

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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

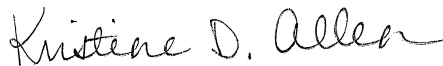
TestAmerica Job ID: 580-82435-1

Client Project/Site: Northwest Pipe Company GW Monitoring

For:

CH2M Hill, Inc.  
2020 SW 4th Ave  
Suite 300  
Portland, Oregon 97201

Attn: Bernice Kidd



Authorized for release by:  
12/24/2018 11:54:50 AM

Kristine Allen, Manager of Project Management  
(253)248-4970

[kristine.allen@testamericainc.com](mailto:kristine.allen@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[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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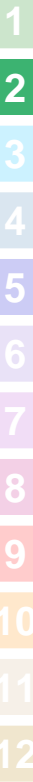
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# Case Narrative

Client: CH2M Hill, Inc.  
Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

**Job ID: 580-82435-1**

**Laboratory: TestAmerica Seattle**

## Narrative

**Job Narrative**  
**580-82435-1**

### Comments

No additional comments.

### Receipt

The samples were received on 12/7/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9° C.

### Receipt Exceptions

One VOA vial for the following sample was received empty: T4S1MW22-120618-0 (580-82435-4).

### Subcontract Work

Method TCE, cis 1,2-DCE, PCE, Vinyl Chloride - low level: This method was subcontracted to EMAX Laboratories Inc. The subcontract laboratory certification is different from that of the facility issuing the final report.

### GC VOA

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

### General Chemistry

Method(s) 300.0: Sulfate was detected in the method blank greater than the method detection limit and less than the reporting limit.

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

# Definitions/Glossary

Client: CH2M Hill, Inc.  
Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

## Qualifiers

### General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

## 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
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: CH2M Hill, Inc.  
 Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

**Client Sample ID: MW04-120618-0**

**Lab Sample ID: 580-82435-2**

Date Collected: 12/06/18 10:05

Matrix: Water

Date Received: 12/07/18 09:30

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (TCD)	2900		1000	500	ug/L			12/10/18 17:54	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.3		0.90	0.14	mg/L			12/07/18 15:50	1
NO3 as N	0.046	J F1	0.20	0.020	mg/L			12/07/18 15:50	1
Sulfate	4.1	B	1.2	0.26	mg/L			12/07/18 15:50	1
Total Organic Carbon	1.7		1.0	0.19	mg/L			12/11/18 15:32	1

# Client Sample Results

Client: CH2M Hill, Inc.  
 Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

**Client Sample ID: T4S1MW23-120618-0**

**Lab Sample ID: 580-82435-3**

Date Collected: 12/06/18 11:35

Matrix: Water

Date Received: 12/07/18 09:30

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (FID)	68		0.99	0.25	ug/L			12/10/18 18:08	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		0.90	0.14	mg/L			12/07/18 16:25	1
NO3 as N	0.42		0.20	0.020	mg/L			12/07/18 16:25	1
Sulfate	10	B	1.2	0.26	mg/L			12/07/18 16:25	1
Total Organic Carbon	0.79	J	1.0	0.19	mg/L			12/11/18 15:32	1

# Client Sample Results

Client: CH2M Hill, Inc.  
 Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

**Client Sample ID: T4S1MW22-120618-0**

**Lab Sample ID: 580-82435-4**

Date Collected: 12/06/18 12:35

Matrix: Water

Date Received: 12/07/18 09:30

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (FID)	160		0.99	0.25	ug/L			12/10/18 18:22	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.1		0.90	0.14	mg/L			12/07/18 16:37	1
NO3 as N	ND		0.20	0.020	mg/L			12/07/18 16:37	1
Sulfate	15	B	1.2	0.26	mg/L			12/07/18 16:37	1
Total Organic Carbon	1.3		1.0	0.19	mg/L			12/11/18 15:32	1

# Client Sample Results

Client: CH2M Hill, Inc.  
 Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

**Client Sample ID: MW01-120618-0**

**Lab Sample ID: 580-82435-5**

Date Collected: 12/06/18 14:15

Matrix: Water

Date Received: 12/07/18 09:30

**Method: RSK-175 - Dissolved Gases (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (FID)	620		0.99	0.25	ug/L			12/10/18 18:38	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.5		0.90	0.14	mg/L			12/07/18 16:49	1
NO3 as N	0.20		0.20	0.020	mg/L			12/07/18 16:49	1
Sulfate	8.5	B	1.2	0.26	mg/L			12/07/18 16:49	1
Total Organic Carbon	1.2		1.0	0.19	mg/L			12/11/18 15:32	1

# QC Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 440-515962/8**  
**Matrix: Water**  
**Analysis Batch: 515962**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (FID)	ND		0.99	0.25	ug/L			12/10/18 14:41	1
Methane (TCD)	ND		1000	500	ug/L			12/10/18 14:41	1

**Lab Sample ID: LCS 440-515962/4**  
**Matrix: Water**  
**Analysis Batch: 515962**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	4190	4150		ug/L		99	80 - 120

**Lab Sample ID: LCS 440-515962/6**  
**Matrix: Water**  
**Analysis Batch: 515962**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (FID)	83.9	80.1		ug/L		95	80 - 120

