

**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

5 6

Attn: Terri Choy AECOM 1001 Bishop Street Honolulu, Hawaii 96813 Generated 3/24/2023 1:48:17 PM

# JOB DESCRIPTION

Red Hill - AFFF Assessment Sampling

# **JOB NUMBER**

580-124965-1

Eurofins Seattle 5755 8th Street East Tacoma WA 98424





## **Eurofins Seattle**

## Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

## Authorization

utton

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Authorized for release by Tracy Dutton, Client Relations Manager <u>Tracy.Dutton@et.eurofinsus.com</u> Designee for Marie Walker, Senior Project Manager <u>M.Elaine.Walker@et.eurofinsus.com</u> (253)248-4972

# **Table of Contents**

1
3
4
5
6
11
12
13
14
15
23

## Job ID: 580-124965-1

## Laboratory: Eurofins Seattle

Narrative

## **CASE NARRATIVE**

**Case Narrative** 

## Client: AECOM Project: Red Hill - AFFF Assessment Sampling Report Number: 580-124965-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

Following DoD QSM guidelines, manual integrations were performed only when necessary and are in compliance with the laboratory's standard operating procedure, Acceptable Manual Integration Practices, SOP No.: Q-S-002. The reason(s) for manual integration have been documented on the affected chromatogram(s), which is/are provided in the raw data package. The raw data also includes the original chromatogram(s) prior to any manual integration being performed. Manual integrations are detailed in the manual integration summary forms following this narrative.

It should be noted that samples with elevated Limits of Quantitation (LOQs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the LOQs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

## RECEIPT

The samples were received on 03/16/2023; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.2 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

## GLYCOLS

Samples AF-RHMW10-WGN01LF-2303W2 (580-124965-1), AF-RHMW16-WGN01LF-2303W2 (580-124965-2), AF-HDMW225303-WGN01LF-2303W2 (580-124965-3), AF-HDMW12A-WGN01LF-2303W2 (580-124965-4) and AF-HDMW12A-WGFD01LF-2303W2 (580-124965-5) were analyzed for glycols in accordance with EPA SW-846 Method 8015B - DAI. The samples were analyzed on 03/22/2023.

The closing continuing calibration verification (CCV) associated with batch 680-769036 recovered above the upper control limit for 2-(2-Butoxyethoxy)ethanol. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data has been reported. The associated samples are impacted: AF-RHMW10-WGN01LF-2303W2 (580-124965-1), AF-RHMW16-WGN01LF-2303W2 (580-124965-2), AF-HDMW225303-WGN01LF-2303W2 (580-124965-3), AF-HDMW12A-WGN01LF-2303W2 (580-124965-4), AF-HDMW12A-WGFD01LF-2303W2 (580-124965-5), (CCV 680-769036/27), (580-124965-A-2 MS) and (580-124965-A-2 MSD).

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

## **Definitions/Glossary**

## **Client: AECOM** Project/Site: Red Hill - AFFF Assessment Sampling

Decision Level Concentration (Radiochemistry)

EPA recommended "Maximum Contaminant Level"

Minimum Detectable Concentration (Radiochemistry)

Not Detected at the reporting limit (or MDL or EDL if shown)

Minimum Detectable Activity (Radiochemistry)

Estimated Detection Limit (Dioxin)

Limit of Detection (DoD/DOE)

Method Detection Limit

Minimum Level (Dioxin)

Most Probable Number

Not Calculated

Negative / Absent

Positive / Present

Presumptive **Quality Control** 

Method Quantitation Limit

Practical Quantitation Limit

Relative Error Ratio (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Too Numerous To Count

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

Limit of Quantitation (DoD/DOE)

Job ID: 580-124965-1

## **Qualifiers**

DL, RA, RE, IN

DLC

EDL

LOD

LOQ

MCL

MDA

MDC

MDL

ML MPN

MQL

NC

ND

NEG

POS

PQL PRES

QC RER

RL RPD

TEF TEQ

TNTC

#### GC Semi VOA Qualifier 4 **Qualifier Description** Μ Manual integrated compound. Q One or more quality control criteria failed. U Undetected at the Limit of Detection. 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** CFU Colony Forming Unit CNF Contains No Free Liquid Duplicate Error Ratio (normalized absolute difference) DER Dil Fac **Dilution Factor** Detection Limit (DoD/DOE) DL

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Job ID: 580-124965-1

Matrix: Water

Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

## Client Sample ID: AF-RHMW10-WGN01LF-2303W2 Lab Sample ID: 580-124965-1 Date Collected: 03/14/23 12:55 Date Received: 03/16/23 13:00 Method: SW846 8015C GLY - Glycols- Direct Injection (GC/EID)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac	H
2-(2-Butoxyethoxy)ethanol	3.0	UQ	5.0	1.1	mg/L			03/22/23 17:51	1	
=										

Job ID: 580-124965-1

Matrix: Water

Dil Fac

1

Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

#### Client Sample ID: AF-RHMW16-WGN01LF-2303W2 Lab Sample ID: 580-124965-2 Date Collected: 03/13/23 14:30 Date Received: 03/16/23 13:00 Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID) Result Qualifier Analyte LOQ DL Unit D Prepared Analyzed 3.0 UMQ 2-(2-Butoxyethoxy)ethanol 5.0 1.1 mg/L 03/22/23 18:15

Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling Job ID: 580-124965-1

5

#### Client Sample ID: AF-HDMW225303-WGN01LF-2303W2 Lab Sample ID: 580-124965-3 Date Collected: 03/14/23 10:40 Matrix: Water Date Received: 03/16/23 13:00 Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID) Result Qualifier Analyte LOQ DL Unit D Prepared Analyzed Dil Fac 3.0 UMQ 2-(2-Butoxyethoxy)ethanol 5.0 1.1 mg/L 03/22/23 19:25 1

Job ID: 580-124965-1

5

Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

#### Client Sample ID: AF-RHMW12A-WGN01LF-2303W2 Lab Sample ID: 580-124965-4 Date Collected: 03/13/23 11:10 Matrix: Water Date Received: 03/16/23 13:00 Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID) Result Qualifier Analyte LOQ DL Unit D Prepared Analyzed Dil Fac 3.0 UMQ 2-(2-Butoxyethoxy)ethanol 5.0 1.1 mg/L 03/22/23 19:48 1

