Fluoride	26	5.57	mg/L
12/13/04	Total Fluoride	26	6.71	mg/L
3/29/05	Total Fluoride	26	4.90	mg/L
6/16/05	Total Fluoride	26	7.63	mg/L
9/19/05	Total Fluoride	26	7.36	mg/L
11/15/05	Total Fluoride	26	5.99	mg/L
3/10/06	Total Fluoride	26	5.60	mg/L
6/12/06	Total Fluoride	26	5.90	mg/L
8/22/06	Total Fluoride	26	5.80	mg/L
9/12/07	Total Fluoride	26	3.60	mg/L
9/25/08	Total Fluoride	26	4.30	mg/L
8/26/09	Total Fluoride	26	4.70	mg/L
8/25/10	Total Fluoride	26	5.70	mg/L
8/23/11	Total Fluoride	26	4.40	mg/L
8/21/12	Total Fluoride	26	6.70	mg/L
8/29/13	Total Fluoride	26	4.10	mg/L
9/10/14	Total Fluoride	26	4.00	mg/L
8/19/15	Total Fluoride	26	52.00	mg/L
9/20/16	Total Fluoride	26	4.10	mg/L
9/7/17	Total Fluoride	26	5.20	mg/L
9/26/18	Total Fluoride	26	5.00	mg/L
8/28/19	Total Fluoride	26	5.60	mg/L
9/11/20	Total Fluoride	26	5.30	mg/L
10/19/21	Total Fluoride	26	5.50	mg/L
9/27/22	Total Fluoride	26	4.30	mg/L

Appendix B  
Quantum Maryland, LLC  
South Landfill Historical Groundwater Analytical Data Summary

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
10/15/90	Total Fluoride	66	11.00	mg/L
8/19/91	Total Fluoride	66	47.00	mg/L
10/21/91	Total Fluoride	66	72.00	mg/L
2/24/92	Total Fluoride	66	46.00	mg/L
5/19/92	Total Fluoride	66	18.00	mg/L
8/17/92	Total Fluoride	66	20.70	mg/L
10/19/92	Total Fluoride	66	21.70	mg/L
1/29/93	Total Fluoride	66	13.50	mg/L
4/19/93	Total Fluoride	66	11.90	mg/L
8/12/93	Total Fluoride	66	17.60	mg/L
11/4/93	Total Fluoride	66	22.30	mg/L
2/25/94	Total Fluoride	66	13.30	mg/L
6/15/94	Total Fluoride	66	13.90	mg/L
7/18/94	Total Fluoride	66	15.30	mg/L
10/26/94	Total Fluoride	66	17.38	mg/L
1/30/95	Total Fluoride	66	8.29	mg/L
4/17/95	Total Fluoride	66	9.18	mg/L
7/18/95	Total Fluoride	66	23.60	mg/L
11/21/95	Total Fluoride	66	13.10	mg/L
2/26/96	Total Fluoride	66	1.01	mg/L
4/4/96	Total Fluoride	66	9.39	mg/L
9/24/96	Total Fluoride	66	8.60	mg/L
11/12/96	Total Fluoride	66	9.30	mg/L
3/11/97	Total Fluoride	66	9.11	mg/L
6/10/97	Total Fluoride	66	15.30	mg/L
9/9/97	Total Fluoride	66	25.20	mg/L
10/30/97	Total Fluoride	66	26.60	mg/L
3/19/98	Total Fluoride	66	10.50	mg/L
6/3/98	Total Fluoride	66	10.60	mg/L
9/15/98	Total Fluoride	66	19.60	mg/L
10/28/98	Total Fluoride	66	22.90	mg/L
3/18/99	Total Fluoride	66	13.30	mg/L
4/14/99	Total Fluoride	66	13.24	mg/L
9/28/99	Total Fluoride	66	19.90	mg/L
11/17/99	Total Fluoride	66	15.29	mg/L
3/9/00	Total Fluoride	66	13.47	mg/L
6/23/00	Total Fluoride	66	12.97	mg/L
