

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Erwin Kawata
City & County of Honolulu
630 South Beretania Street
Public Service Bldg. Room 310
Honolulu, Hawaii 96843

Generated 9/9/2023 12:18:49 PM

JOB DESCRIPTION

RED-HILL

JOB NUMBER

380-55393-2

Eurofins Eaton Analytical Pomona

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and 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 Eaton Analytical, LLC Project Manager.

Compliance Statement

1. Laboratory is accredited in accordance with TNI 2016 Standards and ISO/IEC 17025:2017.
2. Laboratory certifies that the test results meet all TNI 2016 and ISO/IEC 17025:2017 requirements unless noted under the individual analysis
3. Test results relate only to the sample(s) tested.
4. This report shall not be reproduced except in full, without the written approval of the laboratory.
5. Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. (DW, Water matrices)

Authorization



Generated
9/9/2023 12:18:49 PM

Authorized for release by
Rachelle Arada, Project Manager
Rachelle.Arada@et.eurofinsus.com
(626)386-1106



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Surrogate Summary	9
QC Sample Results	11
QC Association Summary	15
Lab Chronicle	16
Method Summary	17
Sample Summary	18
Subcontract Data	19
Chain of Custody	79
Receipt Checklists	81

Definitions/Glossary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

Qualifiers

Subcontract

Qualifier	Qualifier Description
U	This analyte was not detected.

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
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

Job ID: 380-55393-2

Laboratory: Eurofins Eaton Analytical Pomona

Narrative

Job Narrative 380-55393-2

Comments

No additional comments.

Receipt

The samples were received on 7/19/2023 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.5° C and 2.9° C.

Subcontract non-Sister

See attached subcontract report.

Subcontract Work

Methods 8015 Gas (Purgeable) LL (EAL), 8015 LL DRO/MRO/JP5/JP8: These methods were subcontracted to EMAX Laboratories Inc. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method 625 PAH Physis LL (EAL) + TICs: This method was subcontracted to Physis Environmental Laboratories. The subcontract laboratory certification is different from that of the facility issuing the final report.



Detection Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-55393-1

No Detections.

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-55393-2

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical Pomona

Client Sample Results

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-55393-1

Date Collected: 07/17/23 11:30

Matrix: Drinking Water

Date Received: 07/19/23 10:00

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Acenaphthene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Acenaphthylene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Anthracene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Biphenyl	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Chrysene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Dibenzothiophene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		07/21/23 00:00	07/31/23 11:54	1
Fluoranthene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Fluorene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Naphthalene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Perylene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Phenanthrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1
Pyrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 11:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	66		27 - 133	07/21/23 00:00	07/31/23 11:54	1
(d10-Phenanthrene)	102		43 - 129	07/21/23 00:00	07/31/23 11:54	1
(d12-Chrysene)	110		52 - 144	07/21/23 00:00	07/31/23 11:54	1
(d12-Perylene)	91		36 - 161	07/21/23 00:00	07/31/23 11:54	1
(d8-Naphthalene)	70		25 - 125	07/21/23 00:00	07/31/23 11:54	1

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			07/20/23 23:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	79		60 - 140		07/20/23 23:14	1

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.028		mg/L			07/28/23 23:14	1
JP5	ND	U	0.056		mg/L			07/28/23 23:14	1
JP8	ND	U	0.056		mg/L			07/28/23 23:14	1
MOTOR OIL	ND	U	0.056		mg/L			07/28/23 23:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE	70		60 - 130		07/28/23 23:14	1

Eurofins Eaton Analytical Pomona

Client Sample Results

Client: City & County of Honolulu
 Project/Site: RED-HILL

Job ID: 380-55393-2

Client Sample ID: MOANALUA WELLS

Date Collected: 07/17/23 11:30
 Date Received: 07/19/23 10:00

Lab Sample ID: 380-55393-1

Matrix: Drinking Water

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
HEXACOSANE	87		60 - 130		07/28/23 23:14	1

Client Sample ID: TB MOANALUA WELLS

Date Collected: 07/17/23 11:30
 Date Received: 07/19/23 10:00

Lab Sample ID: 380-55393-2

Matrix: Water

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GASOLINE	ND	U	0.02		mg/L			07/20/23 23:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOFLUOROBENZENE	79		60 - 140		07/20/23 23:50	1

Surrogate Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: BlankMatrix

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
108477-B1	Method Blank	81	114	114	88	97
108477-BS1	Lab Control Sample	62	88	108	57	87
108477-BS2	Lab Control Sample Dup	66	95	106	64	90

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)				
		Acenaphtl (27-133)	Phenanth (43-129)	CRY (52-144)	NPT (25-125)	PRY (36-161)
380-55393-1	MOANALUA WELLS	66	102	110	70	91

Surrogate Legend

(d10-Acenaphthene) = (d10-Acenaphthene)

(d10-Phenanthrene) = (d10-Phenanthrene)

CRY = (d12-Chrysene)

NPT = (d8-Naphthalene)

PRY = (d12-Perylene)

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: Drinking Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-55393-1	MOANALUA WELLS	79

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		BFB (60-140)
380-55393-2	TB MOANALUA WELLS	79

Surrogate Legend

BFB = BROMOFLUOROBENZENE

Surrogate Summary

Client: City & County of Honolulu
 Project/Site: RED-HILL

Job ID: 380-55393-2

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	
23VG39G12B	Method Blank		
Surrogate Legend			
BFB = BROMOFLUOROBENZENE			

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (70-130)	
23VG39G12C	LCD	110	
23VG39G12L	Lab Control Sample	108	
Surrogate Legend			
BFB = BROMOFLUOROBENZENE			

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Matrix: Drinking Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)	
380-55393-1	MOANALUA WELLS	70	87	
Surrogate Legend				
BB = BROMOBENZENE				
HEXACOSANE = HEXACOSANE				

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB	XACOSAI	
23DSG037WB	Method Blank			
Surrogate Legend				
BB = BROMOBENZENE				
HEXACOSANE = HEXACOSANE				

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Matrix: WATER

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BB (60-130)	XACOSAI (60-130)	
23DSG037WL	Lab Control Sample	66	87	
23J5G037WL	Lab Control Sample	74	88	
23J8G037WL	Lab Control Sample	94	86	
Surrogate Legend				
BB = BROMOBENZENE				
HEXACOSANE = HEXACOSANE				

QC Sample Results

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i

Lab Sample ID: 108477-B1
Matrix: BlankMatrix
Analysis Batch: O-42002

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: O-42002_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
1-Methylphenanthrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
2,3,5-Trimethylnaphthalene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
2,6-Dimethylnaphthalene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
2-Methylnaphthalene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Acenaphthene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Acenaphthylene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Anthracene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Benz[a]anthracene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Benzo[a]pyrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Benzo[b]fluoranthene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Benzo[e]pyrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Benzo[g,h,i]perylene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Benzo[k]fluoranthene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Biphenyl	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Chrysene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Dibenz[a,h]anthracene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Dibenzo[a,l]pyrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Dibenzothiophene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Disalicylidenepropanediamine	ND		0.1	0.05	µg/L		07/21/23 00:00	07/31/23 06:29	1
Fluoranthene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Fluorene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Indeno[1,2,3-cd]pyrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Naphthalene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Perylene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Phenanthrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1
Pyrene	ND		0.005	0.001	µg/L		07/21/23 00:00	07/31/23 06:29	1

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
(d10-Acenaphthene)	81		27 - 133	07/21/23 00:00	07/31/23 06:29	1
(d10-Phenanthrene)	114		43 - 129	07/21/23 00:00	07/31/23 06:29	1
(d12-Chrysene)	114		52 - 144	07/21/23 00:00	07/31/23 06:29	1
(d12-Perylene)	97		36 - 161	07/21/23 00:00	07/31/23 06:29	1
(d8-Naphthalene)	88		25 - 125	07/21/23 00:00	07/31/23 06:29	1

