

ANALYTICAL REPORT

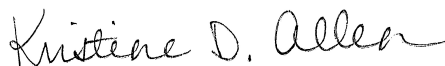
Eurofins TestAmerica, Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-89826-1

Client Project/Site: Northwest Pipe Company GW Monitoring
Revision: 1

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

Attn: Bernice Kidd



Authorized for release by:
11/13/2019 2:01:32 PM

Kristine Allen, Manager of Project Management
(253)248-4970
kristine.allen@testamericainc.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.



Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Definitions	4
Client Sample Results	5
QC Sample Results	7
Chronicle	10
Certification Summary	11
Sample Summary	12
Subcontract Data	13
Chain of Custody	27
Receipt Checklists	29

Case Narrative

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

Job ID: 580-89826-1

Job ID: 580-89826-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

**Job Narrative
580-89826-1**

Comments

Report was revised to add additional information in the case narrative.

No additional comments.

Receipt

The samples were received on 10/8/2019 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9° C.

The following sample was received with headspace greater than 6mm in one of the two sample containers: TRIPBLANK-100719 (580-89826-3).

Both trip blanks received were inadvertently sent to Eurofins TestAmerica Irvine instead of EMAX Laboratories. The trip blanks were not analyzed.

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

No 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

Job ID: 580-89826-1

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.

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

Job ID: 580-89826-1

Client Sample ID: T4S1MW09-100719-0

Lab Sample ID: 580-89826-1

Date Collected: 10/07/19 12:35

Matrix: Water

Date Received: 10/08/19 09:40

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane (FID)	3.6		0.99	0.25	ug/L			10/16/19 13:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	F1	0.90	0.14	mg/L			10/09/19 03:29	1
NO3 as N	1.3		0.20	0.020	mg/L			10/09/19 03:29	1
Sulfate	6.3	F1	1.2	0.26	mg/L			10/09/19 03:29	1
Total Organic Carbon	0.55		0.10	0.050	mg/L			10/15/19 07:44	1

Client Sample Results

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

Job ID: 580-89826-1

Client Sample ID: T4S1MW03s-100719-0

Lab Sample ID: 580-89826-2

Date Collected: 10/07/19 13:42

Matrix: Water

Date Received: 10/08/19 09:40

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			10/16/19 13:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.2		0.90	0.14	mg/L			10/09/19 04:04	1
NO3 as N	1.2		0.20	0.020	mg/L			10/09/19 04:04	1
Sulfate	8.6		1.2	0.26	mg/L			10/09/19 04:04	1
Total Organic Carbon	0.84		0.10	0.050	mg/L			10/15/19 07:58	1

QC Sample Results

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

Job ID: 580-89826-1

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 440-574748/8
Matrix: Water
Analysis Batch: 574748

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			10/16/19 13:15	1
Methane (TCD)	ND		1000	500	ug/L			10/16/19 13:15	1

Lab Sample ID: LCS 440-574748/4
Matrix: Water
Analysis Batch: 574748

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	4280		ug/L		102	80 - 120

Lab Sample ID: LCS 440-574748/6
Matrix: Water
Analysis Batch: 574748

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	84.3		ug/L		100	80 - 120

Lab Sample ID: LCSD 440-574748/5
Matrix: Water
Analysis Batch: 574748

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	4350		ug/L		104	80 - 120	2	20

Lab Sample ID: LCSD 440-574748/7
Matrix: Water
Analysis Batch: 574748

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	86.8		ug/L		103	80 - 120	3	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-313811/3
Matrix: Water
Analysis Batch: 313811

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			10/08/19 17:55	1

Lab Sample ID: LCS 580-313811/4
Matrix: Water
Analysis Batch: 313811

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	5.03		mg/L		101	90 - 110

Eurofins TestAmerica, Seattle

QC Sample Results

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

Job ID: 580-89826-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 580-313811/5
Matrix: Water
Analysis Batch: 313811

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	5.03		mg/L		101	90 - 110	0	15

Lab Sample ID: 580-89826-1 MS
Matrix: Water
Analysis Batch: 313811

Client Sample ID: T4S1MW09-100719-0
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
NO3 as N	1.3		5.00	6.85		mg/L		110	90 - 110

Lab Sample ID: 580-89826-1 MSD
Matrix: Water
Analysis Batch: 313811

Client Sample ID: T4S1MW09-100719-0
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	1.3		5.00	6.84		mg/L		110	90 - 110	0	15