**Lab Sample ID: LCSD 440-515962/5**  
**Matrix: Water**  
**Analysis Batch: 515962**

**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
Methane (TCD)	4190	4270		ug/L		102	80 - 120	3	20

**Lab Sample ID: LCSD 440-515962/7**  
**Matrix: Water**  
**Analysis Batch: 515962**

**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
Methane (FID)	83.9	78.0		ug/L		93	80 - 120	3	20

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 580-290627/3**  
**Matrix: Water**  
**Analysis Batch: 290627**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NO3 as N	ND		0.20	0.020	mg/L			12/07/18 15:15	1

**Lab Sample ID: LCS 580-290627/4**  
**Matrix: Water**  
**Analysis Batch: 290627**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
NO3 as N	5.00	4.98		mg/L		100	90 - 110

TestAmerica Seattle

# QC Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: LCSD 580-290627/5**

**Matrix: Water**

**Analysis Batch: 290627**

**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
NO3 as N	5.00	4.97		mg/L		99	90 - 110	0	15

**Lab Sample ID: 580-82435-2 MS**

**Matrix: Water**

**Analysis Batch: 290627**

**Client Sample ID: MW04-120618-0**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
NO3 as N	0.046	J F1	5.00	3.24	F1	mg/L		64	90 - 110

**Lab Sample ID: 580-82435-2 MSD**

**Matrix: Water**

**Analysis Batch: 290627**

**Client Sample ID: MW04-120618-0**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
NO3 as N	0.046	J F1	5.00	3.27	F1	mg/L		65	90 - 110	1	15

**Lab Sample ID: MB 580-290628/3**

**Matrix: Water**

**Analysis Batch: 290628**

**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	0.14	mg/L			12/07/18 15:15	1
Sulfate	0.334	J	1.2	0.26	mg/L			12/07/18 15:15	1

**Lab Sample ID: LCS 580-290628/4**

**Matrix: Water**

**Analysis Batch: 290628**

**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	49.6		mg/L		99	90 - 110
Sulfate	50.0	49.6		mg/L		99	90 - 110

**Lab Sample ID: LCSD 580-290628/5**

**Matrix: Water**

**Analysis Batch: 290628**

**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	49.7		mg/L		99	90 - 110	0	15
Sulfate	50.0	49.6		mg/L		99	90 - 110	0	15

**Lab Sample ID: 580-82435-2 MS**

**Matrix: Water**

**Analysis Batch: 290628**

**Client Sample ID: MW04-120618-0**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.3		50.0	54.7		mg/L		103	90 - 110
Sulfate	4.1	B	50.0	56.7		mg/L		105	90 - 110

TestAmerica Seattle

# QC Sample Results

Client: CH2M Hill, Inc.  
 Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

## Method: 300.0 - Anions, Ion Chromatography (Continued)

**Lab Sample ID: 580-82435-2 MSD**

**Matrix: Water**

**Analysis Batch: 290628**

**Client Sample ID: MW04-120618-0**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.3		50.0	55.1		mg/L		104	90 - 110	1	15
Sulfate	4.1	B	50.0	57.0		mg/L		106	90 - 110	1	15

## Method: SM 5310C - TOC

**Lab Sample ID: MB 580-290953/25**

**Matrix: Water**

**Analysis Batch: 290953**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.19	mg/L			12/11/18 15:32	1

**Lab Sample ID: LCS 580-290953/26**

**Matrix: Water**

**Analysis Batch: 290953**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.09		mg/L		91	85 - 115

# Lab Chronicle

Client: CH2M Hill, Inc.  
Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

**Client Sample ID: MW04-120618-0**

**Lab Sample ID: 580-82435-2**

Date Collected: 12/06/18 10:05

Matrix: Water

Date Received: 12/07/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	515962	12/10/18 17:54	EI	TAL IRV
Total/NA	Analysis	300.0		1	290627	12/07/18 15:50	EMM	TAL SEA
Total/NA	Analysis	300.0		1	290628	12/07/18 15:50	EMM	TAL SEA
Total/NA	Analysis	SM 5310C		1	290953	12/11/18 15:32	HJM	TAL SEA

**Client Sample ID: T4S1MW23-120618-0**

**Lab Sample ID: 580-82435-3**

Date Collected: 12/06/18 11:35

Matrix: Water

Date Received: 12/07/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	515962	12/10/18 18:08	EI	TAL IRV
Total/NA	Analysis	300.0		1	290627	12/07/18 16:25	EMM	TAL SEA
Total/NA	Analysis	300.0		1	290628	12/07/18 16:25	EMM	TAL SEA
Total/NA	Analysis	SM 5310C		1	290953	12/11/18 15:32	HJM	TAL SEA

**Client Sample ID: T4S1MW22-120618-0**

**Lab Sample ID: 580-82435-4**

Date Collected: 12/06/18 12:35

Matrix: Water

Date Received: 12/07/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	515962	12/10/18 18:22	EI	TAL IRV
Total/NA	Analysis	300.0		1	290627	12/07/18 16:37	EMM	TAL SEA
Total/NA	Analysis	300.0		1	290628	12/07/18 16:37	EMM	TAL SEA
Total/NA	Analysis	SM 5310C		1	290953	12/11/18 15:32	HJM	TAL SEA

**Client Sample ID: MW01-120618-0**

**Lab Sample ID: 580-82435-5**

Date Collected: 12/06/18 14:15

Matrix: Water

Date Received: 12/07/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	515962	12/10/18 18:38	EI	TAL IRV
Total/NA	Analysis	300.0		1	290627	12/07/18 16:49	EMM	TAL SEA
Total/NA	Analysis	300.0		1	290628	12/07/18 16:49	EMM	TAL SEA
Total/NA	Analysis	SM 5310C		1	290953	12/11/18 15:32	HJM	TAL SEA