Job ID: 580-124965-1

5

Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

#### Client Sample ID: AF-RHMW12A-WGFD01LF-2303W2 Lab Sample ID: 580-124965-5 Date Collected: 03/13/23 11:10 Matrix: Water Date Received: 03/16/23 13:00 Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID) Result Qualifier Analyte LOQ DL Unit D Prepared Analyzed Dil Fac 3.0 UMQ 2-(2-Butoxyethoxy)ethanol 5.0 1.1 mg/L 03/22/23 20:12 1

## **QC Sample Results**

## Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

Job ID: 580-124965-1

## Method: 8015C GLY - Glycols- Direct Injection (GC/FID)

Analysis Batch: 769036       MB       MB       MB       Qualifier       LOQ       DL       Unit       D       Prepared       Analyzed       DII F         2-(2-Butoxyethoxy)ethanol       3.0       U       M       5.0       1.1       mg/L       D       Prepared       Analyzed       DII F         2-(2-Butoxyethoxy)ethanol       3.0       U       M       5.0       1.1       mg/L       D       Prepared       Analyzed       DII F         2-(2-Butoxyethoxy)ethanol       3.0       U       M       5.0       1.1       mg/L       D       %Rec       Client Sample ID: Lab Control Sample NPrep Type: Total/N         Analyte       Added       Spike       LCS       LCS       KRec       Limits	Lab Sample ID: MB 680-769 Matrix: Water													ple ID: M Prep Ty		
AnalyteResultQualifierLOQDLUnitDPreparedAnalyzedDil F2-(2-Butoxyethoxy)ethanol3.0U M5.01.1mg/L03/22/23 17:0503/22/23 17:05Lab Sample ID: LCS 680-769036/6 Matrix: Water Analysis Batch: 769036SpikeLCSLCSClient Sample ID: Lab Control Samp Prep Type: Total/NAnalyteAddedResultQualifierUnitD%RecLimits2-(2-Butoxyethoxy)ethanol20.019.8QualifierUnitD%RecLimits2-(2-Butoxyethoxy)ethanol20.019.8QualifierUnitD%RecLimits2-(2-Butoxyethoxy)ethanol20.019.8QualifierUnitD%RecResultAnalyteAddedResultQualifierUnitD%RecResultAnalyteAddedResultQualifierUnitD%RecResult2-(2-Butoxyethoxy)ethanol20.019.1UnitD%RecResult2-(2-Butoxyethoxy)ethanol20.019.1UnitD%RecResultAnalyteAddedResultQualifierUnitD%RecResultAnalyteAddedSpikeMSMS%RecLimitsPrep Type: Total/NAnalyteResultQualifierAddedResultQualifierD%RecLimits2-(2-Butoxyethoxy)ethanol3.0U M20.019.7D%RecLimi	Analysis Batch: 769036															
2-(2-Butoxyethoxy)ethanol       3.0 UM       5.0       1.1 mg/L       03/22/23 17:05         Lab Sample ID: LCS 680-769036/6 Matrix: Water Analysis Batch: 769036       Spike       LCS       LCS       Client Sample ID: Lab Control Samp Prep Type: Total/N         Analyte       Added       Result       Qualifier       Unit       D       %Rec       Limits	-		MB MI	В												
Lab Sample ID: LCS 680-769036/6 Matrix: Water Analysis Batch: 769036Client Sample ID: Lab Control Samp Prep Type: Total/NAnalyteAddedResult QualifierUnit mg/LD 99%Rec 50.150Limits LimitsAnalyteAddedResult QualifierUnit mg/LD 99%Rec 50.150Limits LimitsLab Sample ID: LCSD 680-769036/7 Matrix: Water Analysis Batch: 769036Client Sample ID: Lab Control Sample DU Prep Type: Total/NAnalyteAddedResult QualifierUnit Unit mg/LD 95%Rec 50.150Rep 4Lab Sample ID: 580-124965-2 MS Matrix: Water Analysis Batch: 769036Sample QualifierSpike AddedMS Result QualifierMS MSMS mg/LM 98%Rec 50.150M 4Lab Sample ID: 580-124965-2 MS Matrix: Water Analysis Batch: 769036Sample QualifierSpike AddedMS Result QualifierMS MSMS mg/L%Rec 98Limits 50.150Lab Sample ID: 580-124965-2 MS Matrix: Water Analysis Batch: 769036Sample QualifierSpike Added QualifierMS MS MSMS mg/LM Prep Type: Total/N MSLab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Sample SampleSpike SpikeMS MS MSMS MS%Rec mg/LLimits Prep Type: Total/N Prep Type: Total/NMatrix: Water		Re	sult Qu	ualifier		LOQ					D	Pr	epared	Analyz	zed	Dil Fa
Matrix: Water Analysis Batch: 769036Prep Type: Total/NAnalyte 2-(2-Butoxyethoxy)ethanolAdded 20.0Result 20.0Qualifier 19.8Unit mg/LD 9%Rec 40Limits 9D 50.150Lab Sample ID: LCSD 680-769036/7 Matrix: Water Analysis Batch: 769036Client Sample ID: Lab Control Sample Du Prep Type: Total/NAnalyte 2-(2-Butoxyethoxy)ethanolSpike AddedLCSD ResultLCSD QualifierUnit Mg/LD 9%Rec %RecRep LimitsAnalyte 2-(2-Butoxyethoxy)ethanolAdded 20.0Result 19.1Qualifier Mg/LUnit mg/LD 9%Rec 95RPD 50.150Limits 4Lab Sample ID: 580-124965-2 MS Matrix: Water Analysis Batch: 769036Sample 2.00Spike 4.00MS 2.00MS 19.7MS mg/LMS 9%Rec 98Client Sample ID: AF-RHMW16-WGN01LF-2303W Prep Type: Total/NAnalyte 2-(2-Butoxyethoxy)ethanolSample 3.0Spike U M QMS 20.0MS 19.7D mg/L%Rec 98Limits 50.150Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Sample SampleSpike AddedMS MS 20.0MS 19.7MS mg/LD 98%Rec 50.150Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Sample Spike SpikeMS MS 20.0MS 20.0%Rec 20.0Limits 20.0Prep Type: Total/N 20.0Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Sample	2-(2-Butoxyethoxy)ethanol		3.0 U	М		5.0		1.1 1	ng/L					03/22/23	17:05	