9/27/00	Total Fluoride	66	11.30	mg/L
12/5/00	Total Fluoride	66	11.86	mg/L
3/27/01	Total Fluoride	66	11.51	mg/L
6/22/01	Total Fluoride	66	12.34	mg/L
9/25/01	Total Fluoride	66	17.15	mg/L
12/12/01	Total Fluoride	66	19.80	mg/L
2/20/02	Total Fluoride	66	19.68	mg/L
6/18/02	Total Fluoride	66	16.12	mg/L
9/24/02	Total Fluoride	66	20.00	mg/L
12/31/02	Total Fluoride	66	13.02	mg/L
3/21/03	Total Fluoride	66	10.87	mg/L

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
6/30/03	Total Fluoride	66	9.96	mg/L
9/24/03	Total Fluoride	66	10.37	mg/L
12/29/03	Total Fluoride	66	9.02	mg/L
3/30/04	Total Fluoride	66	4.27	mg/L
6/23/04	Total Fluoride	66	8.66	mg/L
9/29/04	Total Fluoride	66	8.86	mg/L
12/14/04	Total Fluoride	66	8.33	mg/L
3/29/05	Total Fluoride	66	8.23	mg/L
6/16/05	Total Fluoride	66	8.14	mg/L
9/20/05	Total Fluoride	66	9.40	mg/L
11/15/05	Total Fluoride	66	10.38	mg/L
3/10/06	Total Fluoride	66	8.70	mg/L
6/13/06	Total Fluoride	66	23.00	mg/L
8/23/06	Total Fluoride	66	14.00	mg/L
3/12/07	Total Fluoride	66	13.00	mg/L
9/13/07	Total Fluoride	66	35.00	mg/L
3/19/08	Total Fluoride	66	14.00	mg/L
9/25/08	Total Fluoride	66	18.40	mg/L
2/23/09	Total Fluoride	66	17.10	mg/L
8/26/09	Total Fluoride	66	16.50	mg/L
8/25/10	Total Fluoride	66	16.00	mg/L
2/22/11	Total Fluoride	66	15.00	mg/L
8/23/11	Total Fluoride	66	13.00	mg/L
2/27/12	Total Fluoride	66	13.00	mg/L
8/21/12	Total Fluoride	66	18.00	mg/L
2/26/13	Total Fluoride	66	12.00	mg/L
8/27/13	Total Fluoride	66	14.00	mg/L
3/11/14	Total Fluoride	66	14.00	mg/L
9/9/14	Total Fluoride	66	14.00	mg/L
3/11/15	Total Fluoride	66	14.00	mg/L
8/19/15	Total Fluoride	66	13.00	mg/L
3/18/16	Total Fluoride	66	12.00	mg/L
9/22/16	Total Fluoride	66	12.00	mg/L
3/22/17	Total Fluoride	66	10.60	mg/L
9/6/17	Total Fluoride	66	11.10	mg/L
3/6/18	Total Fluoride	66	11.10	mg/L
9/26/18	Total Fluoride	66	11.90	mg/L
3/5/19	Total Fluoride	66	10.60	mg/L
8/29/19	Total Fluoride	66	10.90	mg/L
3/11/20	Total Fluoride	66	9.60	mg/L
9/10/20	Total Fluoride	66	9.80	mg/L
3/26/21	Total Fluoride	66	9.20	mg/L
9/22/21	Total Fluoride	66	8.70	mg/L
3/29/22	Total Fluoride	66	10.00	mg/L
9/27/22	Total Fluoride	66	9.60	mg/L

Appendix B  
Quantum Maryland, LLC  
South Landfill Historical Groundwater Analytical Data Summary

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
10/15/90	Total Fluoride	67	55.00	mg/L
8/19/91	Total Fluoride	67	38.00	mg/L
10/21/91	Total Fluoride	67	37.50	mg/L
2/24/92	Total Fluoride	67	32.00	mg/L