**Laboratory References:**

EMAX Lab. = EMAX Laboratories Inc, 1835 W. 205th Street, Torrance, CA 90501

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

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

# Accreditation/Certification Summary

Client: CH2M Hill, Inc.  
 Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

## Laboratory: 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	01-19-19
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
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	02-17-19

## Laboratory: TestAmerica Irvine

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	State Program	10	CA01531	06-30-19
Arizona	State Program	9	AZ0671	10-14-19
California	LA Cty Sanitation Districts	9	10256	06-30-19
California	State Program	9	CA ELAP 2706	06-30-19
Guam	State Program	9	Cert. No. 17-003R	01-23-19 *
Hawaii	State Program	9	N/A	01-29-19 *
Kansas	NELAP	7	E-10420	07-31-19
Nevada	State Program	9	CA015312018-1	07-31-19
New Mexico	State Program	6	N/A	01-29-19 *
Oregon	NELAP	10	4028	01-29-19 *
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-18-00214	07-09-21
Washington	State Program	10	C900	09-03-19

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Sample Summary

Client: CH2M Hill, Inc.  
Project/Site: Northwest Pipe Company GW Monitoring

TestAmerica Job ID: 580-82435-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-82435-1	TB-120618	Water	12/06/18 08:00	12/07/18 09:30
580-82435-2	MW04-120618-0	Water	12/06/18 10:05	12/07/18 09:30
580-82435-3	T4S1MW23-120618-0	Water	12/06/18 11:35	12/07/18 09:30
580-82435-4	T4S1MW22-120618-0	Water	12/06/18 12:35	12/07/18 09:30
580-82435-5	MW01-120618-0	Water	12/06/18 14:15	12/07/18 09:30

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LABORATORIES, INC.®

1835 W. 205th Street  
Torrance, CA 90501  
Tel: (310) 618-8889

Date: 12-20-2018  
EMAX Batch No.: 18L110

Attn: Kris Allen

TestAmerica, Inc.  
5755 8th Street East  
Tacoma WA 98424

Subject: Laboratory Report  
Project: NW PIPE COMPANY GW MONITORING

Enclosed is the Laboratory report for samples received on 12/08/18.  
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
TB-120618	L110-01	12/06/18	WATER	VOC SIM
MW04-120618-0	L110-02	12/06/18	WATER	VOC SIM
T4S1MW23-120618-0	L110-03	12/06/18	WATER	VOC SIM
T4S1MW22-120618-0	L110-04	12/06/18	WATER	VOC SIM
MW01-120618-0	L110-05	12/06/18	WATER	VOC SIM

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

Caspar J. Pang  
Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912017-13  
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing  
California ELAP Accredited Certificate Number 2672

18110

Chain of Custody Record



<b>Client Information (Sub Contract Lab)</b>		Lab PM:	Allen, Kristine D	Carrier Tracking No(s):	580-61965.1
Shipping/Receiving		Phone:		State of Origin:	Oregon
Company: EMAX Laboratories Inc		E-Mail:	kristine.allen@testamericainc.com	Page:	Page 1 of 1
Address: 1835 W. 205th Street,		Accreditations Required (See note):			
City: Torrance	Due Date Requested:	580-82435-1			
State: CA, 90501	TAT Requested (days):				
Phone:	PO #:				
Email:	WO #:				
Project Name: Northwest Pipe Company GW Monitoring	Project #:	58013218			
Site:	SSOW#::				

Sample Identification - Client ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB TCE, cis 1,2-DCE, PCE, Vinyl Chloride - low level)	Total Number of containers	Special Instructions/Note:
TB-120618	12/6/18	08:00 Pacific	Water	Water	X	X		3	Please provide CH2 Lab Spec EDD if possible.
MW04-120618-0	12/6/18	10:05 Pacific	Water	Water	X	X		3	Please provide CH2 Lab Spec EDD if possible.
T4S1MW23-120618-0	12/6/18	11:35 Pacific	Water	Water	X	X		3	Please provide CH2 Lab Spec EDD if possible.
T4S1MW22-120618-0	12/6/18	12:35 Pacific	Water	Water	X	X		3	Please provide CH2 Lab Spec EDD if possible.
MW01-120618-0	12/6/18	14:15 Pacific	Water	Water	X	X		3	Please provide CH2 Lab Spec EDD if possible.
Temp: 1.9°C									

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Tom Blank	12/7/18		Company TA-SEA
Relinquished by:	Date/Time:	Received by:	Company
Relinquished by:	Date/Time:	Received by: [Signature]	Company EMAX
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:	Received by:	Company
Custody Seal No.:			

Cooler Temperature(s) °C and Other Remarks:

SAMPLE RECEIPT FORM 1

Type of Delivery <input checked="" type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others <input type="checkbox"/> EMAX Courier <input type="checkbox"/> Client Delivery	Airbill / Tracking Number 41008 8717 9038	ECN 18L110 Recipient DREW Date 12/10/18 Time 1030
---	--	---