Analysis Batch: 769036Spike AddedLCS ResultLCS QualifierUnit mg/LD %Rec y 99%Rec LimitsAnalyte 2-(2-Butoxyethoxy)ethanol20.019.8Unit mg/LD 99%Rec 50.150Limits 50.150Lab Sample ID: LCSD 680-769036/7 Matrix: Water Analysis Batch: 769036Spike AddedLCSD ResultClient Sample ID: Lab Control Sample Do Prep Type: Total/NAnalyte 2-(2-Butoxyethoxy)ethanolSpike 20.0LCSD 19.1LCSD mg/LD 9 %Rec 95%Rec 50.150Analyte 2-(2-Butoxyethoxy)ethanolSample 3.0Spike UAdded 20.0Result 19.1Qualifier mg/LUnit 9 9D %Rec 4%Rec Limits 7Analyte 2-(2-Butoxyethoxy)ethanolSample 3.0Spike UMS MSMS MS%Rec 98Limits 50.150Added 4Analyte 2-(2-Butoxyethoxy)ethanolResult 3.0Qualifier UAdded 20.0MS MSMS MS%Rec MS MSLimits 50.150Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Result QualifierQualifier Unit UUnit mg/LD %Rec MS MS%Rec MS MS MSLimits So.150Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Sample SampleSpike SpikeMS MSMS MSMS MS%Rec MS MSDLimits So.150Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Sample<	Lab Sample ID: LCS 680-70	69036/6								Cli	ent	San	nple ID:	: Lab Cor	ntrol Sa	mpl
AnalyteSpikeLCSLCSWith QualifierD%RecAnalyte20.019.8009950.1500Lab Sample ID: LCSD 680-769036/7 Matrix: Water Analysis Batch: 769036Client Sample ID: Lab Control Sample Du Prep Type: Total/NClient Sample ID: Lab Control Sample Du Prep Type: Total/NAnalyteSpikeLCSDClient Sample ID: Lab Control Sample Du Prep Type: Total/NAnalyteSpikeLCSDLCSD%RecRF Prep Type: Total/N2-(2-Butoxyethoxy)ethanol20.019.10%RecRF Prep Type: Total/NLab Sample ID: 580-124965-2 MS Matrix: Water Analysis Batch: 769036SampleSpikeMSMS%RecAnalyteResult QualifierQualifierAddedResult QualifierUnit mg/LD%RecLimits Prep Type: Total/NAnalyteResult QualifierQualifierAddedResult QualifierQualifierUnit mg/LD%RecLimits Prep Type: Total/N2-(2-Butoxyethoxy)ethanol3.0U M Q20.019.7Client Sample ID: AF-RHMW16-WGN01LF-2303W MS%RecAnalyteResult QualifierQualifierAddedResult MSMSMS%RecAnalyteResult QualifierQualifierAddedResult MSMSD%RecLimits So.150Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036SampleSpikeMSD%RecResult Prep Type: Total/N<	Matrix: Water													Prep Ty	pe: Tot	al/N/
AnalyteAddedResultQualifierUnitD%RecLimits2-(2-Butoxyethoxy)ethanol20.019.8QualifierUnitD%RecLimitsLab Sample ID: LCSD 680-769036/7 Matrix: Water Analysis Batch: 769036SpikeLCSDClient Sample ID: Lab Control Sample DU Prep Type: Total/NAnalyteAddedSpikeLCSDLCSD%RecResult2-(2-Butoxyethoxy)ethanol20.019.1QualifierUnitD%RecRes2-(2-Butoxyethoxy)ethanol20.019.119.1QualifierUnitD%RecResLab Sample ID: 580-124965-2 MS Matrix: Water Analysis Batch: 769036SampleSampleSpikeMSMSMSWRecAnalyteResultQualifierAddedResultQualifierUnitD%RecLimits2-(2-Butoxyethoxy)ethanol3.0U M Q20.019.7QualifierUnitD%RecLimits2-(2-Butoxyethoxy)ethanol3.0U M Q20.019.7QualifierUnitD%RecLimits2-(2-Butoxyethoxy)ethanol3.0U M Q20.019.7QualifierUnitD%RecLimits2-(2-Butoxyethoxy)ethanol3.0U M Q20.019.7QualifierUnitD%RecLimits2-(2-Butoxyethoxy)ethanol3.0U M Q20.019.7Client Sample ID: AF-RHMW16-WGN01LF-2303WPrep Type: Total/NAnalyteSam	Analysis Batch: 769036															
2-(2-Butoxyethoxy)ethanol       20.0       19.8       mg/L       99       50 - 150         Lab Sample ID: LCSD 680-769036/7 Matrix: Water Analysis Batch: 769036       Client Sample ID: Lab Control Sample Du Prep Type: Total/N         Analyte       Added       Spike       LCSD       LCSD       %Rec       RR         Analyte       Added       Result       Qualifier       Unit       D       %Rec       RPD       Lim         2-(2-Butoxyethoxy)ethanol       20.0       19.1       Client Sample ID: AF-RHMW16-WGN01LF-2303W Prep Type: Total/N         Lab Sample ID: 580-124965-2 MS Matrix: Water Analyte       Sample       Spike       MS       MS MS       MS mg/L       98       %Rec So - 150       RPD       Lin         2-(2-Butoxyethoxy)ethanol       3.0       U M Q       20.0       19.7       Qualifier       Unit mg/L       D       %Rec %Rec Limits       MRec So - 150         Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036       Sample Sample       Spike       MS       MS MSD       MS MSD       %Rec %Rec       Limits So - 150       -         Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036       Sample Sample       Spike       MSD       MSD       %Rec       NR Prep Type: Total					Spike		LCS	LCS						%Rec		
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Matrix: Water Analysis Batch: 769036       Prep Type: Total/N         Analyte 2-(2-Butoxyethoxy)ethanol       Spike Added       LCSD Result       LCSD Qualifier       Unit mg/L       D %Rec 95       %Rec Limits       RPD Lim A       Limits L       RPD Lim Limits       Limits RPD       RPD Lim Lim Limits       Limits RPD       RPD Lim Limits       Limits RPD       RPD Lim Limits       Limits RPD       RPD Limits       Limits RPD       RPD RPD       Limits RPD       RPD RPD       Limits RPD       RPD RPD       Limits RPD       RPD       Limits RPD       RPD       Limits RPD </td <td>2-(2-Butoxyethoxy)ethanol</td> <td></td> <td></td> <td></td> <td>20.0</td> <td></td> <td>19.8</td> <td></td> <td></td> <td>mg/L</td> <td></td> <td></td> <td>99</td> <td>50 - 150</td> <td></td> <td></td>	2-(2-Butoxyethoxy)ethanol				20.0		19.8			mg/L			99	50 - 150		
Analysis Batch: 769036SpikeLCSDLCSD%RecRFDAnalyteAddedResultQualifierUnitD%RecRFD2-(2-Butoxyethoxy)ethanol20.019.1UnitD%RecLimitsRPDLab Sample ID: 580-124965-2 MSClient Sample ID: AF-RHMW16-WGN01LF-2303WMatrix: WaterAnalysis Batch: 769036Prep Type: Total/NAnalyteResultQualifierAddedResultQualifierUnitD%Rec2-(2-Butoxyethoxy)ethanol3.0U M Q20.019.7UnitD%RecLimits2-(2-Butoxyethoxy)ethanol3.0U M Q20.019.7UnitD%RecLimits2-(2-Butoxyethoxy)ethanol3.0U M Q20.019.7Client Sample ID: AF-RHMW16-WGN01LF-2303WLab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Sample SpikeMSD%RecResultSample SampleSpikeMSD%RecResult Sample ID: AF-RHMW16-WGN01LF-2303WMatrix: Water Analysis Batch: 769036Sample SpikeMSD%RecResult Sample ID: AF-RHMW16-WGN01LF-2303W	Lab Sample ID: LCSD 680-	769036/7							С	lient S	am	ole	ID: Lab	Control	Sample	e Du