5/19/92	Total Fluoride	67	43.00	mg/L
8/17/92	Total Fluoride	67	45.30	mg/L
10/19/92	Total Fluoride	67	45.20	mg/L
1/29/93	Total Fluoride	67	46.70	mg/L
4/19/93	Total Fluoride	67	36.80	mg/L
8/12/93	Total Fluoride	67	43.20	mg/L
11/4/93	Total Fluoride	67	39.80	mg/L
2/25/94	Total Fluoride	67	39.50	mg/L
6/15/94	Total Fluoride	67	49.70	mg/L
7/18/94	Total Fluoride	67	40.20	mg/L
10/26/94	Total Fluoride	67	38.10	mg/L
1/30/95	Total Fluoride	67	15.40	mg/L
4/17/95	Total Fluoride	67	15.90	mg/L
7/19/95	Total Fluoride	67	30.50	mg/L
11/21/95	Total Fluoride	67	42.00	mg/L
2/26/96	Total Fluoride	67	36.80	mg/L
4/4/96	Total Fluoride	67	35.90	mg/L
9/24/96	Total Fluoride	67	34.00	mg/L
11/12/96	Total Fluoride	67	32.00	mg/L
3/11/97	Total Fluoride	67	26.90	mg/L
6/10/97	Total Fluoride	67	33.00	mg/L
9/9/97	Total Fluoride	67	34.50	mg/L
10/30/97	Total Fluoride	67	36.80	mg/L
3/19/98	Total Fluoride	67	26.30	mg/L
6/3/98	Total Fluoride	67	25.00	mg/L
9/15/98	Total Fluoride	67	29.70	mg/L
10/28/98	Total Fluoride	67	28.40	mg/L
3/18/99	Total Fluoride	67	21.06	mg/L
4/14/99	Total Fluoride	67	20.72	mg/L
9/28/99	Total Fluoride	67	17.56	mg/L
11/17/99	Total Fluoride	67	24.00	mg/L
3/9/00	Total Fluoride	67	22.60	mg/L
6/23/00	Total Fluoride	67	24.16	mg/L
9/27/00	Total Fluoride	67	25.48	mg/L
12/5/00	Total Fluoride	67	24.19	mg/L
3/27/01	Total Fluoride	67	17.05	mg/L
6/22/01	Total Fluoride	67	23.01	mg/L
9/25/01	Total Fluoride	67	15.81	mg/L
11/26/01	Total Fluoride	67	21.88	mg/L
2/20/02	Total Fluoride	67	19.01	mg/L
6/18/02	Total Fluoride	67	18.64	mg/L
9/24/02	Total Fluoride	67	17.00	mg/L
12/31/02	Total Fluoride	67	13.62	mg/L
3/21/03	Total Fluoride	67	10.08	mg/L

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
6/23/03	Total Fluoride	67	10.88	mg/L
9/24/03	Total Fluoride	67	11.52	mg/L
12/29/03	Total Fluoride	67	11.02	mg/L
3/30/04	Total Fluoride	67	11.52	mg/L
6/23/04	Total Fluoride	67	11.32	mg/L
9/29/04	Total Fluoride	67	11.29	mg/L
12/14/04	Total Fluoride	67	13.17	mg/L
3/29/05	Total Fluoride	67	8.25	mg/L
6/16/05	Total Fluoride	67	10.23	mg/L
9/20/05	Total Fluoride	67	10.78	mg/L
11/15/05	Total Fluoride	67	9.99	mg/L
3/10/06	Total Fluoride	67	11.00	mg/L
6/13/06	Total Fluoride	67	7.60	mg/L
8/23/06	Total Fluoride	67	9.20	mg/L
3/12/07	Total Fluoride	67	7.80	mg/L
9/13/07	Total Fluoride	67	8.80	mg/L
3/19/08	Total Fluoride	67	8.50	mg/L
9/25/08	Total Fluoride	67	10.90	mg/L
2/23/09	Total Fluoride	67	7.60	mg/L
8/26/09	Total Fluoride	67	8.40	mg/L