Lab Sample ID: 108477-BS1
Matrix: BlankMatrix
Analysis Batch: O-42002

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-42002_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1-Methylnaphthalene	0.5	0.352		µg/L		70	31 - 128
1-Methylphenanthrene	0.5	0.521		µg/L		104	66 - 127
2,3,5-Trimethylnaphthalene	0.5	0.466		µg/L		93	55 - 122
2,6-Dimethylnaphthalene	0.5	0.404		µg/L		81	48 - 120
2-Methylnaphthalene	0.5	0.389		µg/L		78	47 - 130
Acenaphthene	0.5	0.384		µg/L		77	53 - 131
Acenaphthylene	0.5	0.451		µg/L		90	43 - 140
Anthracene	0.5	0.455		µg/L		91	58 - 135

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 108477-BS1
Matrix: BlankMatrix
Analysis Batch: O-42002

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: O-42002_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benz[a]anthracene	0.5	0.532		µg/L		106	55 - 145
Benzo[a]pyrene	0.5	0.482		µg/L		96	51 - 143
Benzo[b]fluoranthene	0.5	0.539		µg/L		108	46 - 165
Benzo[e]pyrene	0.5	0.491		µg/L		98	42 - 152
Benzo[g,h,i]perylene	0.5	0.5		µg/L		100	63 - 133
Benzo[k]fluoranthene	0.5	0.524		µg/L		105	56 - 145
Biphenyl	0.5	0.483		µg/L		97	56 - 119
Chrysene	0.5	0.536		µg/L		107	56 - 141
Dibenz[a,h]anthracene	0.5	0.48		µg/L		96	55 - 150
Dibenzo[a,l]pyrene	0.5	0.352		µg/L		70	50 - 150
Dibenzothiophene	0.5	0.499		µg/L		100	46 - 126
Disalicylidenepropanediamine	25	20.2		µg/L		81	50 - 150
Fluoranthene	0.5	0.61		µg/L		122	60 - 146
Fluorene	0.5	0.442		µg/L		88	58 - 131
Indeno[1,2,3-cd]pyrene	0.5	0.464		µg/L		93	50 - 151
Naphthalene	0.5	0.345		µg/L		69	41 - 126
Perylene	0.5	0.446		µg/L		89	48 - 141
Phenanthrene	0.5	0.493		µg/L		99	67 - 127
Pyrene	0.5	0.576		µg/L		115	54 - 156

Surrogate	LCS %Recovery	LCS Qualifier	Limits
(d10-Acenaphthene)	62		27 - 133
(d10-Phenanthrene)	88		43 - 129
(d12-Chrysene)	108		52 - 144
(d12-Perylene)	87		36 - 161
(d8-Naphthalene)	57		25 - 125

Lab Sample ID: 108477-BS2
Matrix: BlankMatrix
Analysis Batch: O-42002

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-42002_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene	0.5	0.373		µg/L		75	31 - 128	7	30
1-Methylphenanthrene	0.5	0.556		µg/L		111	66 - 127	7	30
2,3,5-Trimethylnaphthalene	0.5	0.496		µg/L		99	55 - 122	6	30
2,6-Dimethylnaphthalene	0.5	0.423		µg/L		85	48 - 120	5	30
2-Methylnaphthalene	0.5	0.412		µg/L		82	47 - 130	5	30
Acenaphthene	0.5	0.409		µg/L		82	53 - 131	6	30
Acenaphthylene	0.5	0.479		µg/L		96	43 - 140	6	30
Anthracene	0.5	0.465		µg/L		93	58 - 135	2	30
Benz[a]anthracene	0.5	0.549		µg/L		110	55 - 145	4	30
Benzo[a]pyrene	0.5	0.486		µg/L		97	51 - 143	1	30
Benzo[b]fluoranthene	0.5	0.541		µg/L		108	46 - 165	0	30
Benzo[e]pyrene	0.5	0.472		µg/L		94	42 - 152	4	30
Benzo[g,h,i]perylene	0.5	0.509		µg/L		102	63 - 133	2	30
Benzo[k]fluoranthene	0.5	0.522		µg/L		104	56 - 145	1	30
Biphenyl	0.5	0.512		µg/L		102	56 - 119	5	30
Chrysene	0.5	0.528		µg/L		106	56 - 141	1	30

Eurofins Eaton Analytical Pomona

QC Sample Results

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

Method: 625 PAH Physis LL (EAL) + TICs - EPA 625 Base/Neutral and Acid Organics i (Continued)

Lab Sample ID: 108477-BS2
Matrix: BlankMatrix
Analysis Batch: O-42002

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: O-42002_P

Analyte	Spike Added	LCS DUP Result	LCS DUP Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Dibenz[a,h]anthracene	0.5	0.471		µg/L		94	55 - 150	2	30	
Dibenzo[a,i]pyrene	0.5	0.373		µg/L		75	50 - 150	7	30	
Dibenzothiophene	0.5	0.538		µg/L		108	46 - 126	8	30	
Disalicylidenepropanediamine	25	16.8		µg/L		67	50 - 150	19	30	
Fluoranthene	0.5	0.624		µg/L		125	60 - 146	2	30	
Fluorene	0.5	0.471		µg/L		94	58 - 131	7	30	
Indeno[1,2,3-cd]pyrene	0.5	0.458		µg/L		92	50 - 151	1	30	
Naphthalene	0.5	0.375		µg/L		75	41 - 126	8	30	
Perylene	0.5	0.449		µg/L		90	48 - 141	1	30	
Phenanthrene	0.5	0.484		µg/L		97	67 - 127	2	30	
Pyrene	0.5	0.573		µg/L		115	54 - 156	0	30	

Surrogate	LCS DUP		Limits
	%Recovery	Qualifier	
(d10-Acenaphthene)	66		27 - 133
(d10-Phenanthrene)	95		43 - 129
(d12-Chrysene)	106		52 - 144
(d12-Perylene)	90		36 - 161
(d8-Naphthalene)	64		25 - 125

Method: 8015 Gas (Purgeable) LL (EAL) - SW846 8015B Gasoline Range Organics

Lab Sample ID: 23VG39G12B
Matrix: WATER
Analysis Batch: 23VG39G12

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
GASOLINE	ND	U	0.02		mg/L			07/20/23 17:48	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
BROMOFLUOROBENZENE					07/20/23 17:48	1

Lab Sample ID: 23VG39G12L
Matrix: WATER
Analysis Batch: 23VG39G12

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	RPD
GASOLINE	0.5	0.441		mg/L		88	60 - 130	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
BROMOFLUOROBENZENE	108		70 - 130

QC Sample Results

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

Method: 8015 LL DRO/MRO/JP5/JP8 - 8015 - TPH DRO/ORO

Lab Sample ID: 23DSG037WB
Matrix: WATER
Analysis Batch: 23DSG037W

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DIESEL	ND	U	0.025		mg/L			07/28/23 19:29	1
JP5	ND	U	0.05		mg/L			07/28/23 19:29	1
JP8	ND	U	0.05		mg/L			07/28/23 19:29	1
MOTOR OIL	ND	U	0.05		mg/L			07/28/23 19:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
BROMOBENZENE					07/28/23 19:29	1
HEXACOSANE					07/28/23 19:29	1

Lab Sample ID: 23DSG037WL
Matrix: WATER
Analysis Batch: 23DSG037W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
DIESEL	2.5	2.13		mg/L		85	50 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	66		60 - 130
HEXACOSANE	87		60 - 130

Lab Sample ID: 23J5G037WL
Matrix: WATER
Analysis Batch: 23DSG037W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
JP5	2.5	1.82		mg/L		73	30 - 160

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	74		60 - 130
HEXACOSANE	88		60 - 130

Lab Sample ID: 23J8G037WL
Matrix: WATER
Analysis Batch: 23DSG037W

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
JP8	2.5	2.7		mg/L		108	30 - 160

Surrogate	LCS %Recovery	LCS Qualifier	Limits
BROMOBENZENE	94		60 - 130
HEXACOSANE	86		60 - 130

QC Association Summary

Client: City & County of Honolulu
 Project/Site: RED-HILL

Job ID: 380-55393-2

Subcontract

Analysis Batch: O-42002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55393-1	MOANALUA WELLS	Total/NA	Drinking Water	625 PAH Physis LL (EAL) + TICs	O-42002_P
108477-B1	Method Blank	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-42002_P
108477-BS1	Lab Control Sample	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-42002_P
108477-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	625 PAH Physis LL (EAL) + TICs	O-42002_P