AnalyteAddedLCSDLCSD%RecRed2-(2-Butoxyethoxy)ethanol20.019.19.19.19.19.550.1504Lab Sample ID: 580-124965-2 MS Matrix: Water Analysis Batch: 769036Client Sample ID: AF-RHMW16-WGN01LF-2303W Prep Type: Total/NAnalyteSample QualifierSample U M QSpike 20.0MS 19.7MS Qualifier9.5%Rec 9.5MR 4Lab Sample ID: 580-124965-2 MS Matrix: Water Analysis Batch: 769036Sample U M QSpike 20.0MS 19.7MS Qualifier Unit mg/L0%Rec 9.8Kec 50.150	Matrix: Water													Prep Ty	pe: Tot	al/N
Analyte 2-(2-Butoxyethoxy)ethanolAdded 20.0Result 19.1Qualifier mg/LUnit mg/LD %Rec 50 - 150Limits RPD 4Lab Sample ID: 580-124965-2 MS Matrix: Water Analysis Batch: 769036Sample Result QualifierSpike AddedMS MSMS MSClient Sample ID: AF-RHMW16-WGN01LF-2303W Prep Type: Total/N %Rec 19.7Analyte 2-(2-Butoxyethoxy)ethanolSample 3.0Spike U M QMS 20.0MS 19.7MS mg/LD w %Rec mg/L%Rec Limits D 98Lim 4Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Sample Sample SpikeSpike MSDMSD%Rec w Rec KecResult Limits Prep Type: Total/NLab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Sample SpikeMSD%Rec w RecResult Result MSD%Rec RE	Analysis Batch: 769036														-	
2-(2-Butoxyethoxy)ethanol       20.0       19.1       mg/L       95       50.150       4         Lab Sample ID: 580-124965-2 MS Matrix: Water Analysis Batch: 769036       Client Sample ID: AF-RHMW16-WGN01LF-2303W Prep Type: Total/N         Analyte       Sample       Sample       Spike       MS       MS       %Rec         2-(2-Butoxyethoxy)ethanol       3.0       U M Q       20.0       19.7       Unit       D       %Rec         Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036       Sample Sample       Spike       MS MS       Client Sample ID: AF-RHMW16-WGN01LF-2303W Prep Type: Total/N         Matrix: Water Analysis Batch: 769036       Sample Sample       Spike       MSD MSD       %Rec       Rec					Spike		LCSD	LCSE	)					%Rec		RPI
Lab Sample ID: 580-124965-2 MS Matrix: WaterClient Sample ID: AF-RHMW16-WGN01LF-2303W Prep Type: Total/NAnalysis Batch: 769036SampleSpikeMSMSPrep Type: Total/NAnalyteResult QualifierQualifier U M QAdded 20.0Result 19.7Qualifier MSUnit mg/LD%Rec 98Limits 50-150Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Sample SampleSpikeMSD%RecLimits mg/L-Sample SampleSpikeMSD MSD%RecRec MSD MSDRecRec MSD MSDRecRec MSD MSDRec	<u> </u>							Quali	fier	Unit		D	%Rec	Limits	RPD	Lim
Matrix: Water       Prep Type: Total/N         Analysis Batch: 769036       Sample       Spike       MS       MS       MS       %Rec         Analyte       Result       Qualifier       Added       Result       Qualifier       MI       D       %Rec       Limits	2-(2-Butoxyethoxy)ethanol				20.0		19.1			mg/L			95	50 - 150	4	50
Analysis Batch: 769036       Sample       Sample       Spike       MS       MS       MS       %Rec         Analyte       Result       Qualifier       Added       Result       Qualifier       Unit       D       %Rec       Limits	Lab Sample ID: 580-12496	5-2 MS						Clier	nt Sa	mple l	D: A	۲-I	RHMW1	6-WGN0	1LF-23	03W:
Analyte 2-(2-Butoxyethoxy)ethanolSample ResultSample QualifierSpike AddedMS ResultMS Qualifier%Rec Unit mg/LLimits 98Limits 50-150Lab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036SampleSpikeMSD%Rec ResultSampleSampleSpikeMSDMSD%Rec	Matrix: Water													Prep Ty	pe: Tot	al/N/
AnalyteResultQualifierAddedResultQualifierUnitD%RecLimits2-(2-Butoxyethoxy)ethanol3.0U M Q20.019.7QualifierUnitD%RecLimitsLab Sample ID: 580-124965-2 MSD Matrix: Water Analysis Batch: 769036Client Sample ID: AF-RHMW16-WGN01LF-2303W Prep Type: Total/NSample SampleSpikeMSD%RecRf																
2-(2-Butoxyethoxy)ethanol       3.0       U M Q       20.0       19.7       mg/L       98       50 - 150         Lab Sample ID: 580-124965-2 MSD       Client Sample ID: AF-RHMW16-WGN01LF-2303W         Matrix: Water       Prep Type: Total/N         Analysis Batch: 769036       Sample Sample       Spike       MSD       %Rec       RF	Analysis Batch: 769036				Spiko		MS	MS						%Rec		
Lab Sample ID: 580-124965-2 MSD     Client Sample ID: AF-RHMW16-WGN01LF-2303W       Matrix: Water     Prep Type: Total/N       Analysis Batch: 769036     Sample Sample	Analysis Batch: 769036	•	•		Spike											
Matrix: Water Prep Type: Total/N Analysis Batch: 769036 Sample Sample Spike MSD MSD %Rec Rf	Analyte	Result	Qualifi		Added		Result		fier			D				
Analysis Batch: 769036 Sample Sample Spike MSD MSD %Rec RF	Analyte	Result	Qualifi		Added		Result		fier			D				
Sample Sample Spike MSD MSD %Rec RF	Analyte 2-(2-Butoxyethoxy)ethanol	<b>Result</b> 3.0	Qualifi		Added		Result 19.7	Quali		mg/L	ID: 4	_	98	50 - 150	 1LF-23	03W
	Analyte 2-(2-Butoxyethoxy)ethanol Lab Sample ID: 580-124965	<b>Result</b> 3.0	Qualifi		Added		Result 19.7	Quali		mg/L	ID: /	_	98	50 - 150		
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	Analyte 2-(2-Butoxyethoxy)ethanol Lab Sample ID: 580-124965 Matrix: Water	Result 3.0 5-2 MSD Sample	Qualifie UMQ	er	Added 20.0 Spike		Result 19.7	Quali Clier MSD	nt Sa	mg/L	ID: #	_	98 RHMW1	50 - 150 I6-WGN0 Prep Ty %Rec	pe: Tot	