8/25/10	Total Fluoride	67	10.00	mg/L
2/22/11	Total Fluoride	67	8.40	mg/L
8/23/11	Total Fluoride	67	7.00	mg/L
2/28/12	Total Fluoride	67	6.50	mg/L
8/21/12	Total Fluoride	67	12.00	mg/L
2/26/13	Total Fluoride	67	7.20	mg/L
8/27/13	Total Fluoride	67	12.00	mg/L
3/12/14	Total Fluoride	67	4.30	mg/L
9/9/14	Total Fluoride	67	9.00	mg/L
3/10/15	Total Fluoride	67	4.60	mg/L
8/19/15	Total Fluoride	67	7.70	mg/L
3/18/16	Total Fluoride	67	4.00	mg/L
9/22/16	Total Fluoride	67	8.30	mg/L
3/22/17	Total Fluoride	67	2.90	mg/L
9/6/17	Total Fluoride	67	7.20	mg/L
3/6/18	Total Fluoride	67	4.90	mg/L
3/6/18	Total Fluoride	67	4.90	mg/L
3/5/19	Total Fluoride	67	2.80	mg/L
8/29/19	Total Fluoride	67	6.80	mg/L
3/11/20	Total Fluoride	67	4.60	mg/L
9/10/2020	Total Fluoride	67	6.50	mg/L
3/26/2021	Total Fluoride	67	12.00	mg/L
9/22/21	Total Fluoride	67	5.80	mg/L
3/29/22	Total Fluoride	67	6.70	mg/L
9/27/22	Total Fluoride	67	7.10	mg/L

Appendix B  
Quantum Maryland, LLC  
South Landfill Historical Groundwater Analytical Data Summary

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
10/15/90	Total Fluoride	68	505.00	mg/L
8/19/91	Total Fluoride	68	490.00	mg/L
10/21/91	Total Fluoride	68	485.00	mg/L
2/24/92	Total Fluoride	68	415.00	mg/L
5/19/92	Total Fluoride	68	380.00	mg/L
8/17/92	Total Fluoride	68	385.00	mg/L
10/19/92	Total Fluoride	68	360.00	mg/L
1/29/93	Total Fluoride	68	246.00	mg/L
4/19/93	Total Fluoride	68	204.00	mg/L
8/12/93	Total Fluoride	68	314.00	mg/L
11/4/93	Total Fluoride	68	330.00	mg/L
3/1/94	Total Fluoride	68	199.80	mg/L
6/15/94	Total Fluoride	68	220.00	mg/L
7/18/94	Total Fluoride	68	252.00	mg/L
10/26/94	Total Fluoride	68	162.00	mg/L
1/30/95	Total Fluoride	68	138.00	mg/L
4/17/95	Total Fluoride	68	141.00	mg/L
7/19/95	Total Fluoride	68	180.00	mg/L
12/6/95	Total Fluoride	68	126.00	mg/L
3/4/96	Total Fluoride	68	99.40	mg/L
4/4/96	Total Fluoride	68	94.70	mg/L
9/24/96	Total Fluoride	68	75.00	mg/L
10/31/96	Total Fluoride	68	97.00	mg/L
11/12/96	Total Fluoride	68	104.00	mg/L
12/31/96	Total Fluoride	68	87.71	mg/L
1/31/97	Total Fluoride	68	116.00	mg/L
2/28/97	Total Fluoride	68	111.00	mg/L
3/11/97	Total Fluoride	68	81.50	mg/L
4/30/97	Total Fluoride	68	111.00	mg/L
5/29/97	Total Fluoride	68	125.00	mg/L
6/3/97	Total Fluoride	68	112.00	mg/L
12/9/97	Total Fluoride	68	109.00	mg/L
1/26/98	Total Fluoride	68	51.10	mg/L
2/25/98	Total Fluoride	68	66.50	mg/L
3/19/98	Total Fluoride	68	54.20	mg/L
4/28/98	Total Fluoride	68	66.20	mg/L
5/27/98	Total Fluoride	68	69.10	mg/L