**COQ INSPECTION**

<input checked="" type="checkbox"/> Client Name	<input checked="" type="checkbox"/> Client PM/FC	<input type="checkbox"/> Sampler Name	<input checked="" type="checkbox"/> Sampling Date/Time	<input checked="" type="checkbox"/> Sample ID	<input checked="" type="checkbox"/> Matrix
<input checked="" type="checkbox"/> Address	<input checked="" type="checkbox"/> Tel # / Fax #	<input type="checkbox"/> Courier Signature	<input checked="" type="checkbox"/> Analysis Required	<input type="checkbox"/> Preservative (if any)	<input type="checkbox"/> TAT
Safety Issues (if any)	<input type="checkbox"/> High concentrations expected	<input type="checkbox"/> From Superfund Site	<input type="checkbox"/> Rad screening required		

Note:

**PACKAGING INSPECTION**

Container	<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input checked="" type="checkbox"/> Custody Seal	<input checked="" type="checkbox"/> Intact	<input type="checkbox"/> Damaged
Packaging	<input checked="" type="checkbox"/> Bubble Pack	<input type="checkbox"/> Styrofoam	<input type="checkbox"/> Popcorn
Temperatures (Cool, ≤6 °C but not frozen)	<input checked="" type="checkbox"/> Cooler 1 1.9 °C	<input type="checkbox"/> Cooler 2 _____ °C	<input type="checkbox"/> Cooler 3 _____ °C
	<input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Cooler 8 _____ °C
Thermometer:	A - S/N 170324872	B - S/N 15055522	C - S/N 170324888

Comments:  Temperature is out of range. PM was informed IMMEDIATELY.

Note:

**DISCREPANCIES**

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1-5	1-3	D10		R1-coo
1	1-15	D16	label: HCl.	R1-label
	1-3	D2	"VOCs" on label	R1-coo
40/12/18				
RS 12/10/18				

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.

**NOTES/OBSERVATIONS:**

**LEGEND:**

<p><b>Code Description- Sample Management</b></p> <p>D1 Analysis is not indicated in _____</p> <p><b>D2</b> Analysis mismatch COC vs label</p> <p>D3 Sample ID mismatch COC vs label</p> <p>D4 Sample ID is not indicated in _____</p> <p>D5 Container -[improper] [leaking] [broken]</p> <p>D6 Date/Time is not indicated in _____</p> <p>D7 Date/Time mismatch COC vs label</p> <p>D8 Sample listed in COC is not received</p> <p>D9 Sample received is not listed in COC</p> <p><b>D10</b> No initial/date on corrections in COC label</p> <p>D11 Container count mismatch COC vs received</p> <p>D12 Container size mismatch COC vs received</p>	<p><b>Code Description-Sample Management</b></p> <p>D13 Out of Holding Time</p> <p>D14 Bubble is &gt;6mm</p> <p>D15 No trip blank in cooler</p> <p><b>D16</b> Preservation not indicated in <u>COO</u></p> <p>D17 Preservation mismatch COC vs label</p> <p>D18 Insufficient chemical preservative</p> <p>D19 Insufficient Sample</p> <p>D20 No filtration info for dissolved analysis</p> <p>D21 No sample for moisture determination</p> <p>D22 _____</p> <p>D23 _____</p> <p>D24 _____</p>	<p><input type="checkbox"/> Continue to next page.</p> <p><b>Code Description-Sample Management</b></p> <p>R1 Proceed as indicated in <input type="checkbox"/> COC <input type="checkbox"/> Label</p> <p>R2 Refer to attached instruction</p> <p>R3 Cancel the analysis</p> <p>R4 Use vial with smallest bubble first</p> <p>R5 Log-in with latest sampling date and time+1 min</p> <p>R6 Adjust pH as necessary</p> <p>R7 Filter and preserved as necessary</p> <p>R8 _____</p> <p>R9 _____</p> <p>R10 _____</p> <p>R11 _____</p> <p>R12 _____</p>
--	---	---

REVIEWS: *Severine Mista*  
Sample Labeling Date: 12/10/18

SRF: *Dejean*  
Date: 12/10/18

PM: *RS*  
Date: 12/10/18

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

**Temperature Controlled**



**IF THIS SHIPMENT IS DELAYED IN TRANSIT,  
STORE REFRIGERATED (2° TO 8° C / 36° TO 47° F)**

TAL-0090(1016)

ORIGIN ID:TCMA (253) 922-2310  
SAMPLE RECEIVING  
TA-SEATTLE  
5755 8TH ST E

SHIP DATE: 07DEC18  
ACTWGT: 15.35 LB  
CAD: 989746/CAFE3211

FIFE, WA 98424  
UNITED STATES US

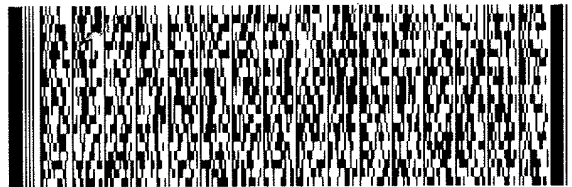
BILL SENDER

TO **SHIPPING/RECEIVING  
EMAX LABORATORIES INC  
1835 W. 205TH STREET**

**TORRANCE CA 90501**

(253) 922-2310  
PO: NO

REF: S580-31848



**FedEx**  
Express



REC'D BY FEED/ALC

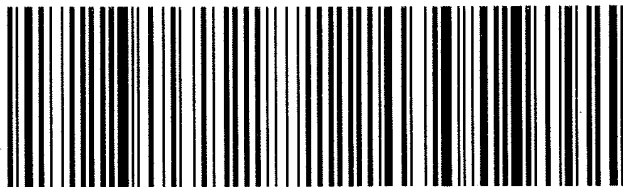
TRK# 4668 8717 9038  
0201

**SATURDAY 12:00P  
PRIORITY OVERNIGHT**

**WO HHRA**

**90501  
CA-US LAX**

REF: 15847463 TRIC EXP 0318



## REPORTING CONVENTIONS

### DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
<b>J</b>	<b>F</b>	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
<b>N</b>		Indicates presumptive evidence of a compound.
<b>B</b>	<b>B</b>	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
<b>E</b>	<b>J</b>	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