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_	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8015C GLY		1	769036	JCK	EET SAV	03/22/23 17:51	
Client Sam	ple ID: AF-	RHMW16-W0	GN01LF-2	2303W2			Lab	Sample ID:	580-124965-2
Date Collecte								-	Matrix: Wate
_	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8015C GLY		1	769036	JCK	EET SAV	03/22/23 18:15	
Date Collecte	d: 03/14/23 1		3-WGN0	1LF-2303	VV Z		Lad	Sample ID:	
Date Collecte	d: 03/14/23 1	0:40	13-WGN0	Dilution	VV 2 Batch		Lap		
Date Collecte Date Receive Prep Type	d: 03/14/23 1 d: 03/16/23 1 Batch Type	0:40 3:00 Batch Method	<b>3-WGN0</b>		Batch Number	Analyst	Lab	Prepared or Analyzed	
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Lab Chronicle

Laboratory References:

Client: AECOM

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Job ID: 580-124965-1

## Accreditation/Certification Summary

Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

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8 9 10

## Laboratory: Eurofins Savannah

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

Authority ANAB	Program Dept. of Defense ELAP	Identification Number	Expiration Date 09-22-24
The following analytes are included in this the agency does not offer certification.	report, but the laboratory is not cert	ified by the governing authority.	This list may include analytes for which

 Analysis Method
 Prep Method
 Matrix
 Analyte

 8015C GLY
 Water
 2-(2-Butoxyethoxy)ethanol

## Sample Summary

## Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

Job ID: 580-124965-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-124965-1	AF-RHMW10-WGN01LF-2303W2	Water	03/14/23 12:55	03/16/23 13:00
580-124965-2	AF-RHMW16-WGN01LF-2303W2	Water	03/13/23 14:30	03/16/23 13:00
580-124965-3	AF-HDMW225303-WGN01LF-2303W2	Water	03/14/23 10:40	03/16/23 13:00
580-124965-4	AF-RHMW12A-WGN01LF-2303W2	Water	03/13/23 11:10	03/16/23 13:00
580-124965-5	AF-RHMW12A-WGFD01LF-2303W2	Water	03/13/23 11:10	03/16/23 13:00

Seattle		
ins FGS,	Street East	WA 98424
Eurofi	5755 8th	Tacoma.

**Chain of Custody Record** 

Curofins Environment Testing America

Tacoma, WA 98424			United Awies o	6257	884F3	America
Client Information	MMC Shindy	Lab PM: Elaine Walker		No(s):	COC №: 2303W2AFEA03	
	Phone 56.938.7710	E-Mail: <u>M.Elaine.Walker@EurofinsET.com</u>	EurofinsET.com Hawaii		Page: Page 1 of 1	
Company: AECOM	PWSID:		Analysis Requested	<u>.</u>	Job #:	
Address: 1001 Bishop St. Suite 1600	Due Date Requested: see subcontract				ð	- Hexane
City: Honolulu	TAT Requested (days): Rush - ASAP	Ic.			B - NaOH C - Zh Acetate	N - None O - AsNaO2
State, Zip: Hawaii 96813	Compliance Project: 🛆 Yes 🛆 No	ethan ethan		<u></u>		- Na2045 - Na2S03 - Na2S203
Phone: 808-954-4512 / 770-331-0794	PO #:			<u>م</u> ر با	σ	- H2SO4 - TSP Dodecahydrate
om)/ Mark Kromis (mark.kromis@aecom.com)	:# OM	(oN )			E	U - Acetone V - MCAA
	Project #: 60697810	o seY			A A	W - pH 4-5 Z - other (specify)
Site: RHSF	SSOW#:	) asw		NAMES OF A DESCRIPTION OF A DESCRIPTION OF A DESCRIPTIONO	Other:	
	Sample			edmuN Isto		
Sample identification	Sample Uate 11me G-grap)	tion Code: XX				
AF-RHMW10-WGN01LF-2303W2	7/11/23 1255 G	× z z		<u>е</u>		
		1 m 31	13123			
Identification		Sample Di	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month, 	samples are retaine	etained longer than 1 n Archive Eor	ionth) Months
		ver. ve. DoD Stage Special Ins	tructions/QC Requirements: DOD C		5	
Empty Kit Relinquished by:	4 report standard JAL. AECUM EUUIS EUU	Time:		Method of Shipment:		
Relinquistred by: Mive, W. M.	Date/Time: 1500	Company Received AECOM	Received by James Marin	Date Time: 4/23	1500	Company AECO M
anes rason	5/23 1400	Company Received by:	in Kartel	116/2	3 1300 °	COMERTING
Relinquished by:	Date/Time:	Company . Received by:	d by:			Company '
Custody Seals Intact: Custody Seal No.:		Cooler Te	Cooler Temperature(s) °C and Other Remarks:	1.2/	1.2	
					>	Ver: 01/16/2019