Analysis Batch: 23DSG037W

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55393-1	MOANALUA WELLS	Total/NA	Drinking Water	8015 LL DRO/MRO/JP5/J P8	
23DSG037WB	Method Blank	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23DSG037WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J5G037WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	
23J8G037WL	Lab Control Sample	Total/NA	WATER	8015 LL DRO/MRO/JP5/J P8	

Analysis Batch: 23VG39G12

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55393-1	MOANALUA WELLS	Total/NA	Drinking Water	8015 Gas (Purgeable) LL (EAL)	
380-55393-2	TB MOANALUA WELLS	Total/NA	Water	8015 Gas (Purgeable) LL (EAL)	
23VG39G12B	Method Blank	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	
23VG39G12L	Lab Control Sample	Total/NA	WATER	8015 Gas (Purgeable) LL (EAL)	

Prep Batch: O-42002_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
380-55393-1	MOANALUA WELLS	Total/NA	Drinking Water	EPA_625	
108477-B1	Method Blank	Total/NA	BlankMatrix	EPA_625	
108477-BS1	Lab Control Sample	Total/NA	BlankMatrix	EPA_625	
108477-BS2	Lab Control Sample Dup	Total/NA	BlankMatrix	EPA_625	

Lab Chronicle

Client: City & County of Honolulu
 Project/Site: RED-HILL

Job ID: 380-55393-2

Client Sample ID: MOANALUA WELLS

Lab Sample ID: 380-55393-1

Date Collected: 07/17/23 11:30

Matrix: Drinking Water

Date Received: 07/19/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	EPA_625		1	O-42002_P			07/21/23 00:00
Total/NA	Analysis	625 PAH Physis LL (EAL) + TICs		1	O-42002	YC		07/31/23 11:54
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39G12	SCerva		07/20/23 23:14
Total/NA	Analysis	8015 LL DRO/MRO/JP5/JP8		1	23DSG037W	SDees		07/28/23 23:14

Client Sample ID: TB MOANALUA WELLS

Lab Sample ID: 380-55393-2

Date Collected: 07/17/23 11:30

Matrix: Water

Date Received: 07/19/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015 Gas (Purgeable) LL (EAL)		1	23VG39G12	SCerva		07/20/23 23:50

Laboratory References:

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806



Method Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

Method	Method Description	Protocol	Laboratory
625	EPA 625 Base/Neutral and Acid Organics i	EPA	
8015	8015 - TPH DRO/ORO	EPA	
8015B	SW846 8015B Gasoline Range Organics	SW846	

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

= Physis Environmental Laboratories, 1904 Wright Circle, Anaheim, CA 92806



Sample Summary

Client: City & County of Honolulu
Project/Site: RED-HILL

Job ID: 380-55393-2

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
380-55393-1	MOANALUA WELLS	Drinking Water	07/17/23 11:30	07/19/23 10:00
380-55393-2	TB MOANALUA WELLS	Water	07/17/23 11:30	07/19/23 10:00

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



3051 Fujita Street
 Torrance, CA 90505
 Tel: (310)-618-8889

Date: 08-14-2023
 EMAX Batch No.: 23G184

Attn: Jackie Contreras

Eurofins Eaton Analytical
 750 Royal Oaks Dr., Suite 100
 Monrovia, CA 91016-3629

Subject: Laboratory Report
 Project: 380-55393

Enclosed is the Laboratory report for samples received on 07/20/23.
 The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
380-55393-1	G184-01	07/17/23	WATER	TPH GASOLINE TPH
380-55393-2	G184-02	07/17/23	WATER	TPH GASOLINE

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 CA002912022-24
 ANAB Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
 California ELAP Accredited Certificate Number 2672



ECN 23G184	Recipient JUCEYNE SOL'S - PMS	Date 07/20/23	Time 16:22
Airbill / Tracking Number		Type of Delivery <input type="checkbox"/> Fedex <input type="checkbox"/> UPS <input type="checkbox"/> GSO <input type="checkbox"/> Others <input checked="" type="checkbox"/> EMAX Courier <input type="checkbox"/> Client Delivery	

COG INSPECTION

Client Name Client PM/FC TdI # / Fax # Address Safety Issues (if any)

Sampling Name Counter Signature From Superfund Site High concentrations expected
 Sampling Date/Time Analysis Required Rad screening required
 Sample ID Preservative (if any) TAT Matrix

PACKAGING INSPECTION

Cooler Box Intact Damaged Other
 Custody Seal Bubble Pack Styrofoam
 Bubble Pack Sufficient

Condition Correction factor: 0.1
 Packaging factor: 0.1
 Temperatures (Cool, 56 °C but not frozen) -0.1
 Thermometer: A-S/N 221852708
 Cooler 6 °C Cooler 7 °C Cooler 8 °C
 Cooler 5.7/5.6 °C Cooler 2 °C Cooler 3 °C
 Cooler 9 °C Cooler 4 °C Cooler 5 °C
 Cooler 10 °C Cooler 1 °C

C - S/N _____ °C
 D - S/N _____ °C

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

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1	5/6	D1	SP5/JR8 not on label	R8
2	7/8	D22	2nd Date/Time read: 7/10/23 at 15:45	R1

pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. MS 7/25/23

NOTES/OBSERVATIONS:
 SAMPLE MATRIX IS DRINKING WATER? YES NO

LEGEND:

Code Description-Sample Management
 (D1) Analysis is not indicated in label
 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

REVIEWS:
 Manna
 Sample Labeling Errors
 Date 07/20/23
 Juceyne
 Sols-PMS
 Date 07/20/23

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) 2nd Date/Time on label is incorrect
 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 Informed client
 R9
 R10
 R11
 R12

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.

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-55393

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

SDG#: 23G184

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-55393

SDG : 23G184

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

A total of two(2) water samples were received on 07/20/23 to be analyzed for Total Petroleum Hydrocarbons by Purge and Trap in accordance with Method 5030B/8015B and project specific requirements.

Holding Time

Samples were analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form 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. VG39G12B - 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. VG39G12L/VG39G12C were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Gasoline was within MS QC limits in G182-01M/G182-01S. Refer to Matrix QC summary form for details.

Surrogate

Surrogate was 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.

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL
 Project : 380-55393
 Laboratory Sample ID : V639G12B
 Instrument ID : GCT039
 SDG NO. : 23G184

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Prep. Data FN	Notes
MBLK1W	V639G12B	1	NA	07/20/2317:48	07/20/2317:48	EG20005A	EG20004A	23VG39G12 Method Blank
LCS1W	V639G12L	1	NA	07/20/2318:24	07/20/2318:24	EG20006A	EG20004A	23VG39G12 Lab Control Sample (LCS)
LCD1W	V639G12C	1	NA	07/20/2319:00	07/20/2319:00	EG20007A	EG20004A	23VG39G12 LCS Duplicate
380-55393-1	G184-01	1	NA	07/20/2323:14	07/20/2323:14	EG20014A	EG20004A	23VG39G12 Field Sample
380-55393-2	G184-02	1	NA	07/20/2323:50	07/20/2323:50	EG20015A	EG20004A	23VG39G12 Field Sample

FN - Filename
 % Moist - Percent Moisture

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

SAMPLE RESULTS

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/17/23 11:30
Project : 380-55393	Date Received: 07/20/23
Batch No. : 23G184	Date Extracted: 07/20/23 23:14
Sample ID : 380-55393-1	Date Analyzed: 07/20/23 23:14
Lab Samp ID: G184-01	Dilution Factor: 1
Lab File ID: EG20014A	Matrix: WATER
Ext Btch ID: 23VG39G12	% Moisture: NA
Calib. Ref.: EG20004A	Instrument ID: 39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0316	0.0400	79	60-140

Notes:

Parameter H-C Range

Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml

Final Volume : 5ml

Prepared by : SCerva

Analyzed by : SCerva

METHOD 5030B/8015B
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	07/17/23 11:30
Project	: 380-55393	Date Received:	07/20/23
Batch No.	: 23G184	Date Extracted:	07/20/23 23:50
Sample ID	: 380-55393-2	Date Analyzed:	07/20/23 23:50
Lab Samp ID:	G184-02	Dilution Factor:	1
Lab File ID:	EG20015A	Matrix:	WATER
Ext Btch ID:	23VG39G12	% Moisture:	NA
Calib. Ref.:	EG20004A	Instrument ID:	39

