

## ANALYTICAL REPORT

Eurofins TestAmerica, Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-85119-1  
Client Project/Site: Product for Testing

For:  
Fluid Technology Solutions  
2482 Ferry Street SW  
Albany, Oregon 97322

Attn: Jason Arena



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Authorized for release by:  
4/12/2019 2:24:47 PM

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[www.testamericainc.com](http://www.testamericainc.com)

*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.*



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# Case Narrative

Client: Fluid Technology Solutions  
Project/Site: Product for Testing

Job ID: 580-85119-1

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**Job ID: 580-85119-1**

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**Laboratory: Eurofins TestAmerica, Seattle**

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**Narrative**

**Job Narrative**  
**580-85119-1**

**Comments**

No additional comments.

**Receipt**

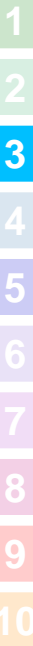
The samples were received on 4/3/2019 12:37 PM; the samples arrived in good condition, properly preserved and, where required, on ice.

**Metals**

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

**General Chemistry**

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



# Definitions/Glossary

Client: Fluid Technology Solutions  
Project/Site: Product for Testing

Job ID: 580-85119-1

## Qualifiers

### 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.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
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)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
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)

# Client Sample Results

Client: Fluid Technology Solutions  
 Project/Site: Product for Testing

Job ID: 580-85119-1

**Client Sample ID: Mariner F2O-1**

**Lab Sample ID: 580-85119-1**

Date Collected: 04/03/19 00:01

Matrix: Water

Date Received: 04/03/19 12:37

**Method: 200.7 Rev 4.4 - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	13		2.2		mg/L			04/11/19 16:12	2
Magnesium	36		2.2		mg/L			04/11/19 16:12	2
Potassium	1000		33		mg/L			04/11/19 16:26	10
Phosphorus	800		60		mg/L			04/11/19 16:26	10
Sodium	1100		20		mg/L			04/11/19 16:26	10
Strontium	0.28		0.20		mg/L			04/11/19 16:12	2

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800		90		mg/L			04/10/19 19:35	100
Bromide	ND		10		mg/L			04/10/19 19:23	10
Sulfate	50		12		mg/L			04/10/19 19:23	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	3900		10		umhos/cm			04/10/19 11:24	1
pH	2.8	HF	0.01		SU			04/10/19 17:00	1

# Client Sample Results

Client: Fluid Technology Solutions  
 Project/Site: Product for Testing

Job ID: 580-85119-1

**Client Sample ID: Mariner F2O-2**

**Lab Sample ID: 580-85119-2**

Date Collected: 04/03/19 00:01

Matrix: Water

Date Received: 04/03/19 12:37

**Method: 200.7 Rev 4.4 - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	14		2.2		mg/L			04/11/19 16:15	2
Magnesium	40		2.2		mg/L			04/11/19 16:15	2
Potassium	960		33		mg/L			04/11/19 16:29	10
Phosphorus	750		60		mg/L			04/11/19 16:29	10
Sodium	1100		20		mg/L			04/11/19 16:29	10
Strontium	0.32		0.20		mg/L			04/11/19 16:15	2

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1900		90		mg/L			04/10/19 19:58	100
Bromide	ND		10		mg/L			04/10/19 19:46	10
Sulfate	51		12		mg/L			04/10/19 19:46	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	4100		10		umhos/cm			04/10/19 11:24	1
pH	2.8	HF	0.01		SU			04/10/19 17:02	1

# Client Sample Results

Client: Fluid Technology Solutions  
 Project/Site: Product for Testing

Job ID: 580-85119-1

**Client Sample ID: Mariner F2O-3**

**Lab Sample ID: 580-85119-3**

Date Collected: 04/03/19 00:01

Matrix: Water

Date Received: 04/03/19 12:37

**Method: 200.7 Rev 4.4 - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	25		2.2		mg/L			04/11/19 16:19	2
Magnesium	73		2.2		mg/L			04/11/19 16:19	2
Potassium	1000		33		mg/L			04/11/19 16:32	10
Phosphorus	790		60		mg/L			04/11/19 16:32	10
Sodium	1500		20		mg/L			04/11/19 16:32	10
Strontium	0.58		0.20		mg/L			04/11/19 16:19	2