Lab Sample ID: MB 580-313871/3
Matrix: Water
Analysis Batch: 313871

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			10/08/19 17:55	1
Sulfate	ND		1.2	0.26	mg/L			10/08/19 17:55	1

Lab Sample ID: LCS 580-313871/4
Matrix: Water
Analysis Batch: 313871

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	51.8		mg/L		104	90 - 110
Sulfate	50.0	51.0		mg/L		102	90 - 110

Lab Sample ID: LCSD 580-313871/5
Matrix: Water
Analysis Batch: 313871

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	51.9		mg/L		104	90 - 110	0	15
Sulfate	50.0	51.0		mg/L		102	90 - 110	0	15

Lab Sample ID: 580-89826-1 MS
Matrix: Water
Analysis Batch: 313871

Client Sample ID: T4S1MW09-100719-0
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1.0	F1	50.0	57.3	F1	mg/L		112	90 - 110
Sulfate	6.3	F1	50.0	62.3	F1	mg/L		112	90 - 110

Eurofins TestAmerica, Seattle

QC Sample Results

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

Job ID: 580-89826-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 580-89826-1 MSD
Matrix: Water
Analysis Batch: 313871

Client Sample ID: T4S1MW09-100719-0
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1.0	F1	50.0	57.3	F1	mg/L		112	90 - 110	0	15
Sulfate	6.3	F1	50.0	62.3	F1	mg/L		112	90 - 110	0	15

Method: SM 5310C - TOC

Lab Sample ID: MB 440-574648/8
Matrix: Water
Analysis Batch: 574648

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		0.10	0.050	mg/L			10/15/19 07:31	1

Lab Sample ID: LCS 440-574648/7
Matrix: Water
Analysis Batch: 574648

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	5.00	4.87		mg/L		97	85 - 115

Lab Sample ID: MRL 440-574648/6
Matrix: Water
Analysis Batch: 574648

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.100	0.0637	J	mg/L		64	50 - 150

Lab Sample ID: 580-89826-1 MS
Matrix: Water
Analysis Batch: 574648

Client Sample ID: T4S1MW09-100719-0
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.55		5.00	5.89		mg/L		107	85 - 115

Lab Sample ID: 580-89826-1 MSD
Matrix: Water
Analysis Batch: 574648

Client Sample ID: T4S1MW09-100719-0
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	0.55		5.00	5.73		mg/L		104	85 - 115	3	20

Lab Chronicle

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

Job ID: 580-89826-1

Client Sample ID: T4S1MW09-100719-0

Lab Sample ID: 580-89826-1

Date Collected: 10/07/19 12:35

Matrix: Water

Date Received: 10/08/19 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	574748	10/16/19 13:44	EI	TAL IRV
Total/NA	Analysis	300.0		1	313811	10/09/19 03:29	EMM	TAL SEA
Total/NA	Analysis	300.0		1	313871	10/09/19 03:29	EMM	TAL SEA
Total/NA	Analysis	SM 5310C		1	574648	10/15/19 07:44	YZ	TAL IRV

Client Sample ID: T4S1MW03s-100719-0

Lab Sample ID: 580-89826-2

Date Collected: 10/07/19 13:42

Matrix: Water

Date Received: 10/08/19 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	574748	10/16/19 13:57	EI	TAL IRV
Total/NA	Analysis	300.0		1	313811	10/09/19 04:04	EMM	TAL SEA
Total/NA	Analysis	300.0		1	313871	10/09/19 04:04	EMM	TAL SEA
Total/NA	Analysis	SM 5310C		1	574648	10/15/19 07:58	YZ	TAL IRV

Laboratory References:

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

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

TAL SEA = Eurofins 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

Job ID: 580-89826-1

Laboratory: Eurofins TestAmerica, Seattle

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-024	01-19-22
ANAB	Dept. of Defense ELAP	L2236	01-19-22
ANAB	ISO/IEC 17025	L2236	01-19-22
California	State	2901	11-05-19
Montana (UST)	State	NA	04-13-21
Oregon	NELAP	WA100007	11-05-19
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00039	02-10-20
Washington	State	C553	02-17-20

Laboratory: Eurofins TestAmerica, Irvine

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

Authority	Program	Identification Number	Expiration Date
Alaska	State	CA01531	06-30-20
Arizona	State	AZ0671	10-14-20
California	Los Angeles County Sanitation Districts	10256	06-30-20
California	State	2706	06-30-20
Guam	State	19-005R	01-23-20
Hawaii	State	CA01531	01-29-20
Kansas	NELAP	E-10420	07-31-20
Nevada	State	CA015312020-4	07-31-20
New Mexico	State	CA01531	01-29-20
Oregon	NELAP	4028 - 006	01-29-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-18-00214	07-09-21
Washington	State	C900	09-03-20