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
GASOLINE	ND	0.020	0.010	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromofluorobenzene	0.0315	0.0400	79	60-140

Notes:

Parameter H-C Range
Gasoline C6-C10

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 5ml Final Volume : 5ml
Prepared by : SCerva Analyzed by : SCerva

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-55393
BATCH NO. : 23G184
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1		1
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: VG39G12B	VG39G12L	VG39G12C
LAB FILE ID	: EG20005A	EG20006A	EG20007A
DATE PREPARED	: 07/20/23 17:48	07/20/23 18:24	07/20/23 19:00
DATE ANALYZED	: 07/20/23 17:48	07/20/23 18:24	07/20/23 19:00
PREP BATCH	: 23VG39G12	23VG39G12	23VG39G12
CALIBRATION REF:	EG20004A	EG20004A	EG20004A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.441	88	0.500	0.461	92	4	60-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	SpikeAmt (mg/L)	LCDResult (mg/L)	LCDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0433	108	0.0400	0.0441	110	70-130

MB: Method Blank sample LCS: Lab Control Sample LCD: Lab Control Sample Duplicate

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-55350
BATCH NO. : 23G182
METHOD : 5030B/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-55350-1	380-55350-1MS	380-55350-1MSD
LAB SAMPLE ID	: G182-01	G182-01M	G182-01S
LAB FILE ID	: EG20008A	EG20009A	EG20010A
DATE PREPARED	: 07/20/23 19:36	07/20/23 20:13	07/20/23 20:49
DATE ANALYZED	: 07/20/23 19:36	07/20/23 20:13	07/20/23 20:49
PREP BATCH	: 23VG39G12	23VG39G12	23VG39G12
CALIBRATION REF:	EG20004A	EG20004A	EG20004A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Gasoline	ND	0.500	0.471	94	0.500	0.447	89	5	50-130	30

SURROGATE PARAMETER	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromofluorobenzene	0.0400	0.0435	109	0.0400	0.0427	107	60-140

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

380-55393

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

SDG#: 23G184

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-55393

SDG : 23G184

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 07/20/23 to be analyzed for Total Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form 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. DSG037WB - 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) LCS was analyzed. Percent recovery for Diesel was within LCS QC limits in DSG037WL. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. Diesel was within MS QC limits in 23G182-01M/23G182-01S. Refer to Matrix QC summary form for details.

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

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-55393

SDG : 23G184

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 07/20/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form 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. DSG037WB - 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) LCS was analyzed. Percent recovery for JP5 was within LCS QC limits in J5G037WL. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. JP5 was within MS QC limits in 23G182-01M/23G182-01S. Refer to Matrix QC summary form for details.

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

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

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 380-55393

SDG : 23G184

METHOD 3520C/8015B
PETROLEUM HYDROCARBONS BY EXTRACTION

One(1) water sample was received on 07/20/23 to be analyzed for Petroleum Hydrocarbons by Extraction in accordance with Method 3520C/8015B and project specific requirements.

Holding Time

The sample was analyzed within the prescribed holding time.

Calibration

Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried out on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details. MRL was analyzed as required by the project. Refer to MRL summary form 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. DSG037WB - 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) LCS was analyzed. Percent recovery for JP8 was within LCS QC limits in J8G037WL. Refer to LCS summary form for details.

Matrix QC Sample

Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one(1) set of MS/MSD was analyzed. JP8 was within MS QC limits in 23G183-01M/23G183-01S. Refer to Matrix QC summary form for details.

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

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

LAB CHRONICLE
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
 Project : 380-55393
 Laboratory Sample ID : DSG037WB
 Instrument ID : D5
 SDG NO. : 23G184

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
380-55393-1	DSG037WB	1	NA	07/28/2319:29	07/27/2312:30	LG28022A	LG28016A	23DSG037W	Method Blank
	DSG037ML	1	NA	07/28/2319:48	07/27/2312:30	LG28023A	LG28016A	23DSG037W	Lab Control Sample (LCS)
	G184-01	1	NA	07/28/2323:14	07/27/2312:30	LG28034A	LG28016A	23DSG037W	Field Sample

FN - Filename
 % Moist - Percent Moisture



LAB CHRONICLE
PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL
 Project : 380-55393
 SDG NO. : 23G184
 Instrument ID : D5

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
380-55393-1	DSG037MB	1	NA	07/28/2319:29	07/27/2312:30	LG28022A	LG28018A	23DSG037W	Method Blank
	J8G037ML	1	NA	07/28/2320:25	07/27/2312:30	LG28025A	LG28018A	23DSG037W	Lab Control Sample (LCS)
	G184-01	1	NA	07/28/2323:14	07/27/2312:30	LG28034A	LG28018A	23DSG037W	Field Sample

FN - Filename
 % Moist - Percent Moisture



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

SAMPLE RESULTS

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/17/23 11:30
Project : 380-55393	Date Received: 07/20/23
Batch No. : 23G184	Date Extracted: 07/27/23 12:30
Sample ID : 380-55393-1	Date Analyzed: 07/28/23 23:14
Lab Samp ID: 23G184-01	Dilution Factor: 1
Lab File ID: LG28034A	Matrix: WATER
Ext Btch ID: 23DSG037W.	% Moisture: NA
Calib. Ref.: LG28016A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)
Diesel	ND	0.028	0.014
Motor Oil	ND	0.056	0.028

SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.389	0.555	70	60-130
Hexacosane	0.121	0.139	87	60-130

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 900ml	Final Volume : 5ml
Prepared by : RGalan	Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	07/17/23 11:30
Project	: 380-55393	Date Received:	07/20/23
Batch No.	: 23G184	Date Extracted:	07/27/23 12:30
Sample ID	: 380-55393-1	Date Analyzed:	07/28/23 23:14
Lab Samp ID:	23G184-01	Dilution Factor:	1
Lab File ID:	LG28034A	Matrix:	WATER
Ext Btch ID:	23DSG037W	% Moisture:	NA
Calib. Ref.:	LG28017A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP5	ND	0.056	0.028	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.389	0.555	70	60-130
Hexacosane	0.121	0.139	87	60-130

Notes:

RL : Reporting Limit
 Parameter H-C Range
 JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 900ml Final Volume : 5ml
 Prepared by : RGalan Analyzed by : SDeeso

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/17/23 11:30
Project : 380-55393	Date Received: 07/20/23
Batch No. : 23G184	Date Extracted: 07/27/23 12:30
Sample ID : 380-55393-1	Date Analyzed: 07/28/23 23:14
Lab Samp ID: 23G184-01	Dilution Factor: 1
Lab File ID: LG28034A	Matrix: WATER
Ext Btch ID: 23DSG037W	% Moisture: NA
Calib. Ref.: LG28018A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP8	ND	0.056	0.028	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.389	0.555	70	60-130
Hexacosane	0.121	0.139	87	60-130

Notes:

RL : Reporting Limit
 Parameter H-C Range
 JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 900ml	Final Volume : 5ml
Prepared by : RGalan	Analyzed by : SDeeso

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

QC SUMMARIES

METHOD 3520C/8015B
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/27/23 12:30
Project : 380-55393	Date Received: 07/27/23
Batch No. : 23G184	Date Extracted: 07/27/23 12:30
Sample ID : MBLK1W	Date Analyzed: 07/28/23 19:29
Lab Samp ID: DSG037WB	Dilution Factor: 1
Lab File ID: LG28022A	Matrix: WATER
Ext Btch ID: 23DSG037W	% Moisture: NA
Calib. Ref.: LG28016A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)		
Diesel	ND	0.025	0.012		
Motor Oil	ND	0.050	0.025		
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT	
Bromobenzene	0.330	0.500	66	60-130	
Hexacosane	0.108	0.125	87	60-130	

Notes:

Parameter	H-C Range
Diesel	C10-C24
Motor Oil	C24-C36

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml	Final Volume : 5ml
Prepared by : RGalan	Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-55393
BATCH NO. : 23G184
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSG037WB DSG037WL
LAB FILE ID : LG28022A LG28023A
DATE PREPARED : 07/27/23 12:30 07/27/23 12:30
DATE ANALYZED : 07/28/23 19:29 07/28/23 19:48
PREP BATCH : 23DSG037W 23DSG037W
CALIBRATION REF: LG28016A LG28016A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QLLimit (%)
Diesel	ND	2.50	2.13	85	50-130

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QLLimit (%)
Bromobenzene	0.500	0.328	66	60-130
Hexacosane	0.125	0.109	87	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-55350
BATCH NO. : 23G182
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-55350-1	380-55350-1MS	380-55350-1MSD
LAB SAMPLE ID	: 23G182-01	23G182-01M	23G182-01S
LAB FILE ID	: LG28026A	LG28027A	LG28028A
DATE PREPARED	: 07/27/23 12:30	07/27/23 12:30	07/27/23 12:30
DATE ANALYZED	: 07/28/23 20:44	07/28/23 21:03	07/28/23 21:22
PREP BATCH	: 23DSG037W	23DSG037W	23DSG037W
CALIBRATION REF:	LG28016A	LG28016A	LG28016A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Diesel	ND	2.90	2.90	100	2.90	2.80	97	4	50-130	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.580	0.442	76	0.580	0.454	78	60-130
Hexacosane	0.145	0.147	101	0.145	0.140	97	60-130

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	07/27/23 12:30
Project	: 380-55393	Date Received:	07/27/23
Batch No.	: 23G184	Date Extracted:	07/27/23 12:30
Sample ID	: MBLK1W	Date Analyzed:	07/28/23 19:29
Lab Samp ID:	DSG037WB	Dilution Factor:	1
Lab File ID:	LG28022A	Matrix:	WATER
Ext Btch ID:	23DSG037W	% Moisture:	NA
Calib. Ref.:	LG28017A	Instrument ID:	D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP5	ND	0.050	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.330	0.500	66	60-130
Hexacosane	0.108	0.125	87	60-130

Notes:

RL : Reporting Limit

Parameter H-C Range

JP5 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml

Final Volume : 5ml

Prepared by : RGalán

Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-55393
BATCH NO. : 23G184
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSG037WB J5G037WL
LAB FILE ID : LG28022A LG28024A
DATE PREPARED : 07/27/23 12:30 07/27/23 12:30
DATE ANALYZED : 07/28/23 19:29 07/28/23 20:07
PREP BATCH : 23DSG037W 23DSG037W
CALIBRATION REF: LG28017A LG28017A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QLLimit (%)
JP5	ND	2.50	1.82	73	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QLLimit (%)
Bromobenzene	0.500	0.371	74	60-130
Hexacosane	0.125	0.109	87	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-55350
BATCH NO. : 23G182
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-55350-1	380-55350-1MS	380-55350-1MSD
LAB SAMPLE ID	: 23G182-01	23G182-01M	23G182-01S
LAB FILE ID	: LG28026A	LG28029A	LG28030A
DATE PREPARED	: 07/27/23 12:30	07/27/23 12:30	07/27/23 12:30
DATE ANALYZED	: 07/28/23 20:44	07/28/23 21:40	07/28/23 21:59
PREP BATCH	: 23DSG037W	23DSG037W	23DSG037W
CALIBRATION REF:	LG28017A	LG28017A	LG28017A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP5	ND	2.78	2.40	86	2.88	2.21	77	8	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.555	0.456	82	0.575	0.406	71	60-130
Hexacosane	0.139	0.127	92	0.144	0.128	89	60-130

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

METHOD 3520C/8015B
 PETROLEUM HYDROCARBONS BY EXTRACTION

Client : EUROFINS EATON ANALYTICAL	Date Collected: 07/27/23 12:30
Project : 380-55393	Date Received: 07/27/23
Batch No. : 23G184	Date Extracted: 07/27/23 12:30
Sample ID : MBLK1W	Date Analyzed: 07/28/23 19:29
Lab Samp ID: DSG037WB	Dilution Factor: 1
Lab File ID: LG28022A	Matrix: WATER
Ext Btch ID: 23DSG037W	% Moisture: NA
Calib. Ref.: LG28018A	Instrument ID: D5

PARAMETERS	RESULTS (mg/L)	RL (mg/L)	MDL (mg/L)	
JP8	ND	0.050	0.025	
SURROGATE PARAMETERS	RESULT	SPK_AMT	%RECOVERY	QC LIMIT
Bromobenzene	0.330	0.500	66	60-130
Hexacosane	0.108	0.125	87	60-130

Notes:

RL : Reporting Limit
 Parameter H-C Range
 JP8 C8-C18

Reported ND at RL quantitated per pattern recognition.

Detection limits are reported relative to sample result significant figures.

Sample Amount : 1000ml Final Volume : 5ml
 Prepared by : RGalan Analyzed by : SDeeso

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-55393
BATCH NO. : 23G184
METHOD : 3520C/8015B

MATRIX : WATER % MOISTURE:NA
DILUTION FACTOR: 1 1
SAMPLE ID : MBLK1W LCS1W
LAB SAMPLE ID : DSG037WB J8G037WL
LAB FILE ID : LG28022A LG28025A
DATE PREPARED : 07/27/23 12:30 07/27/23 12:30
DATE ANALYZED : 07/28/23 19:29 07/28/23 20:25
PREP BATCH : 23DSG037W 23DSG037W
CALIBRATION REF: LG28018A LG28018A

ACCESSION:

PARAMETERS	MBResult (mg/L)	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
JP8	ND	2.50	2.70	108	30-160

SURROGATE PARAMETERS	SpikeAmt (mg/L)	LCSResult (mg/L)	LCSRec (%)	QCLimit (%)
Bromobenzene	0.500	0.471	94	60-130
Hexacosane	0.125	0.108	86	60-130

MB: Method Blank sample LCS: Lab Control Sample

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : EUROFINS EATON ANALYTICAL
PROJECT : 380-55362
BATCH NO. : 23G183
METHOD : 3520C/8015B

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR:	1	1	1
SAMPLE ID	: 380-55362-1	380-55362-1MS	380-55362-1MSD
LAB SAMPLE ID	: 23G183-01	23G183-01M	23G183-01S
LAB FILE ID	: LG28031A	LG28032A	LG28033A
DATE PREPARED	: 07/27/23 12:30	07/27/23 12:30	07/27/23 12:30
DATE ANALYZED	: 07/28/23 22:18	07/28/23 22:36	07/28/23 22:55
PREP BATCH	: 23DSG037W	23DSG037W	23DSG037W
CALIBRATION REF:	LG28018A	LG28018A	LG28018A

ACCESSION:

PARAMETERS	PSResult (mg/L)	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
JP8	ND	2.85	3.01	106	2.85	3.29	115	9	30-160	30

SURROGATE PARAMETERS	SpikeAmt (mg/L)	MSResult (mg/L)	MSRec (%)	SpikeAmt (mg/L)	MSDResult (mg/L)	MSDRec (%)	QCLimit (%)
Bromobenzene	0.570	0.547	96	0.570	0.575	101	60-130
Hexacosane	0.142	0.122	86	0.142	0.130	91	60-130

PS: Parent Sample MS: Matrix Spike MSD: Matrix Spike Duplicate

August 02, 2023

Rachelle Arada
 Eurofins Eaton Analytical
 750 Royal Oaks Drive
 Suite 100
 Monrovia, CA 91016-

Project Name: RED-HILL Project # 38001111 Job # 380-55393-1
 Physis Project ID: 1407003-419

Dear Rachelle,

Enclosed are the analytical results for the sample submitted to PHYSIS Environmental Laboratories, Inc. (PHYSIS) on 7/20/2023. A total of 1 sample was received for analysis in accordance with the attached chain of custody (COC). Per the COC, the sample was analyzed for:

Organics
Polynuclear Aromatic Hydrocarbons by EPA 625.1
Disalicylidenepropanediamine by EPA 625.1
Dibenzo [a,l] Pyrene w/ PAHs by EPA 625.1

Analytical results in this report apply only to samples submitted to PHYSIS in accordance with the COC and are intended to be considered in their entirety.