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2700		90		mg/L			04/10/19 20:21	100
Bromide	11		10		mg/L			04/10/19 20:10	10
Sulfate	110		12		mg/L			04/10/19 20:10	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	4400		10		umhos/cm			04/10/19 11:24	1
pH	2.7	HF	0.01		SU			04/10/19 17:03	1

# Client Sample Results

Client: Fluid Technology Solutions  
 Project/Site: Product for Testing

Job ID: 580-85119-1

**Client Sample ID: Mariner F2O-4**

**Lab Sample ID: 580-85119-4**

Date Collected: 04/03/19 00:01

Matrix: Water

Date Received: 04/03/19 12:37

**Method: 200.7 Rev 4.4 - Metals (ICP)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	31		2.2		mg/L			04/11/19 16:22	2
Magnesium	93		2.2		mg/L			04/11/19 16:22	2
Potassium	1100		33		mg/L			04/11/19 16:35	10
Phosphorus	830		60		mg/L			04/11/19 16:35	10
Sodium	1600		20		mg/L			04/11/19 16:35	10
Strontium	0.72		0.20		mg/L			04/11/19 16:22	2

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2800		90		mg/L			04/10/19 21:08	100
Bromide	11		10		mg/L			04/10/19 20:33	10
Sulfate	170		12		mg/L			04/10/19 20:33	10
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	5300		10		umhos/cm			04/10/19 11:24	1
pH	2.8	HF	0.01		SU			04/10/19 17:04	1



# QC Sample Results

Client: Fluid Technology Solutions  
Project/Site: Product for Testing

Job ID: 580-85119-1

## Method: 120.1 - Conductivity, Specific Conductance

**Lab Sample ID: MB 580-298367/1**  
**Matrix: Water**  
**Analysis Batch: 298367**

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		10		umhos/cm			04/10/19 11:24	1

**Lab Sample ID: LCS 580-298367/2**  
**Matrix: Water**  
**Analysis Batch: 298367**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	500	486		umhos/cm		97	90 - 110

**Lab Sample ID: 580-85119-1 DU**  
**Matrix: Water**  
**Analysis Batch: 298367**

**Client Sample ID: Mariner F20-1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	3900		3850		umhos/cm		0	20

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 580-298448/3**  
**Matrix: Water**  
**Analysis Batch: 298448**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.90		mg/L			04/10/19 18:48	1
Bromide	ND		1.0		mg/L			04/10/19 18:48	1
Sulfate	ND		1.2		mg/L			04/10/19 18:48	1

**Lab Sample ID: LCS 580-298448/4**  
**Matrix: Water**  
**Analysis Batch: 298448**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.9		mg/L		104	90 - 110
Bromide	10.0	10.1		mg/L		101	90 - 110
Sulfate	50.0	51.3		mg/L		103	90 - 110

**Lab Sample ID: LCSD 580-298448/5**  
**Matrix: Water**  
**Analysis Batch: 298448**

**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
Chloride	50.0	52.0		mg/L		104	90 - 110	0	15
Bromide	10.0	10.1		mg/L		101	90 - 110	0	15
Sulfate	50.0	51.4		mg/L		103	90 - 110	0	15

# QC Sample Results

Client: Fluid Technology Solutions  
Project/Site: Product for Testing

Job ID: 580-85119-1

## Method: SM 4500 H+ B - pH

Lab Sample ID: 580-85119-1 DU  
Matrix: Water  
Analysis Batch: 298440

Client Sample ID: Mariner F2O-1  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	2.8	HF	2.8		SU		0	1

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# Lab Chronicle

Client: Fluid Technology Solutions  
Project/Site: Product for Testing

Job ID: 580-85119-1

## Client Sample ID: Mariner F20-1

Lab Sample ID: 580-85119-1

Date Collected: 04/03/19 00:01

Matrix: Water

Date Received: 04/03/19 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	200.7 Rev 4.4		2	298525	04/11/19 16:12	HJM	TAL SEA
Total/NA	Analysis	200.7 Rev 4.4		10	298525	04/11/19 16:26	HJM	TAL SEA
Total/NA	Analysis	200.7 Rev 4.4		10	298525	04/11/19 16:26	HJM	TAL SEA
Total/NA	Analysis	120.1		1	298367	04/10/19 11:24	R1K	TAL SEA
Total/NA	Analysis	300.0		10	298448	04/10/19 19:23	EMM	TAL SEA
Total/NA	Analysis	300.0		100	298448	04/10/19 19:35	EMM	TAL SEA
Total/NA	Analysis	SM 4500 H+ B		1	298440	04/10/19 17:00	R1K	TAL SEA