Sample Summary

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

Job ID: 580-89826-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-89826-1	T4S1MW09-100719-0	Water	10/07/19 12:35	10/08/19 09:40	
580-89826-2	T4S1MW03s-100719-0	Water	10/07/19 13:42	10/08/19 09:40	

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

Date: 11-06-2019
EMAX Batch No.: 19J097

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 10/10/19.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
T4S1MW09-100719-0	J097-01	10/07/19	WATER	VOC SIM
T4S1MW03S-100719-0	J097-02	10/07/19	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 TNI & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number CA002912018-15
ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

Chain of Custody Record



Client Information (Sub Contract Lab)		Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: Shipping/Receiving		Allen, Kristine D		580-71062.1
Company: EMAX Laboratories Inc		E-Mail: kristine.allen@testamericainc.com	State of Origin: Oregon	Page: Page 1 of 1
Address: 1835 W. 205th Street, City: Torrance State, Zip: CA, 90501 Phone: Email:		Job #: 580-89826-1		
Project Name: Northwest Pipe Company GW Monitoring Site:		Preservation Codes: A - HCL 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 X - EDTA Z - other (specify) Other:		
Due Date Requested: 10/18/2019		Analysis Requested		
TAT Requested (days):		Total Number of containers		
PO #:		SUB (TCE, cis 1,2-DCE, PCE, Vinyl Chloride - low level)/TCE, cis 1,2-DCE, PCE, Vinyl Chloride -		
W/O #:		Perform MS/MSD (Yes or No)		
Project #: 58013218		Field Filtered Sample (Yes or No)		
SSOW#:		Preservation Code:		
Sample Date		Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/oli)
10/7/19	12:35 Pacific	Water		
10/7/19	13:42 Pacific	Water		
Sample Identification - Client ID		Special Instructions/Note:		
T-4S1MW09-100719-0		19J097		
T-4S1MW03s-100719-0		Please provide CH2 Lab Spec EDD if possible.		
		Please provide CH2 Lab Spec EDD if possible.		
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/tests/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				
Empty Kit Relinquished by:				
Date:				
Relinquished by: Tom B...				
Date/Time: 10/9/19				
Relinquished by:				
Date/Time:				
Relinquished by:				
Date/Time:				
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Delta Yes <input type="checkbox"/> Delta No				
Custody Seal No.:				
Cooler Temperature(s) °C and Other Remarks:				
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				
Special Instructions/QC Requirements:				
Method of Shipment:				
Received by: JENESSA NAKAGAWA				
Date/Time: 10/10/19 0930				
Company: EMAX				
Received by:				
Date/Time:				
Received by:				
Date/Time:				

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 <u>12945904 5524</u>	ECN <u>19J097</u> Recipient <u>JENESSA NAKAGAWA</u> Date <u>10/10/19</u> Time <u>0930</u>
---	---	---

COC 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 type="checkbox"/> Cooler	<input type="checkbox"/> Box	<input type="checkbox"/> Other
Condition	<input checked="" type="checkbox"/> Custody Seal	<input 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 <u>4.5</u> °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 <u>192381464</u>	B - S/N _____	C - S/N <u>192381462</u>
			D - S/N _____

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1	1-3	D2	Label reads VOCs	R1
2	4-10	D2	Label reads PSK 175	R1
<i>[Large diagonal line across the table]</i>				

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:

Code Description- Sample Management

- D1 Analysis is not indicated in _____
- D2 Analysis mismatch COC vs label
- D3 Sample ID mismatch COC vs label
- D4 Sample ID is not indicated in _____
- D5 Container -[improper] [leaking] [broken]
- D6 Date/Time is not indicated in _____
- D7 Date/Time mismatch COC vs label
- D8 Sample listed in COC is not received
- D9 Sample received is not listed in COC
- D10 No initial/date on corrections in COC/label
- D11 Container count mismatch COC vs received
- D12 Container size mismatch COC vs received

Code Description-Sample Management

- D13 Out of Holding Time
- D14 Bubble is >6mm
- D15 No trip blank in cooler
- D16 Preservation not indicated in _____
- D17 Preservation mismatch COC vs label
- D18 Insufficient chemical preservative
- D19 Insufficient Sample
- D20 No filtration info for dissolved analysis
- D21 No sample for moisture determination
- D22 _____
- D23 _____
- D24 _____

Continue to next page.