Please feel free to contact me at any time with any questions. PHYSIS appreciates the opportunity to provide you with our analytical and support services.

Regards,

Misty Mercier
 714 602-5320
 Extension 202
 mistymercier@physislabs.com



PROJECT SAMPLE LIST

Eurofins Eaton Analytical

PHYSIS Project ID: 1407003-419

RED-HILL Project # 38001111 Job # 380-55393-1

Total Samples: 1

PHYSIS ID	Sample ID	Description	Date	Time	Matrix	Sample Type
108478	MOANALUA WELLS	380-55393-1	7/17/2023	11:30	Samplewater	Not Specified

ABBREVIATIONS and ACRONYMS

QM	Quality Manual
QA	Quality Assurance
QC	Quality Control
MDL	method detection limit
RL	reporting limit
R1	project sample
R2	project sample replicate
MS1	matrix spike
MS2	matrix spike replicate
B1	procedural blank
B2	procedural blank replicate
BS1	blank spike
BS2	blank spike replicate
LCS1	laboratory control spike
LCS2	laboratory control spike replicate
LCM1	laboratory control material
LCM2	laboratory control material replicate
CRM1	certified reference material
CRM2	certified reference material replicate
RPD	relative percent difference
LMW	low molecular weight
HMW	high molecular weight

QUALITY ASSURANCE SUMMARY

LABORATORY BATCH: Physis' QM defines a laboratory batch as a group of 20 or fewer project samples of similar matrix, processed together under the same conditions and with the same reagents. QC samples are associated with each batch and were used to assess the validity of the sample analyses.

PROCEDURAL BLANK: Laboratory contamination introduced during method use is assessed through the preparation and analysis of procedural blanks is provided at a minimum frequency of one per batch.

ACCURACY: Accuracy of analytical measurements is the degree of closeness based on percent recovery calculations between measured values and the actual or true value and includes a combination of reproducibility error and systematic bias due to sampling and analytical operations. Accuracy of the project data was indicated by analysis of MS, BS, LCS, LCM, CRM, and/or surrogate spikes on a minimum frequency of one per batch. Physis' QM requires that 95% of the target compounds greater than 10 times the MDL be within the specified acceptance limits.

PRECISION: Precision is the agreement among a set of replicate measurements without assumption of knowledge of the true value and is based on RPD calculations between repeated values. Precision of the project data was determined by analysis of replicate MS₁/MS₂, BS₁/BS₂, LCS₁/LCS₂, LCM₁/LCM₂, CRM₁/CRM₂, surrogate spikes and/or replicate project sample analysis (R₁/R₂) on a minimum frequency of one per batch. Physis' QM requires that for 95% of the compounds greater than 10 times the MDL, the percent RPD should be within the specified acceptance range.

BLANK SPIKES: BS is the introduction of a known concentration of analyte into the procedural blank. BS demonstrates performance of the preparation and analytical methods on a clean matrix void of potential matrix related interferences. The BS is performed in laboratory deionized water, making these recoveries a better indicator of the efficiency of the laboratory method per se.

MATRIX SPIKES: MS is the introduction of a known concentration of analyte into a sample. MS samples demonstrate the effect a particular project sample matrix has on the accuracy of a measurement. Individually, MS samples also indicate the bias of analytical measurements due to chemical interferences inherent in the in the specific project sample spiked. Intrinsic target analyte concentration in the specific project sample can also significantly impact MS recovery.

CERTIFIED REFERENCE MATERIALS: CRMs are materials of various matrices for which analytical information has been determined and certified by a recognized authority. These are used to provide a quantitative assessment of the accuracy of an analytical method. CRMs provide evidence that the laboratory preparation and analysis produces results that are comparable to those obtained by an independent organization.

LABORATORY CONTROL MATERIAL: LCM is provided because a suitable natural seawater CRM is not available and can be used to indicate accuracy of the method. Physis' internal LCM is seawater collected at ~800 meters in the Southern California San Pedro Basin and can be used as a reference for background concentrations in clean, natural seawater for comparison to project samples.

LABORATORY CONTROL SPIKES: LCS is the introduction of a known concentration of analyte into Physis' LCM. LCS samples were employed to assess the effect the seawater matrix has on the accuracy of a measurement. LCS also indicate the bias of this method due to chemical interferences inherent in the in the seawater matrix. Intrinsic LCM concentration can also significantly impact LCS recovery.

SURROGATES: A surrogate is a pure analyte unlikely to be found in any project sample, behaves similarly to

the target analyte and most often used with organic analytical procedures. Surrogates are added in known concentration to all samples and are measured to indicate overall efficiency of the method including processing and analyses.

HOLDING TIME: Method recommended holding times are the length of time a project sample can be stored under specific conditions after collection and prior to analysis without significantly affecting the analyte's concentration. Holding times can be extended if preservation techniques are employed to reduce biodegradation, volatilization, oxidation, sorption, precipitation, and other physical and chemical processes.

SAMPLE STORAGE/RETENTION: In order to maintain chemical integrity prior to analysis, all samples submitted to Physis are refrigerated (liquids) or frozen (solids) upon receipt unless otherwise recommended by applicable methods. Solid samples are retained for 1 year from collection while liquid samples are retained until method recommended holding times elapse.

TOTAL/DISSOLVED FRACTION: In some instances, the results for the dissolved fraction may be higher than the total fraction for a particular analyte (e.g. trace metals). This is typically caused by the analytical variation for each result and indicates that the target analyte is primarily in the dissolved phase, within the sample.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

PHYSIS QUALIFIER CODES

CODE	DEFINITION
#	see Case Narrative
ND	analyte not detected at or above the MDL
B	analyte was detected in the procedural blank greater than 10 times the MDL
E	analyte concentration exceeds the upper limit of the linear calibration range, reported value is estimated
H	sample received and/or analyzed past the recommended holding time
J	analyte was detected at a concentration below the RL and above the MDL, reported value is estimated
N	insufficient sample, analysis could not be performed
M	analyte was outside the specified accuracy and/or precision acceptance limits due to matrix interference. The associated B/BS were within limits, therefore the sample data was reported without further clarification
SH	analyte concentration in the project sample exceeded the spike concentration, therefore accuracy and/or precision acceptance limits do not apply
SL	analyte results were lower than 10 times the MDL, therefore accuracy and/or precision acceptance limits do not apply
NH	project sample was heterogeneous and sample homogeneity could not be readily achieved using routine laboratory practices, therefore accuracy and/or precision acceptance limits do not apply
Q	analyte was outside the specified QAPP acceptance limits for precision and/or accuracy but within Physis derived acceptance limits, therefore the sample data was reported without further clarification
R	Physis' QM allows for 5% of the target compounds greater than 10 times the MDL to be outside the specified acceptance limits for precision and/or accuracy. This is often due to random error and does not indicate any significant problems with the analysis of these project samples

CASE NARRATIVE

QUALIFIER NOTES

In addition to the use of analyte specific Physis Qualifier Codes where applicable, the following were also noted.

ND

MDL is listed due to report format restrictions; it is not used in reporting. Analytical results reported are ND at the RL.