**Note:** The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

### ACRONYMS AND ABBREVIATIONS:

<b>CRDL</b>	Contract Required Detection Limit
<b>RL</b>	Reporting Limit
<b>MRL</b>	Method Reporting Limit
<b>PQL</b>	Practical Quantitation Limit
<b>MDL</b>	Method Detection Limit
<b>DO</b>	Diluted out

### DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

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LABORATORY REPORT FOR

TESTAMERICA, INC.

NW PIPE COMPANY GW MONITORING

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

SDG#: 18L110

CASE NARRATIVE

Client : TESTAMERICA, INC.

Project: NW PIPE COMPANY GW MONITORING

SDG : 18L110

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

A total of five (5) water samples were received on 12/08/18 to be analyzed for EDB by GC/MS SIM in accordance with Method SW5030B/8260B SIM and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration

Instrument tune check was performed prior to calibration. Result was within acceptance criteria. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried out at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank

Method blank was prepared and analyzed at the frequency required by the project. For this SDG, two (2) method blanks were analyzed. VOF5L06B and VOF5L11B were compliant to project requirement. Refer to sample result summary forms for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, two (2) sets of LCS/LCD were analyzed. VOF5L06L/VOF5L06C and VOF5L11L/VOF5L11C were within LCS limits. Refer to LCS summary forms for details.

Matrix QC Sample

No matrix QC sample was provided on this SDG.

Surrogate

Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis

Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met.

Sample L110-05 was reported at dilution due to high concentration.

LAB CHRONICLE  
EDB BY GC/MS STM

SDG NO. : 18L110  
Instrument ID : F5

Client : TESTAMERICA, INC.  
Project : NW PIPE COMPANY GW MONITORING

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
									WATER
MBLK1W	VOF5L06B	1	NA	12/11/1816:57	12/11/1816:57	RLY140	RHY772	VOF5L06	Method Blank
LCS1W	VOF5L06L	1	NA	12/11/1816:07	12/11/1816:07	RLY138	RHY772	VOF5L06	Lab Control Sample (LCS)
LCD1W	VOF5L06C	1	NA	12/11/1816:32	12/11/1816:32	RLY139	RHY772	VOF5L06	LCS Duplicate
TB-120618	L110-01	1	NA	12/11/1819:05	12/11/1819:05	RLY144	RHY772	VOF5L06	Field Sample
MW04-120618-0	L110-02	1	NA	12/11/1821:12	12/11/1821:12	RLY149	RHY772	VOF5L06	Field Sample
T4S1MW22-120618-0	L110-04	1	NA	12/11/1822:04	12/11/1822:04	RLY151	RHY772	VOF5L06	Field Sample
MBLK2W	VOF5L11B	1	NA	12/14/1818:34	12/14/1818:34	RLY238	RHY772	VOF5L11	Method Blank
LCS2W	VOF5L11L	1	NA	12/14/1817:44	12/14/1817:44	RLY236	RHY772	VOF5L11	Lab Control Sample (LCS)
LCD2W	VOF5L11C	1	NA	12/14/1818:09	12/14/1818:09	RLY237	RHY772	VOF5L11	LCS Duplicate
T4S1MW23-120618-0	L110-03N	1	NA	12/14/1821:05	12/14/1821:05	RLY244	RHY772	VOF5L11	Field Sample
MW04-120618-0DL	L110-02I	50	NA	12/14/1821:30	12/14/1821:30	RLY245	RHY772	VOF5L11	Diluted Sample
T4S1MW22-120618-0DL	L110-04I	5	NA	12/14/1821:55	12/14/1821:55	RLY246	RHY772	VOF5L11	Diluted Sample
MW01-120618-0	L110-05I	50	NA	12/14/1822:20	12/14/1822:20	RLY247	RHY772	VOF5L11	Diluted Sample