Code Description-Sample Management

- R1 Proceed as indicated in COC Label
- R2 Refer to attached instruction
- R3 Cancel the analysis
- R4 Use vial with smallest bubble first
- R5 Log-in with latest sampling date and time+1 min
- R6 Adjust pH as necessary
- R7 Filter and preserved as necessary
- R8 _____
- R9 _____
- R10 _____
- R11 _____
- R12 _____

REVIEWS:

Sample Labeling Jenessa Nakagawa
Date 10/10/19

[Signature]
Date 10/10/19

SRF *[Signature]*
Date 10/10/19

PM *[Signature]*
Date 10/10/19

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: 09OCT19
ACTWGT: 10.55 LB
CAD: 989746/CAFE3310

FIFE, WA 98424
UNITED STATES US

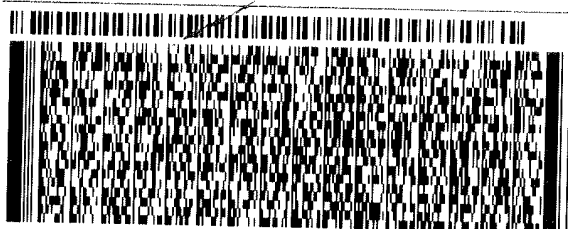
BILL SENDER

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

TORRANCE CA 90501

(253) 922-2310
PO: NO

REF: 8580-36086



FedEx
Express



J191219061901 BY

TRK# 1294 5904 5526
0201

THU - 10 OCT 10:30A
PRIORITY OVERNIGHT

92 HHRA

90501
CA-US LAX

4.5°C

Part #: 159471-434 RIT EXP 0520



REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	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:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
DO	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#: 19J097

CASE NARRATIVE

Client : TESTAMERICA, INC.

Project: NW PIPE COMPANY GW MONITORING

SDG : 19J097

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

A total of two (2) water samples were received on 10/10/19 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, one (1) method blank was analyzed. VO05J12B - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample

Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. VO05J12L/VO05J12C were within LCS limits. Refer to LCS summary form 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.

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SAMPLE RESULTS

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

```

=====
Client       : TESTAMERICA, INC.           Date Collected: 10/07/19
Project      : NW PIPE COMPANY GW MONITORING Date Received: 10/10/19
Batch No.    : 19J097                     Date Extracted: 10/14/19 12:44
Sample ID    : T4S1MW09-100719-0         Date Analyzed: 10/14/19 12:44
Lab Samp ID  : J097-01                    Dilution Factor: 1
Lab File ID  : RJQ324                      Matrix          : WATER
Ext Btch ID  : V005J12                    % Moisture      : NA
Calib. Ref.  : RIQ400                      Instrument ID   : T-005
=====
  
```

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	0.482	0.5000	96.5	70-130
4-BROMOFLUOROBENZENE	0.461	0.5000	92.3	70-130
TOLUENE-D8	0.486	0.5000	97.2	70-130

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

```

=====
Client       : TESTAMERICA, INC.           Date Collected: 10/07/19
Project      : NW PIPE COMPANY GW MONITORING Date Received: 10/10/19
Batch No.    : 19J097                     Date Extracted: 10/14/19 13:09
Sample ID    : T4S1MW03S-100719-0        Date Analyzed: 10/14/19 13:09
Lab Samp ID  : J097-02                   Dilution Factor: 1
Lab File ID  : RJQ325                    Matrix          : WATER
Ext Btch ID  : V005J12                   % Moisture     : NA
Calib. Ref.  : RIQ400                     Instrument ID   : T-005
=====
  
```

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	0.508	0.5000	102	70-130
4-BROMOFLUOROBENZENE	0.455	0.5000	90.9	70-130
TOLUENE-D8	0.482	0.5000	96.3	70-130