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Eurofins FGS, Seattle 5755 8th Street East

**Chain of Custody Record** 

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Environment Testing	nerica

5755 8th Street East	Chain of Custouy record	Kurlin U	ちてん いいしんやみひ	America V	[
			Carrier Tracking No(s):	COC No: 2303W2AFEA06	
	ale tree			Page:	
Client Contact:	ゆりょうちん	e-waii. M.Elaine.Walker@EurofinsET.com	Hawaii	Page 1 of 1 Job #:	
Company:	PWSID:	Analysis Requested		Preservation Codes:	
	Due Date Requested: see subcontract				
1 Bishop St. Suite 1600	TAT Requested (days):	/			
cuy: Honolulu	Rush - ASAP				
State. Zip: Hawaii 96813	Compliance Project: $\Delta$ Yes $\Delta$ No			F - MeOH R - Na2S203 G - Amchlor S - H2S04	
770-331-0794	(0N	1	$\mathcal{A}$		irate
om)/ Mark Kromis (mark.kromis@aecom.com)				ater	
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	Sample	1AQ_3210		Special Instructions/Note:	
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ested: I, II, III, IV, Ot	a (Level 1or2)=see 1A1 above. עסט סומפי מינלימית דעד _AFCOM FOulS EDD.		11-11-14 of Chiamant		
r V# Dolineriched hr			Method of Shipment:	K Company	
Reimpustred Phy. A+1 (+) CACC	Date Timper 25 / 75 7 A Company	R Juno	NAS BAPTIME	R	
Relinquished by:	S S	Por And Dr. And	(10 1 3/16/2	3 13(2) E1#3M	Ş
		Received by:			
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D A Yes A No				2 44. VII 2 44.	2

Eurofins FGS, Seattle 5755 8th Street East Tacoma, WA 98424

**Chain of Custody Record** 

Controfins Environment Testing America

Tacoma, WA 98424				2	hert 529-910	Ehe	America
Clinet Information	Specific Shirtow		Lab PM: Elaine Walker		Carrier Tracking No(s): EadEx UNETED	*):51 COC No: 2303W2AFEA04	A04
	<b>N</b>	7710	E-Mail: M.Elaine.Wa	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii	Page: Page 1 of 1	
Company: AECOM		PWSID:		Analysis Requested	quested	:# qor	
hob St. Suite 1600	Due Date Requested: see subcontract					Preservation Codes	Po Co
	TAT Requested (days): RuSh - ASAP	ASAP				B - NaOH C - Zn Acetate D - Nitric Acid	N - None O - AsNaO2 P - Na2O4S
State, Zp: Hawaii 96813	iance Project: ∆ Yes	Δ No		nsdis		E - NaHSO4 F - MeOH	
/ 770-331-0794	PO #:			<u>ج</u>	<u>}</u>	G - Amchlor H - Ascorbic Acid	
om)/ Mark Kromis (mark.kromis@aecom.com)	:# OM				2		U - Acetone V - MCAA W - nH 4-5
	Project #: 60697810			5-(5-91		CASES OF AN	Z - other (specify)
	SSOW#:			, , , , , , , , , , , , , , , , , , ,			
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			San	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	assessed if samples a	re retained longer th	an 1 month)
Non-Hazard Teammable Skin Irritant Poison B	Umknown kad	kadiological		Return To Client	Disposal By Lab	Archive For	Months
ested: I, II, III, IV, O	Prelim data (Level 1or2)=s 4 renort standard TAT_AE	_evel 1or2)=see TAT above. Dol lard TAT_AECOM EQuIS EDD.	DoD Stage Spe	Prelim data (Level 10r2)=see TAT above. DoD Stage  Special Instructions/QC Requirements: DOU QSM project. 4 renort standard TAT_AECOM EQUIS EDD.	ients: DUD USM project		
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Mason	52/5	(4w com	Je B	Regged by Lint	2 Date 2/16/	16/23 1300	
Relinquished by:	Date/Time:	Com	Company	Received by:	Date/Time		Company
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						-	Ver: 01/16/2019

Eurofins FGS, Seattle 5755 8th Street East Tacoma, WA 98424

**Chain of Custody Record** 

🛟 eurofins Environment Testing America

5755 8th Street East Tacoma, WA 98424	Clialit of Custory		016-62578743	
	Sappler OILA NILLAN	Lab PM: Flaine Walker	Carrier Tracking No(s): 7/1/1/	COC No: 2303W2AFEA05
Client Information	ų,	E-Mail:	State of Origin:	Page: Doco 1 of 1
Client Contact:	208 -639 2434	ine.Walker@Eurofins	Hawaii	Lage I of I
Company:	:DISMd	Analysis	Analysis Requested	Preservation Codes:
	Due Date Requested:	(		
ishop St. Suite 1600	see subcontract			
	IAI Kequesieu (udys). Rush - ASAP	lon		
State, Zp: Lannii 06913	Compliance Project: 🛆 Yes 🛆 No	Etha-1		F-Mail South R-Market
Phone: Phone: 2020 21 2120 221 0704	PO#:			H - Ascorbic Acid
806-954-45121710-551-5154 Email:	:# OM	(oN 1		J - DI Water K - EDTA
	Project #:	0 59	.7	
CTO N6274223F0104	60697810 sector#+-	N C		0 Other:
Site: DHSF	.*************************************	)SW/	Å	
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		D Stage	Special Instructions/QC Requirements: DOD usin project.	
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	4	Time.	Method of Shipment:	15-06-
	Date/Time: A0 / 2 /0 P / 6 D L A	AECOM Received by: $ANX E_0$	MChd Date/Time: 3	13/23 AND A ELDV
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3/24/2023