FN - Filename  
% Moist - Percent Moisture

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# SAMPLE RESULTS

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

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=====
Client      : TESTAMERICA, INC.           Date Collected: 12/06/18
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/08/18
Batch No.   : 18L110                     Date Extracted: 12/11/18 19:05
Sample ID   : TB-120618                  Date Analyzed: 12/11/18 19:05
Lab Samp ID: L110-01                     Dilution Factor: 1
Lab File ID: RLY144                       Matrix          : WATER
Ext Btch ID: VOF5L06                      % Moisture      : NA
Calib. Ref.: RHY772                       Instrument ID   : TOF5
=====

```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHYLENE	ND	0.20	0.10
VINYL CHLORIDE	ND	0.10	0.020
TETRACHLOROETHENE	ND	0.20	0.10
TCE	ND	0.20	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.486	0.5000	97.2	70-130
4-BROMOFLUOROBENZENE	0.489	0.5000	97.8	70-130
TOLUENE-D8	0.476	0.5000	95.2	70-130

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

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=====
Client      : TESTAMERICA, INC.           Date Collected: 12/06/18
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/08/18
Batch No.   : 18L110                     Date Extracted: 12/11/18 21:12 # 12/14/18 21:30
Sample ID   : MW04-120618-0              Date Analyzed: 12/11/18 21:12 # 12/14/18 21:30
Lab Samp ID: L110-02 #L110-021          Dilution Factor: 1 # 50
Lab File ID: RLY149 #RLY245             Matrix       : WATER
Ext Btch ID: VOF5L06 #VOF5L11          % Moisture   : NA
Calib. Ref.: RHY772 #RHY772            Instrument ID : TOF5
=====
  
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# CIS-1,2-DICHLOROETHYLENE	190	10	5.0
VINYL CHLORIDE	4.6	0.10	0.020
# TETRACHLOROETHENE	16	10	5.0
# TCE	19	10	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.508	0.5000	102	70-130
4-BROMOFLUOROBENZENE	0.486	0.5000	97.1	70-130
TOLUENE-D8	0.465	0.5000	93.0	70-130
# 1,2-DICHLOROETHANE-D4	26.1	25.00	104	70-130
# 4-BROMOFLUOROBENZENE	24.0	25.00	96.1	70-130
# TOLUENE-D8	23.5	25.00	94.1	70-130

# Members of the Associated File

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

```

=====
Client      : TESTAMERICA, INC.           Date Collected: 12/06/18
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/08/18
Batch No.   : 18L110                     Date Extracted: 12/11/18 21:12
Sample ID   : MW04-120618-0             Date Analyzed: 12/11/18 21:12
Lab Samp ID: L110-02                    Dilution Factor: 1
Lab File ID: RLY149                      Matrix       : WATER
Ext Btch ID: VOF5L06                    % Moisture  : NA
Calib. Ref.: RHY772                     Instrument ID : TOF5
=====
  
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHYLENE	190E	0.20	0.10
VINYL CHLORIDE	4.6	0.10	0.020
TETRACHLOROETHENE	16E	0.20	0.10
TCE	20E	0.20	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.508	0.5000	102	70-130
4-BROMOFLUOROBENZENE	0.486	0.5000	97.1	70-130
TOLUENE-D8	0.465	0.5000	93.0	70-130

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

```

=====
Client      : TESTAMERICA, INC.           Date Collected: 12/06/18
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/08/18
Batch No.   : 18L110                     Date Extracted: 12/14/18 21:30
Sample ID: MW04-120618-ODL              Date Analyzed: 12/14/18 21:30
Lab Samp ID: L110-02I                   Dilution Factor: 50
Lab File ID: RLY245                     Matrix       : WATER
Ext Btch ID: VOF5L11                   % Moisture   : NA
Calib. Ref.: RHY772                     Instrument ID : TOF5
=====
  
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHYLENE	190	10	5.0
VINYL CHLORIDE	5.5	5.0	1.0
TETRACHLOROETHENE	16	10	5.0
TCE	19	10	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	26.1	25.00	104	70-130
4-BROMOFLUOROBENZENE	24.0	25.00	96.1	70-130
TOLUENE-D8	23.5	25.00	94.1	70-130

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

```

=====
Client      : TESTAMERICA, INC.           Date Collected: 12/06/18
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/08/18
Batch No.   : 18L110                     Date Extracted: 12/14/18 21:05
Sample ID   : T4S1MW23-120618-0         Date Analyzed: 12/14/18 21:05
Lab Samp ID: L110-03N                    Dilution Factor: 1
Lab File ID: RLY244                       Matrix          : WATER
Ext Btch ID: VOF5L11                       % Moisture     : NA
Calib. Ref.: RHY772                       Instrument ID   : TOF5
=====
  
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHYLENE	1.4	0.20	0.10
VINYL CHLORIDE	0.023J	0.10	0.020
TETRACHLOROETHENE	1.8	0.20	0.10
TCE	0.61	0.20	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.521	0.5000	104	70-130
4-BROMOFLUOROBENZENE	0.480	0.5000	95.9	70-130
TOLUENE-D8	0.464	0.5000	92.7	70-130

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

```

=====
Client      : TESTAMERICA, INC.           Date Collected: 12/06/18
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/08/18
Batch No.   : 18L110                     Date Extracted: 12/11/18 22:04 # 12/14/18 21:55
Sample ID   : T4S1MW22-120618-0         Date Analyzed: 12/11/18 22:04 # 12/14/18 21:55
Lab Samp ID: L110-04 #L110-04I          Dilution Factor: 1 # 5
Lab File ID: RLY151 #RLY246             Matrix       : WATER
Ext Btch ID: VOF5L06 #VOF5L11           % Moisture   : NA
Calib. Ref.: RHY772 #RHY772             Instrument ID : TOF5
=====

```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
# CIS-1,2-DICHLOROETHYLENE	5.8	1.0	0.50
VINYL CHLORIDE	0.076J	0.10	0.020
TETRACHLOROETHENE	1.4	0.20	0.10
TCE	4.6	0.20	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.553	0.5000	111	70-130
4-BROMOFLUOROBENZENE	0.467	0.5000	93.4	70-130
TOLUENE-D8	0.474	0.5000	94.9	70-130
# 1,2-DICHLOROETHANE-D4	2.68	2.500	107	70-130
# 4-BROMOFLUOROBENZENE	2.35	2.500	93.8	70-130
# TOLUENE-D8	2.35	2.500	93.9	70-130