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QC SUMMARIES

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: 10/14/19
Batch No.   : 19J097                     Date Extracted: 10/14/19 11:04
Sample ID   : MBLK1W                     Date Analyzed: 10/14/19 11:04
Lab Samp ID: V005J12B                    Dilution Factor: 1
Lab File ID: RJQ320                      Matrix          : WATER
Ext Btch ID: V005J12                    % Moisture     : NA
Calib. Ref.: RIQ400                     Instrument ID   : T-005
=====
  
```

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	0.474	0.5000	94.8	70-130
4-BROMOFLUOROBENZENE	0.460	0.5000	92.0	70-130
TOLUENE-D8	0.478	0.5000	95.7	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: TESTAMERICA, INC.
PROJECT: NW PIPE COMPANY GW MONITORING
BATCH NO.: 19J097
METHOD: SW5030B/8260B SIM

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: V005J12B V005J12L V005J12C
LAB FILE ID: RJQ320 RJQ318 RJQ319
DATE EXTRACTED: 10/14/1911:04 10/14/1910:14 10/14/1910:39 DATE COLLECTED: NA
DATE ANALYZED: 10/14/1911:04 10/14/1910:14 10/14/1910:39 DATE RECEIVED: 10/14/19
PREP. BATCH: V005J12 V005J12 V005J12
CALIB. REF: RIQ400 RIQ400 RIQ400

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	0.488	98	0.500	0.510	102	4	70-130	20
Vinyl Chloride	ND	0.500	0.501	100	0.500	0.535	107	7	60-140	20
Tetrachloroethene	ND	0.500	0.452	90	0.500	0.444	89	2	70-130	20
TCE	ND	0.500	0.471	94	0.500	0.481	96	2	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	0.454	91	0.500	0.497	99	70-130
4-Bromofluorobenzene	0.500	0.453	91	0.500	0.441	88	70-130
Toluene-d8	0.500	0.488	98	0.500	0.474	95	70-130

Chain of Custody Record

Client Information		Sampler: LAURA TOCHKO		Lab PM: Allen, Kristine D		Carrier Tracking No(s):		COC No: 580-33446-10901.3											
Client Contact: Bernice Kidd		Phone: 425-891-2855		E-Mail: kristine.allen@testamericainc.com				Page: 2 of 3 - 10F1											
Company: CH2M Hill, Inc.				Analysis Requested				Job #: 89826											
Address: 2020 SW 4th Ave Suite 300																			
City: Portland		Due Date Requested:		Field Filtered (Sample) (Yes or No) <input type="checkbox"/> Performed in Lab (Yes or No) <input type="checkbox"/> EMAX 8260C_LL - TCE, cis 1,2-DCE, PCE, Vinyl Chloride RSK_475 - Methane 300.6_28D, 300_48HR: Cl, SO4, Nitrates 8310C - TOC		Total Number of Containers		Preservation Codes: 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 Z - other (specify)											
State, Zip: OR, 97201		TAT Requested (days): STANDARD																	
Phone: 530-229-3203(Tel)		PO #: PO 682722.R1.02																	
Email: bernice.kidd@jacobs.com		WO #:																	
Project Name: Northwest Pipe Company GW Monitoring		Project #: 58013218						Other: Special Instructions/Note: VOCs to be sent to EMAX " " " "											
Site:		SSOW#:																	
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastewater, BT=tissue, A=air)		Preservation Code		Field Filtered (Sample) (Yes or No) <input type="checkbox"/>		Performed in Lab (Yes or No) <input type="checkbox"/>		Total Number of Containers			
T4S1MW09-100719-0		10/07/19		12:35		G		W		N		3		3		1		1	
T4S1MW03s-100719-0		10/07/19		13:42		G		W		N		3		3		1		1	
TRIP BLANK-100719		10/07/19		08:00		-		W				2							



Therm. ID: 1R6 Cor: 2.9 °C Unc: 2.4 °C
 Cooler Desc: ly Blue FedEx: PO
 Packing: bubb UPS:
 Cust. Seal: Yes No Lab Cour:
 Blue Ice: Wet, Dry, None Other:

Possible Hazard Identification <input 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: LAURA TOCHKO		Date/Time: 10/07/19 15:30		Company: JACOBS		Received by: Tom Blau	
Relinquished by:		Date/Time:		Company:		Received by:	
Relinquished by:		Date/Time:		Company:		Received by:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			

Login Sample Receipt Checklist

Client: CH2M Hill, Inc.

Job Number: 580-89826-1

Login Number: 89826

List Source: Eurofins TestAmerica, Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	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.	True	
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 <math><6\text{mm}</math> (1/4").	False	Refer to Job Narrative for details.
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: 580-89826-1

Login Number: 89826
List Number: 2
Creator: Ornelas, Olga

List Source: Eurofins TestAmerica, Irvine
List Creation: 10/10/19 01:09 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.	False	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	