Seattle		
ns FGS,	Street East	VVA QRADA
Eurofins	5755 8th Street	[aroma

**Chain of Custody Record** 

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Tacoma WA 98424		Clialit of Castouy Necola	ecold United	& AWG OIL 625	7 8 84 F.Y. Amer ca	
Client Information	Sam M NG M	Mr Vou	Lab PM: Elaine Walker		COC No <sup>-</sup> 2303W2AFEA03	
	Phone 56.938.7	170 MI	E-Mail: M Elaine Walker@EurofinsET com	State of Origin D Hawaii	Page: Page 1 of 1	
Company AECOM	5	DWSID	Analy	Analysis Requested	Job #:	
boo St. Suite 1600	Due Date Requested. See subcontract				Preservation Codes:	
	TAT Requested (days): Rush - ASAP	SAP			B - NaOH N - None C - Zh Acetate O - AsNaO2	
State Zp. Hawaii 96813	liance Project: 🛆 Yes	A No	onsdie			
Phone: 808-954-4512 / 770-331-0794	PO #-			27	F - MeUH K - Na2S2U3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahvdrate	
watson.tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com)	:# OM		(0N .		I - Ice J - DI Water	
ct Name: D N6274223F0104	Project #: 60697810		io səj		E K - EDTA W - PH 4-5 E L - EDA Z - other (specify)	
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		Sample Matrix Type (V=water (C=comp, C=wasteriol)	ield Filtered erform MS/N D15C_DAI_GL		iedmuki Isjo	
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		NNM	1 3//3/233	280-12496	580-124965 Chain of Custody	
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Possible Hazard Identification           Possible Hazard Identification           Non-Hazard         Flammable         Skin Irritant         Poison B	с П Т т к помп	Fradiological	Sample Disposal ( A fee	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month, Return To Client	stained longer than 1 month) Archive For Months	
Other (specify)	Prelim data (L 4 report stand	evel 1or2)=see TAT above DoD Stage ard TAT AFCOM FOuld FDD		Special Instructions/QC Requirements DOD QSM project.		
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Religionistic de la Contra Con	9 <u>-20</u> 07			ress,	23 1500 Company of	
James Hasin	M	1400 COMPANY		Met Date/Time: 16/	23 1300	$\overline{\ }$
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Custody Seals Intact: Custody Seal No △ Yes △ No			Cooler Temperature(s) °C and Other Remarks.	nd Other Remarks.	2/1.2	
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**Chain of Custody Record** 

🐝 eurofins Ervironment Testing

Tacoma WA 98424				Un./rd		5-5788'23	3	America
Client Information	Sampler.	Azicar	/ Lab PM: Elaine Walker	lker	Carrier Tracking No(s): FedEरें		COC No: 2303W2AFEA06	
	12	4	E-Mail: <u>M Elaine.</u> /	E-Mail: M Elaine.Walker@EurofinsET com	State of Origin <sup>.</sup> Hawaii	e d	Page: Page 1 of 1	
Company AECOM		DISWA		Analys	Analysis Requested	0 <u></u>	Job #:	
Address. 1001 Bishop St. Sunte 1600	Due Date Requested see subcontract			$\leq$			8	is: M - Hexane
City Honolulu	TAT Requested (days). Rush - ASAP	ASAP					B - NaOH C - Zn Acetate	N - None O - AsNaO2
State, Zp. Hawaii 96813	Compliance Project: $\Delta$ Yes	∆ No		ethanc				P - Na204S Q - Na2S203 R - Na2S203
Phone: 808-954-4512 / 770-331-0794	PO #:				5	. <u>9 t</u>		S - H2SO4 T - TSP Dodecahydrate
jaecom.com)/ Mark Kromis (mark.kromis@aecom.com)	:# OM							U - Acetone V - MCAA
Project Name: CTO N6274223F0104	Project #: 60697810					10.00 Tree of	T A	w - pri 4-5 Z - other (specify)
	-#MOSS				<i>C)</i> ////////////////////////////////////	1.0	Other-	
			Matrix (W-water (W-water S-solid, S-solid, D-wastefoil, e effor	סזנכ_סאו_פו		otal Numbe	tool loicons	
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Possible Hazard Identification		Kadiological	<u>^</u>	Sample Disposal ( A ree may be assessed it samples are retained ronger uran 1 monu) — Return To Client Disposal By Lab Archive For Mon	ay be assessed if sam Disposal By Lab	In pres are retained rong	le For	Months
ested 1 II III, IV Other (specify)	Prelim data (	see TAT above	D Stage	Special Instructions/QC Requirements DOD QSM project	quirements DOD QSI	Ι.		
Empty Kit Relinquished by	4 report standard IAL A	iard TAL. AECOM EQUIS EUD	Time		Method of Shipment:	Shipment:		
PARTIES AUCH ALCH	Date/Timpe: 25 / 1	55 t 0	Company AECOM	Received by		Date/Time:		Company **
Reinquisted by	5/23	0	Company ÀÉCE M	Regened by 15	alla l	Date/Time: 3/16/23	1 3w	company A 5 W
Relinquished by	Date/Time	0	Company	Received by		Date/Time:		Company
Custody Seals Intact: Custody Seal No. Δ Yes Δ No				Cooler Temperature(s) °C and Other Remarks:	Other Remarks:	12-1	1.2	
								Ver 01/16/2019