6/3/98	Total Fluoride	68	85.30	mg/L
7/20/98	Total Fluoride	68	109.00	mg/L
8/26/98	Total Fluoride	68	108.00	mg/L
9/15/98	Total Fluoride	68	110.00	mg/L
10/8/98	Total Fluoride	68	108.00	mg/L
11/25/98	Total Fluoride	68	112.00	mg/L
12/4/98	Total Fluoride	68	118.00	mg/L
1/28/99	Total Fluoride	68	76.12	mg/L
2/3/99	Total Fluoride	68	91.20	mg/L
3/17/99	Total Fluoride	68	70.12	mg/L
4/15/99	Total Fluoride	68	51.50	mg/L
5/26/99	Total Fluoride	68	96.58	mg/L
6/18/99	Total Fluoride	68	98.18	mg/L
7/14/99	Total Fluoride	68	96.00	mg/L
8/27/99	Total Fluoride	68	86.54	mg/L
9/23/99	Total Fluoride	68	89.00	mg/L
10/29/99	Total Fluoride	68	89.97	mg/L
11/17/99	Total Fluoride	68	95.55	mg/L
12/7/99	Total Fluoride	68	94.89	mg/L
1/31/00	Total Fluoride	68	93.45	mg/L
2/29/00	Total Fluoride	68	44.75	mg/L
3/24/00	Total Fluoride	68	53.22	mg/L
3/31/00	Total Fluoride	68	56.11	mg/L
4/6/00	Total Fluoride	68	51.53	mg/L
4/14/00	Total Fluoride	68	54.21	mg/L
4/14/00	Total Fluoride	68	141.15	mg/L
4/20/00	Total Fluoride	68	59.67	mg/L
4/26/00	Total Fluoride	68	54.46	mg/L
5/10/00	Total Fluoride	68	59.09	mg/L
7/28/00	Total Fluoride	68	87.96	mg/L
8/30/00	Total Fluoride	68	91.05	mg/L
9/22/00	Total Fluoride	68	76.44	mg/L
10/30/00	Total Fluoride	68	85.65	mg/L
11/17/00	Total Fluoride	68	89.23	mg/L
12/18/00	Total Fluoride	68	41.95	mg/L
1/31/01	Total Fluoride	68	58.22	mg/L
2/27/01	Total Fluoride	68	74.50	mg/L
3/27/01	Total Fluoride	68	46.79	mg/L
5/29/01	Total Fluoride	68	74.14	mg/L
6/22/01	Total Fluoride	68	77.99	mg/L
7/31/01	Total Fluoride	68	74.84	mg/L
8/30/01	Total Fluoride	68	83.01	mg/L
9/26/01	Total Fluoride	68	55.27	mg/L
10/25/01	Total Fluoride	68	78.08	mg/L
11/15/01	Total Fluoride	68	91.68	mg/L
12/12/01	Total Fluoride	68	85.89	mg/L
1/29/02	Total Fluoride	68	84.49	mg/L
2/20/02	Total Fluoride	68	93.75	mg/L
3/28/02	Total Fluoride	68	60.22	mg/L

DATE	ANALYSIS	WELL ID	RESULTS	UNIT
4/25/02	Total Fluoride	68	71.18	mg/L
5/23/02	Total Fluoride	68	71.61	mg/L
6/18/02	Total Fluoride	68	85.73	mg/L
7/30/02	Total Fluoride	68	83.57	mg/L
8/22/02	Total Fluoride	68	84.06	mg/L
9/24/02	Total Fluoride	68	88.00	mg/L
10/29/02	Total Fluoride	68	66.61	mg/L
11/26/02	Total Fluoride	68	30.96	mg/L
12/31/02	Total Fluoride	68	37.52	mg/L
1/29/03	Total Fluoride	68	44.32	mg/L
2/24/03	Total Fluoride	68	47.55	mg/L
3/24/03	Total Fluoride	68	33.45	mg/L
4/29/03	Total Fluoride	68	54.07	mg/L
5/27/03	Total Fluoride	68	32.67	mg/L
6/23/03	Total Fluoride	68	33.66	mg/L