BIANALYTICALS

REPORT

TERRA AURA
ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Base/Neutral Extractable Compounds

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 108478-R1	MOANALUA WELLS	380-55393-1	Matrix: Samplewater				Sampled:	17-Jul-23 11:30		Received:	20-Jul-23
Disalicylidenepranediamine	EPA 625.1	µg/L	ND	1	0.05	0.1	Total		O-42002	21-Jul-23	31-Jul-23



Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Sample ID: 108478-R1	MOANALUA WELLS 380-55393-1	Matrix: Samplewater					Sampled:	17-Jul-23 11:30		Received:	20-Jul-23
(d10-Acenaphthene)	EPA 625.1	% Recovery	66	1			Total		O-42002	21-Jul-23	31-Jul-23
(d10-Phenanthrene)	EPA 625.1	% Recovery	102	1			Total		O-42002	21-Jul-23	31-Jul-23
(d12-Chrysene)	EPA 625.1	% Recovery	110	1			Total		O-42002	21-Jul-23	31-Jul-23
(d12-Perylene)	EPA 625.1	% Recovery	91	1			Total		O-42002	21-Jul-23	31-Jul-23
(d8-Naphthalene)	EPA 625.1	% Recovery	70	1			Total		O-42002	21-Jul-23	31-Jul-23
1-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
1-Methylphenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
2,3,5-Trimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
2,6-Dimethylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
2-Methylnaphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Acenaphthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Acenaphthylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Benz[a]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Benzo[a]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Benzo[b]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Benzo[e]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Benzo[g,h,i]perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Benzo[k]fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Biphenyl	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Chrysene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
D benz[a,h]anthracene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
D benzo[a,l]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
D benzothiophene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23

Polynuclear Aromatic Hydrocarbons

ANALYTE	Method	Units	RESULT	DF	MDL	RL	Fraction	QA CODE	Batch ID	Date Processed	Date Analyzed
Fluoranthene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Fluorene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Indeno[1,2,3-cd]pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Naphthalene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Perylene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Phenanthrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23
Pyrene	EPA 625.1	µg/L	ND	1	0.001	0.005	Total		O-42002	21-Jul-23	31-Jul-23



QUALITY CONTROL REPORT

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Base/Neutral Extractable Compounds

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODEc
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Sample ID: 108477-B1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-42002			Prepared: 21-Jul-23		Analyzed: 31-Jul-23			
Disalicylidenepropanediamin	Total	ND	1	0.05	0.1	µg/L							
Sample ID: 108477-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-42002			Prepared: 21-Jul-23		Analyzed: 31-Jul-23			
Disalicylidenepropanediamin	Total	20.2	1	0.05	0.1	µg/L	25	0	81	50 - 150%	PASS		
Sample ID: 108477-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:			
		Method: EPA 625.1			Batch ID: O-42002			Prepared: 21-Jul-23		Analyzed: 31-Jul-23			
Disalicylidenepropanediamin	Total	16.8	1	0.05	0.1	µg/L	25	0	67	50 - 150%	PASS	19	30 PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY	PRECISION	QA CODEc
							LEVEL	RESULT	% LIMITS	% LIMITS	
Sample ID: 108477-B1		QAQC Procedural Blank			Matrix: BlankMatrix		Sampled:		Received:		
	Method: EPA 625.1					Batch ID: O-42002	Prepared: 21-Jul-23	Analyzed: 31-Jul-23			
(d10-Acenaphthene)	Total	81	1			% Recovery	100	81	27 - 133%	PASS	
(d10-Phenanthrene)	Total	114	1			% Recovery	100	114	43 - 129%	PASS	
(d12-Chrysene)	Total	114	1			% Recovery	100	114	52 - 144%	PASS	
(d12-Perylene)	Total	97	1			% Recovery	100	97	36 - 161%	PASS	
(d8-Naphthalene)	Total	88	1			% Recovery	100	88	25 - 125%	PASS	
1-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
1-Methylphenanthrene	Total	ND	1	0.001	0.005	µg/L					
2,3,5-Trimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2,6-Dimethylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
2-Methylnaphthalene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthene	Total	ND	1	0.001	0.005	µg/L					
Acenaphthylene	Total	ND	1	0.001	0.005	µg/L					
Anthracene	Total	ND	1	0.001	0.005	µg/L					
Benz[a]anthracene	Total	ND	1	0.001	0.005	µg/L					
Benzo[a]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[b]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Benzo[e]pyrene	Total	ND	1	0.001	0.005	µg/L					
Benzo[g,h,i]perylene	Total	ND	1	0.001	0.005	µg/L					
Benzo[k]fluoranthene	Total	ND	1	0.001	0.005	µg/L					
Biphenyl	Total	ND	1	0.001	0.005	µg/L					
Chrysene	Total	ND	1	0.001	0.005	µg/L					
Dibenz[a,h]anthracene	Total	ND	1	0.001	0.005	µg/L					
Dibenzo[a,l]pyrene	Total	ND	1	0.001	0.005	µg/L					
Dibenzothiophene	Total	ND	1	0.001	0.005	µg/L					



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	ND	1	0.001	0.005	µg/L							
Fluorene	Total	ND	1	0.001	0.005	µg/L							
Indeno[1,2,3-cd]pyrene	Total	ND	1	0.001	0.005	µg/L							
Naphthalene	Total	ND	1	0.001	0.005	µg/L							
Perylene	Total	ND	1	0.001	0.005	µg/L							
Phenanthrene	Total	ND	1	0.001	0.005	µg/L							
Pyrene	Total	ND	1	0.001	0.005	µg/L							



Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION	QA CODE
							LEVEL	RESULT	%	LIMITS	%	LIMITS
Sample ID: 108477-BS1		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:		Received:		
Method: EPA 625.1		Batch ID: O-42002			Prepared: 21-Jul-23		Analyzed: 31-Jul-23					
(d10-Acenaphthene)	Total	62	1			% Recovery	100	0	62	27 - 133%	PASS	
(d10-Phenanthrene)	Total	88	1			% Recovery	100	0	88	43 - 129%	PASS	
(d12-Chrysene)	Total	108	1			% Recovery	100	0	108	52 - 144%	PASS	
(d12-Perylene)	Total	87	1			% Recovery	100	0	87	36 - 161%	PASS	
(d8-Naphthalene)	Total	57	1			% Recovery	100	0	57	25 - 125%	PASS	
1-Methylnaphthalene	Total	0.352	1	0.001	0.005	µg/L	0.5	0	70	31 - 128%	PASS	
1-Methylphenanthrene	Total	0.521	1	0.001	0.005	µg/L	0.5	0	104	66 - 127%	PASS	
2,3,5-Trimethylnaphthalene	Total	0.466	1	0.001	0.005	µg/L	0.5	0	93	55 - 122%	PASS	
2,6-Dimethylnaphthalene	Total	0.404	1	0.001	0.005	µg/L	0.5	0	81	48 - 120%	PASS	
2-Methylnaphthalene	Total	0.389	1	0.001	0.005	µg/L	0.5	0	78	47 - 130%	PASS	
Acenaphthene	Total	0.384	1	0.001	0.005	µg/L	0.5	0	77	53 - 131%	PASS	
Acenaphthylene	Total	0.451	1	0.001	0.005	µg/L	0.5	0	90	43 - 140%	PASS	
Anthracene	Total	0.455	1	0.001	0.005	µg/L	0.5	0	91	58 - 135%	PASS	
Benz[a]anthracene	Total	0.532	1	0.001	0.005	µg/L	0.5	0	106	55 - 145%	PASS	
Benzo[a]pyrene	Total	0.482	1	0.001	0.005	µg/L	0.5	0	96	51 - 143%	PASS	
Benzo[b]fluoranthene	Total	0.539	1	0.001	0.005	µg/L	0.5	0	108	46 - 165%	PASS	
Benzo[e]pyrene	Total	0.491	1	0.001	0.005	µg/L	0.5	0	98	42 - 152%	PASS	
Benzo[g,h,i]perylene	Total	0.5	1	0.001	0.005	µg/L	0.5	0	100	63 - 133%	PASS	
Benzo[k]fluoranthene	Total	0.524	1	0.001	0.005	µg/L	0.5	0	105	56 - 145%	PASS	
Biphenyl	Total	0.483	1	0.001	0.005	µg/L	0.5	0	97	56 - 119%	PASS	
Chrysene	Total	0.536	1	0.001	0.005	µg/L	0.5	0	107	56 - 141%	PASS	
Dibenz[a,h]anthracene	Total	0.48	1	0.001	0.005	µg/L	0.5	0	96	55 - 150%	PASS	
Dibenzo[a,l]pyrene	Total	0.352	1	0.001	0.005	µg/L	0.5	0	70	50 - 150%	PASS	
Dibenzothiophene	Total	0.499	1	0.001	0.005	µg/L	0.5	0	100	46 - 126%	PASS	