# Members of the Associated File

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

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=====
Client      : TESTAMERICA, INC.           Date Collected: 12/06/18
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/08/18
Batch No.   : 18L110                     Date Extracted: 12/11/18 22:04
Sample ID   : T4S1MW22-120618-0         Date Analyzed: 12/11/18 22:04
Lab Samp ID: L110-04                     Dilution Factor: 1
Lab File ID: RLY151                       Matrix          : WATER
Ext Btch ID: VOF5L06                       % Moisture     : NA
Calib. Ref.: RHY772                       Instrument ID   : TOF5
=====

```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHYLENE	5.8E	0.20	0.10
VINYL CHLORIDE	0.076J	0.10	0.020
TETRACHLOROETHENE	1.4	0.20	0.10
TCE	4.6	0.20	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.553	0.5000	111	70-130
4-BROMOFLUOROBENZENE	0.467	0.5000	93.4	70-130
TOLUENE-D8	0.474	0.5000	94.9	70-130

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

```

=====
Client      : TESTAMERICA, INC.           Date Collected: 12/06/18
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/08/18
Batch No.   : 18L110                     Date Extracted: 12/14/18 21:55
Sample ID   : T4S1MW22-120618-ODL       Date Analyzed: 12/14/18 21:55
Lab Samp ID: L110-04I                    Dilution Factor: 5
Lab File ID: RLY246                       Matrix       : WATER
Ext Btch ID: VOF5L11                     % Moisture   : NA
Calib. Ref.: RHY772                       Instrument ID : TOF5
=====
  
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHYLENE	5.8	1.0	0.50
VINYL CHLORIDE	ND	0.50	0.10
TETRACHLOROETHENE	1.3	1.0	0.50
TCE	4.2	1.0	0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	2.68	2.500	107	70-130
4-BROMOFLUOROBENZENE	2.35	2.500	93.8	70-130
TOLUENE-DB	2.35	2.500	93.9	70-130

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

```

=====
Client      : TESTAMERICA, INC.          Date Collected: 12/06/18
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/08/18
Batch No.   : 18L110                   Date Extracted: 12/14/18 22:20
Sample ID   : MW01-120618-0            Date Analyzed: 12/14/18 22:20
Lab Samp ID : L110-05I                 Dilution Factor: 50
Lab File ID : RLY247                   Matrix          : WATER
Ext Btch ID: VOF5L11                  % Moisture      : NA
Calib. Ref.: RHY772                   Instrument ID   : TOF5
=====

```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHYLENE	160	10	5.0
VINYL CHLORIDE	19	5.0	1.0
TETRACHLOROETHENE	98	10	5.0
TCE	13	10	5.0

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	27.0	25.00	108	70-130
4-BROMOFLUOROBENZENE	23.9	25.00	95.6	70-130
TOLUENE-D8	22.8	25.00	91.1	70-130

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# QC SUMMARIES

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

```

=====
Client      : TESTAMERICA, INC.           Date Collected: NA
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/11/18
Batch No.   : 18L110                     Date Extracted: 12/11/18 16:57
Sample ID   : MBLK1W                     Date Analyzed: 12/11/18 16:57
Lab Samp ID: VOF5L06B                   Dilution Factor: 1
Lab File ID: RLY140                     Matrix          : WATER
Ext Btch ID: VOF5L06                    % Moisture     : NA
Calib. Ref.: RHY772                     Instrument ID   : TOF5
=====

```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHYLENE	ND	0.20	0.10
VINYL CHLORIDE	ND	0.10	0.020
TETRACHLOROETHENE	ND	0.20	0.10
TCE	ND	0.20	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.488	0.5000	97.6	70-130
4-BROMOFLUOROBENZENE	0.480	0.5000	96.1	70-130
TOLUENE-D8	0.473	0.5000	94.6	70-130

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: TESTAMERICA, INC.  
PROJECT: NW PIPE COMPANY GW MONITORING  
BATCH NO.: 18L110  
METHOD: SW5030B/8260B SIM

MATRIX: WATER % MOISTURE: NA  
DILUTION FACTOR: 1 1  
SAMPLE ID: MBLK2W  
LAB SAMP ID: VOF5L11B VOF5L11L VOF5L11C  
LAB FILE ID: RLY238 RLY236 RLY237  
DATE EXTRACTED: 12/14/1818:34 12/14/1817:44 12/14/1818:09 DATE COLLECTED: NA  
DATE ANALYZED: 12/14/1818:34 12/14/1817:44 12/14/1818:09 DATE RECEIVED: 12/14/18  
PREP. BATCH: VOF5L11 VOF5L11 VOF5L11  
CALIB. REF: RHY772 RHY772 RHY772

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD ( % )	QC LIMIT ( % )	MAX RPD ( % )
cis-1,2-Dichloroethylene	ND	0.500	0.499	100	0.500	0.504	101	1	70-130	20
Vinyl Chloride	ND	0.500	0.555	111	0.500	0.557	111	0	60-140	20
Tetrachloroethene	ND	0.500	0.453	91	0.500	0.452	90	0	70-130	20
TCE	ND	0.500	0.469	94	0.500	0.471	94	0	70-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT ( % )
1,2-Dichloroethane-d4	0.500	0.465	93	0.500	0.464	93	70-130
4-Bromofluorobenzene	0.500	0.484	97	0.500	0.481	96	70-130
Toluene-d8	0.500	0.474	95	0.500	0.479	96	70-130