7/22/03	Total Fluoride	68	60.95	mg/L
8/29/03	Total Fluoride	68	33.30	mg/L
9/24/03	Total Fluoride	68	29.22	mg/L
10/28/03	Total Fluoride	68	33.67	mg/L
11/24/03	Total Fluoride	68	28.01	mg/L
12/12/03	Total Fluoride	68	25.83	mg/L
1/24/04	Total Fluoride	68	39.64	mg/L
2/27/04	Total Fluoride	68	50.14	mg/L
3/30/04	Total Fluoride	68	41.85	mg/L
4/29/04	Total Fluoride	68	30.22	mg/L
5/27/04	Total Fluoride	68	48.45	mg/L
6/23/04	Total Fluoride	68	35.52	mg/L
7/27/04	Total Fluoride	68	51.99	mg/L
8/31/04	Total Fluoride	68	63.00	mg/L
9/29/04	Total Fluoride	68	25.32	mg/L
10/27/04	Total Fluoride	68	55.12	mg/L
11/23/04	Total Fluoride	68	50.45	mg/L
12/14/04	Total Fluoride	68	25.51	mg/L
1/26/05	Total Fluoride	68	35.43	mg/L
2/28/05	Total Fluoride	68	41.41	mg/L
3/29/05	Total Fluoride	68	25.28	mg/L
4/28/05	Total Fluoride	68	41.23	mg/L
5/27/05	Total Fluoride	68	53.87	mg/L
6/16/05	Total Fluoride	68	53.86	mg/L
7/11/05	Total Fluoride	68	33.07	mg/L
8/22/05	Total Fluoride	68	51.26	mg/L
9/20/05	Total Fluoride	68	50.86	mg/L
10/31/05	Total Fluoride	68	33.00	mg/L
11/15/05	Total Fluoride	68	51.52	mg/L
12/27/05	Total Fluoride	68	25.81	mg/L
1/3/06	Total Fluoride	68	28.88	mg/L
3/10/06	Total Fluoride	68	30.00	mg/L
6/13/06	Total Fluoride	68	71.50	mg/L
8/23/06	Total Fluoride	68	37.00	mg/L
3/12/07	Total Fluoride	68	22.00	mg/L
9/13/07	Total Fluoride	68	14.00	mg/L
3/19/08	Total Fluoride	68	26.50	mg/L
9/25/08	Total Fluoride	68	43.40	mg/L
2/23/09	Total Fluoride	68	33.90	mg/L
8/26/09	Total Fluoride	68	38.20	mg/L
8/25/10	Total Fluoride	68	39.00	mg/L
2/22/11	Total Fluoride	68	29.00	mg/L
8/23/11	Total Fluoride	68	36.00	mg/L
2/28/12	Total Fluoride	68	36.00	mg/L
8/21/12	Total Fluoride	68	42.00	mg/L
2/26/13	Total Fluoride	68	23.00	mg/L
8/27/13	Total Fluoride	68	37.00	mg/L
2/11/14	Total Fluoride	68	22.00	mg/L
9/9/14	Total Fluoride	68	33.00	mg/L
3/10/15	Total Fluoride	68	18.50	mg/L
8/19/15	Total Fluoride	68	27.00	mg/L
3/18/16	Total Fluoride	68	15.00	mg/L
9/22/16	Total Fluoride	68	24.00	mg/L
3/22/17	Total Fluoride	68	18.65	mg/L
9/6/17	Total Fluoride	68	22.15	mg/L
3/7/18	Total Fluoride	68	19.25	mg/L
8/29/19	Total Fluoride	68	21.20	mg/L
3/6/19	Total Fluoride	68	13.00	mg/L
8/29/19	Total Fluoride	68	21.20	mg/L
3/11/20	Total Fluoride	68	16.75	mg/L
9/10/2020	Total Fluoride	68	26	mg/L
3/26/2021	Total Fluoride	68	14.50	mg/L
9/22/21	Total Fluoride	68	14.00	mg/L
3/29/22	Total Fluoride	68	15.00	mg/L
9/27/22	Total Fluoride	68	19.50	mg/L