## Client Sample ID: Mariner F20-2

Lab Sample ID: 580-85119-2

Date Collected: 04/03/19 00:01

Matrix: Water

Date Received: 04/03/19 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	200.7 Rev 4.4		2	298525	04/11/19 16:15	HJM	TAL SEA
Total/NA	Analysis	200.7 Rev 4.4		10	298525	04/11/19 16:29	HJM	TAL SEA
Total/NA	Analysis	120.1		1	298367	04/10/19 11:24	R1K	TAL SEA
Total/NA	Analysis	300.0		10	298448	04/10/19 19:46	EMM	TAL SEA
Total/NA	Analysis	300.0		100	298448	04/10/19 19:58	EMM	TAL SEA
Total/NA	Analysis	SM 4500 H+ B		1	298440	04/10/19 17:02	R1K	TAL SEA

## Client Sample ID: Mariner F20-3

Lab Sample ID: 580-85119-3

Date Collected: 04/03/19 00:01

Matrix: Water

Date Received: 04/03/19 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	200.7 Rev 4.4		2	298525	04/11/19 16:19	HJM	TAL SEA
Total/NA	Analysis	200.7 Rev 4.4		10	298525	04/11/19 16:32	HJM	TAL SEA
Total/NA	Analysis	120.1		1	298367	04/10/19 11:24	R1K	TAL SEA
Total/NA	Analysis	300.0		10	298448	04/10/19 20:10	EMM	TAL SEA
Total/NA	Analysis	300.0		100	298448	04/10/19 20:21	EMM	TAL SEA
Total/NA	Analysis	SM 4500 H+ B		1	298440	04/10/19 17:03	R1K	TAL SEA

## Client Sample ID: Mariner F20-4

Lab Sample ID: 580-85119-4

Date Collected: 04/03/19 00:01

Matrix: Water

Date Received: 04/03/19 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	200.7 Rev 4.4		2	298525	04/11/19 16:22	HJM	TAL SEA
Total/NA	Analysis	200.7 Rev 4.4		10	298525	04/11/19 16:35	HJM	TAL SEA
Total/NA	Analysis	120.1		1	298367	04/10/19 11:24	R1K	TAL SEA
Total/NA	Analysis	300.0		10	298448	04/10/19 20:33	EMM	TAL SEA

Eurofins TestAmerica, Seattle

# Lab Chronicle

Client: Fluid Technology Solutions  
Project/Site: Product for Testing

Job ID: 580-85119-1

**Client Sample ID: Mariner F2O-4**

**Lab Sample ID: 580-85119-4**

**Date Collected: 04/03/19 00:01**

**Matrix: Water**

**Date Received: 04/03/19 12:37**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	298448	04/10/19 21:08	EMM	TAL SEA
Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 H+ B		1	298440	04/10/19 17:04	R1K	TAL SEA
Total/NA	Analysis	SM 4500 H+ B		1	298440	04/10/19 17:04	R1K	TAL SEA

## Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Fluid Technology Solutions  
Project/Site: Product for Testing

Job ID: 580-85119-1

## Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-20
ANAB	DoD / DOE		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-20

# Sample Summary

Client: Fluid Technology Solutions  
Project/Site: Product for Testing

Job ID: 580-85119-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-85119-1	Mariner F2O-1	Water	04/03/19 00:01	04/03/19 12:37
580-85119-2	Mariner F2O-2	Water	04/03/19 00:01	04/03/19 12:37
580-85119-3	Mariner F2O-3	Water	04/03/19 00:01	04/03/19 12:37
580-85119-4	Mariner F2O-4	Water	04/03/19 00:01	04/03/19 12:37

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## Login Sample Receipt Checklist

Client: Fluid Technology Solutions

Job Number: 580-85119-1

**Login Number: 85119**

**List Number: 1**

**Creator: Gall, Brandon A**

**List Source: Eurofins TestAmerica, Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
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.	True	
Cooler Temperature is recorded.	True	
COC is present.	False	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	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	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