METHOD SW5030B/8260B SIM  
EDB BY GC/MS SIM

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=====
Client      : TESTAMERICA, INC.           Date Collected: NA
Project     : NW PIPE COMPANY GW MONITORING Date Received: 12/14/18
Batch No.   : 18L110                     Date Extracted: 12/14/18 18:34
Sample ID   : MBLK2W                     Date Analyzed: 12/14/18 18:34
Lab Samp ID: VOF5L11B                    Dilution Factor: 1
Lab File ID: RLY238                       Matrix       : WATER
Ext Btch ID: VOF5L11                      % Moisture   : NA
Calib. Ref.: RHY772                       Instrument ID : TOF5
=====

```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
CIS-1,2-DICHLOROETHYLENE	ND	0.20	0.10
VINYL CHLORIDE	ND	0.10	0.020
TETRACHLOROETHENE	ND	0.20	0.10
TCE	ND	0.20	0.10

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	0.506	0.5000	101	70-130
4-BROMOFLUOROBENZENE	0.479	0.5000	95.7	70-130
TOLUENE-D8	0.472	0.5000	94.4	70-130

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: TESTAMERICA, INC.  
PROJECT: NW PIPE COMPANY GW MONITORING  
BATCH NO.: 18L110  
METHOD: SW5030B/8260B SIM

MATRIX: WATER % MOISTURE: NA  
DILUTION FACTOR: 1 1  
SAMPLE ID: MBLK1W  
LAB SAMP ID: VOF5L06B VOF5L06L VOF5L06C  
LAB FILE ID: RLY140 RLY138 RLY139  
DATE EXTRACTED: 12/11/1816:57 12/11/1816:07 12/11/1816:32 DATE COLLECTED: NA  
DATE ANALYZED: 12/11/1816:57 12/11/1816:07 12/11/1816:32 DATE RECEIVED: 12/11/18  
PREP. BATCH: VOF5L06 VOF5L06 VOF5L06  
CALIB. REF: RHY772 RHY772 RHY772

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD ( % )	QC LIMIT ( % )	MAX RPD ( % )
cis-1,2-Dichloroethylene	ND	0.500	0.540	108	0.500	0.522	104	3	70-130	20
Vinyl Chloride	ND	0.500	0.592	118	0.500	0.572	114	3	60-140	20
Tetrachloroethene	ND	0.500	0.503	101	0.500	0.486	97	3	70-130	20
TCE	ND	0.500	0.513	103	0.500	0.499	100	3	70-130	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT ( % )
1,2-Dichloroethane-d4	0.500	0.445	89	0.500	0.458	92	70-130
4-Bromofluorobenzene	0.500	0.482	96	0.500	0.480	96	70-130
Toluene-d8	0.500	0.481	96	0.500	0.481	96	70-130



**Chain of Custody Record**

<b>Client Information (Sub Contract Lab)</b>		Lab PM Allen, Kristine D	Carrier Tracking No(s)	COC No: 580-81966.1
Shipping/Receiving		E-Mail kristine.allen@testamericainc.com	State of Origin Oregon	Page Page 1 of 1
Company TestAmerica Laboratories, Inc		Accreditations Required (See note) 580-82435-1		
Address 17461 Derian Ave, Suite 100,		Due Date Requested 12/19/2018		
City Irvine		TAT Requested (days):		
State, Zip CA, 92614-5817		PO #:		
Phone: 949-261-1022(Tel) 949-260-3297(Fax)		WO #:		
Email		Project #: 58013218		
Project Name Northwest Pipe Company GW Monitoring		SSOW#:		
Site				
<b>Analysis Requested</b>				
Field Filtered Sample (Yes or No)		Matrix (Water, Sludge, Orientation)		Special Instructions/Note: Total Number of containers
Preservation Code:		Sample Type (C=Comp, G=grab)		
Sample Date		Sample Time		
Sample Identification - Client ID (Lab ID)		Preservation Code:		
Matrix		Sample Time		
MW04-120618-0 (580-82435-2)	12/6/18	10:05 Pacific	Water	X
T4S1MW23-120618-0 (580-82435-3)	12/6/18	11:35 Pacific	Water	X
T4S1MW22-120618-0 (580-82435-4)	12/6/18	12:35 Pacific	Water	X
MW01-120618-0 (580-82435-5)	12/6/18	14:15 Pacific	Water	X
<p><b>Possible Hazard Identification</b></p> <p>Unconfirmed</p> <p>Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2</p> <p>Empty Kit Relinquished by: _____ Date: _____</p> <p>Relinquished by: <i>Tom Blanky D</i> Date/Time: 12/7/18 Company: TASA Company</p> <p>Relinquished by: _____ Date/Time: _____ Company: _____</p> <p>Relinquished by: _____ Date/Time: _____ Company: _____</p> <p>Custody Seals Intact <i>Yes</i> No <i>No</i> Custody Seal, Inc. <i>717-1011</i></p>				

## Login Sample Receipt Checklist

Client: CH2M Hill, Inc.

Job Number: 580-82435-1

**Login Number: 82435**

**List Source: TestAmerica Seattle**

**List Number: 1**

**Creator: Gall, Brandon A**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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.	True	
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.	False	Received 1 unfilled VOA vial for Sample #4.
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

## Login Sample Receipt Checklist

Client: CH2M Hill, Inc.

Job Number: 580-82435-1

**Login Number: 82435**

**List Number: 2**

**Creator: Avila, Stephanie 1**

**List Source: TestAmerica Irvine**

**List Creation: 12/08/18 01:39 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are 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.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
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?	N/A	Received project as a subcontract.
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	