Eurofins FGS, Seattle 5755 8th Street East Tacoma, WA 98424

**Chain of Custody Record** 

🐝 eurofins Environm.cr<sup>t</sup> Testing America

lacoma, WA 98424	ľ			l oh DM-		016- Carrier Tracking N	Churly		Amerca
Client Information		SAINCE		Elaine Walker	ter	Leadex UNETED	215114	2303W2AFEA04	
	1.6	938-77	710	E-Mail M Elaine W	E-Mail M Elaine Walker@EurofinsET com	State of Origin Hawaiı		Page: Page 1 of 1	
Company AECOM		M	PWSID		Analysi	Analysis Requested		Job #:	
Address. 1001 Bishop St. Suite 1600	Due Date Requested see subcontract								les: M - Hexane
City Honolulu Seter 70.	TAT Requested (days	): Rush - ASAP	۵.		lon			B - NaOH C - Zn Acetate D - Nitric Acid	N - None O - AsNaO2 P - Na2O4S
	Compliance Project:	∆Yes ∆No	0		ısdi9-	-	······		Q - Na2SO3 R - Na2S2O3
Phone: 808-954-4512 / 770-331-0794	PO #:			(on	-{ <b>/</b> xoy	2 /~			S - H2SO4 T - TSP Dodecahydrate
Email. Watson Tanji (watson.tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com)	:# OM				şə Xoş				U - Acetone V - MCAA
Project Name: CTO N62742350104	Project #: 60697810				nq-z)-;	r Ž		K - EDTA L - EDA	W - pH 4-5 Z - other (specify)
	SSOW#:						Andreadanter	Other	
Comelo Idonéñeration	Samula Data	Sample (C	Type (C=comp, 0,000)	Matrix Matrix (Mawater S=solid, Omwasuka, Omwasuka, Hertorm	IO15C_DAL_GL		iedmuN Isio	Snecial Inc	Snerial Instructions/Note
cample identification		$\mathbf{T}$	Preservation Code:	X	2		X		
AF-HDMW225303-WGN01LF-2303W2	3/14/23 1	040	 ט	z z ⊰	×		8		
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		+							
			A						
			11 11-2	~ 2 /1H	/ 43				
		2		,					
Possible Hazard Identification Non-Hazard - Flammable Skin Irritant Poison B		Fradiological	ical		Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month, — Return To Client Disposal By Lab Archive For Mon	ay be assessed if san	mples are retaine b	etained longer than 1 Archive For	1 month) Months
ested I, II, III IV Other (specify)	Prelir 4 ren	10r2)=see 7 TAT_AFCO	AT above D	D Stage	Special Instructions/QC Requirements DOD QSM project.	uirements DOD QSN	d project.		
Empty Kit Relinquished by		Date.		Time		Method of Shipment:	Shipment:		
Relinquistred by Chi UT US	Data/Time: Data/Time:	- <u>5</u> 8	Company AECOM	any M	Received by James	Masan	Date/Time: ラバリイ/ころ	1500	Company
lames Mason	Date/Time: 3/13/23	(4a)		Company	Regent L	th	5	3 1300	Company LETHAM
	Date/Time:		Company	any	Received by-		Date/Time:	1	Company
Custody Seals Intact: Custody Seal No. △ Yes △ No					Cooler Temperature(s) °C and Other Remarks:	Other Remarks:	1.21	11.2	
							4		Ver 01/16/2019

Seattle		
ns FGS,	I Street East	WA 98424
Eurofin	5755 8th	Tacoma,

# **Chain of Custody Record**

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516-6257 8743

Client Information	EADERE ALLEN	Lab PM: Elaine Walker	Valker		Carrier Tracking No(s):	556	COC No: 2303W2AFEA05	2
act	-Der34	E-Mait: M Etain	e Walke	E-Mail: M Elaine Walker@EurofinsET com	State of Origin Hawaii		Page: Page 1 of 1	
Company AECOM	<b>DISW4</b>			Analysis Requested	tequested		Job #:	
Address: 1001 Bishop St. Suite 1600	Due Date Requested see subcontract			(			Preservation Codes A - HCL M	des: M - Hexane
City Honolulu	TAT Requested (days). Rush - ASAP		ol	/			B - NaOH C - Zn Acetate	N - None O - AsNaO2 D - Nocode
State, Zip: Hawaii 96813	Compliance Project:		nedtə				E - NaHSO4 F - MeOH	C - Na2203 C - Na2S03 R - Na2S203
Phone: 808-954-4512 / 770-331-0794	HO #:	(0)	·(ʎxou	1) 	Ý		G - Amchior H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydrate
watson tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com)	WO #:	10 58		2		1615		U - Acetone V - MCAA
Project Name: CTO N6274223F0104	Project #. 60697810	<u>가) 위</u> ር		/		nletno		w - рп 4-5 Z - other (specify)
Site RHSF	SSOW#:	ms2					Other	
and the second se	Sample Type Sample (C=comp, Time G=rrab)	Matrix et (W=water L	פרלסות MS/I 10_ואס_ס≥ונטו			ədmu <u>N</u> lə <b>jo</b> T		Snecial Instructions/Note:
	Preservi	2				×		
AF-RHMW12A-WGN01LF-2303W2	05/13/23 11/10 G	z ≯	× z			<i>•</i>		
AF-RHMW12A-WGFD01LF-2303W2	UN	z ≯	× z			3		
and the second s								
02/12/22								
1 all la								
Possible Hazard Identification	3 Unknown Radiological		Sample	Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)  Return To Client Disposal By Lab Archive For Mon	oe assessed if sample: Disposal By Lab	s are retai	t <b>tained longer than</b> Archive For	1 month) Months
ested I II III IV. Other (specify)	Prelim data (Level 1or) 4 report standard TAT	e DoD Stage EDD		Special Instructions/QC Requirements	ments DOD QSM project			
Emoty Kit Relinquished by Relinquished by A. 2.01/64 Dr. 1 F. A. C. A. C. A.	Date/Time: A2 / Z / 9 2 / 1 4 1 4	AECOM	Time. Rec	Received by . K 🗙 💭 .	Method of Shipment:	ne:	195. 22	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	340	Company	C.	Refred by A Land	Date/Time:	me: 1179	5 1300	Company ETS SAV
		Company	Rec	Received by:	Date/Time	me:		Company
Custody Seals Intact: Custody Seal No			Cool	Cooler Temperature(s) °C and Other Remarks:	er Remarks:			
						12/1	5	Ver 01/16/2019

## Login Sample Receipt Checklist

## Client: AECOM

## Login Number: 124965 List Number: 1 Creator: Presley, Kim A

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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.	N/A	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	N/A	
Containers are not broken or leaking.	N/A	
Sample collection date/times are provided.	N/A	
Appropriate sample containers are used.	N/A	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	N/A	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Job Number: 580-124965-1

List Source: Eurofins Seattle

Client: AECOM			Job Number: 580-124965-1
Login Number: 124965 List Number: 2 Creator: Meincke, Griffin E			List Source: Eurofins Savannah List Creation: 03/22/23 12:09 PM
Question	Answer	Comment	
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td></td> <td></td> <td></td>			
The cooler's custody seal, if present, is intact.			
Sample custody seals, if present, are intact.			
The cooler or samples do not appear to have been compromised or tampered with.			
Samples were received on ice.			
Cooler Temperature is acceptable.			
Cooler Temperature is recorded.			
COC is present.			
COC is filled out in ink and legible.			
COC is filled out with all pertinent information.			
Is the Field Sampler's name present on COC?			
There are no discrepancies between the containers received and the COC.			
Samples are received within Holding Time (excluding tests with immediate HTs)			
Sample containers have legible labels.			
Containers are not broken or leaking.			
Sample collection date/times are provided.			
Appropriate sample containers are used.			
Sample bottles are completely filled.			
Sample Preservation Verified.			
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs			
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").			
Multiphasic samples are not present.			
Samples do not require splitting or compositing.			
Residual Chlorine Checked.			