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c
							LEVEL	RESULT	%	LIMITS	%	LIMITS	
Fluoranthene	Total	0.61	1	0.001	0.005	µg/L	0.5	0	122	60 - 146%	PASS		
Fluorene	Total	0.442	1	0.001	0.005	µg/L	0.5	0	88	58 - 131%	PASS		
Indeno[1,2,3-cd]pyrene	Total	0.464	1	0.001	0.005	µg/L	0.5	0	93	50 - 151%	PASS		
Naphthalene	Total	0.345	1	0.001	0.005	µg/L	0.5	0	69	41 - 126%	PASS		
Perylene	Total	0.446	1	0.001	0.005	µg/L	0.5	0	89	48 - 141%	PASS		
Phenanthrene	Total	0.493	1	0.001	0.005	µg/L	0.5	0	99	67 - 127%	PASS		
Pyrene	Total	0.576	1	0.001	0.005	µg/L	0.5	0	115	54 - 156%	PASS		

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c		
							LEVEL	RESULT	%	LIMITS	%	LIMITS			
Sample ID: 108477-BS2		QAQC Procedural Blank			Matrix: BlankMatrix			Sampled:			Received:				
		Method: EPA 625.1			Batch ID: O-42002			Prepared: 21-Jul-23			Analyzed: 31-Jul-23				
(d10-Acenaphthene)	Total	66	1				% Recovery	100	0	66	27 - 133%	PASS	6	30	PASS
(d10-Phenanthrene)	Total	95	1				% Recovery	100	0	95	43 - 129%	PASS	8	30	PASS
(d12-Chrysene)	Total	106	1				% Recovery	100	0	106	52 - 144%	PASS	2	30	PASS
(d12-Perylene)	Total	90	1				% Recovery	100	0	90	36 - 161%	PASS	3	30	PASS
(d8-Naphthalene)	Total	64	1				% Recovery	100	0	64	25 - 125%	PASS	12	30	PASS
1-Methylnaphthalene	Total	0.373	1	0.001	0.005	µg/L		0.5	0	75	31 - 128%	PASS	7	30	PASS
1-Methylphenanthrene	Total	0.556	1	0.001	0.005	µg/L		0.5	0	111	66 - 127%	PASS	7	30	PASS
2,3,5-Trimethylnaphthalene	Total	0.496	1	0.001	0.005	µg/L		0.5	0	99	55 - 122%	PASS	6	30	PASS
2,6-Dimethylnaphthalene	Total	0.423	1	0.001	0.005	µg/L		0.5	0	85	48 - 120%	PASS	5	30	PASS
2-Methylnaphthalene	Total	0.412	1	0.001	0.005	µg/L		0.5	0	82	47 - 130%	PASS	5	30	PASS
Acenaphthene	Total	0.409	1	0.001	0.005	µg/L		0.5	0	82	53 - 131%	PASS	6	30	PASS
Acenaphthylene	Total	0.479	1	0.001	0.005	µg/L		0.5	0	96	43 - 140%	PASS	6	30	PASS
Anthracene	Total	0.465	1	0.001	0.005	µg/L		0.5	0	93	58 - 135%	PASS	2	30	PASS
Benz[a]anthracene	Total	0.549	1	0.001	0.005	µg/L		0.5	0	110	55 - 145%	PASS	4	30	PASS
Benzo[a]pyrene	Total	0.486	1	0.001	0.005	µg/L		0.5	0	97	51 - 143%	PASS	1	30	PASS
Benzo[b]fluoranthene	Total	0.541	1	0.001	0.005	µg/L		0.5	0	108	46 - 165%	PASS	0	30	PASS
Benzo[e]pyrene	Total	0.472	1	0.001	0.005	µg/L		0.5	0	94	42 - 152%	PASS	4	30	PASS
Benzo[g,h,i]perylene	Total	0.509	1	0.001	0.005	µg/L		0.5	0	102	63 - 133%	PASS	2	30	PASS
Benzo[k]fluoranthene	Total	0.522	1	0.001	0.005	µg/L		0.5	0	104	56 - 145%	PASS	1	30	PASS
Biphenyl	Total	0.512	1	0.001	0.005	µg/L		0.5	0	102	56 - 119%	PASS	5	30	PASS
Chrysene	Total	0.528	1	0.001	0.005	µg/L		0.5	0	106	56 - 141%	PASS	1	30	PASS
Dibenz[a,h]anthracene	Total	0.471	1	0.001	0.005	µg/L		0.5	0	94	55 - 150%	PASS	2	30	PASS
Dibenzo[a,l]pyrene	Total	0.373	1	0.001	0.005	µg/L		0.5	0	75	50 - 150%	PASS	7	30	PASS
Dibenzothiophene	Total	0.538	1	0.001	0.005	µg/L		0.5	0	108	46 - 126%	PASS	8	30	PASS

Polynuclear Aromatic Hydrocarbons

QUALITY CONTROL REPORT

ANALYTE	FRACTION	RESULT	DF	MDL	RL	UNITS	SPIKE	SOURCE	ACCURACY		PRECISION		QA CODE _c	
							LEVEL	RESULT	%	LIMITS	%	LIMITS		
Fluoranthene	Total	0.624	1	0.001	0.005	µg/L	0.5	0	125	60 - 146%	PASS	2	30	PASS
Fluorene	Total	0.471	1	0.001	0.005	µg/L	0.5	0	94	58 - 131%	PASS	7	30	PASS
Indeno[1,2,3-cd]pyrene	Total	0.458	1	0.001	0.005	µg/L	0.5	0	92	50 - 151%	PASS	1	30	PASS
Naphthalene	Total	0.375	1	0.001	0.005	µg/L	0.5	0	75	41 - 126%	PASS	8	30	PASS
Perylene	Total	0.449	1	0.001	0.005	µg/L	0.5	0	90	48 - 141%	PASS	1	30	PASS
Phenanthrene	Total	0.484	1	0.001	0.005	µg/L	0.5	0	97	67 - 127%	PASS	2	30	PASS
Pyrene	Total	0.573	1	0.001	0.005	µg/L	0.5	0	115	54 - 156%	PASS	0	30	PASS

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

PHYSICS

TENTATIVELY IDENTIFIED COMPOUNDS

ENVIRONMENTAL LABORATORIES, INC.

Innovative Solutions for Nature

Sample ID: 108478

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.8219	1.3247	1111	Anthracene-D10	1517-22-2	88
10.1796	31.4347	26366	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	93
10.1219	21.3490	17907	1-Hexene, 4,5-dimethyl-	16106-59-5	91
10.2306	4.5014	3776	Octane, 3-methyl-6-methylene-	74630-07-2	87
10.0593	3.5175	2950	Sulfurous acid, di(cyclohexylmethyl) ester	1010309-22-7	89
10.3850	0.5873	493	Furan, 2,5-dihydro-2,5-dimethyl-	59242-27-2	83
10.3850	0.5829	489	9-Oxabicyclo[6.1.0]nonane	286-62-4	84
16.1829	0.5404	453	1-Ethynylcyclododecanol	1000484-40-4	81
11.2278	0.2695	226	2-Isopropenyl-5-methylhex-4-enal	75697-98-2	81

Concentration estimated using the response for Anthracene-d10

Sample ID: Lab Blank B1_42002

Retention Time	Area (% of total)	Concentration (ng/L)	Library/ID	Cas Number	Match Quality (%)
34.8252	0.7753	1111	Anthracene-D10-	1719-06-8	90
10.1805	32.7253	46897	Cyclohexane, 1-methyl-2-propyl-	4291-79-6	94
10.2311	4.5384	6504	Octane, 3-methyl-6-methylene-	74630-07-2	87
10.0591	3.5477	5084	Sulfurous acid, di(cyclohexylmethyl) ester	1010309-22-7	89
16.1897	0.5736	822	1-Ethynylcyclododecanol	1000484-40-4	86
10.3852	0.4561	654	Cyclopentanone, 3-(3-hydroxy-1-propenyl)-	74473-08-8	87
11.2302	0.2970	426	2-Isopropenyl-5-methylhex-4-enal	75697-98-2	87
16.0114	0.2393	343	2-Dodecen-1-yl(-)succinic anhydride	19780-11-1	81
45.2984	0.1544	221	1,4-Benzenedicarboxylic acid, bis(2-methylpropyl) ester	18699-48-4	87
60.9755	0.1318	189	Mono(2-ethylhexyl) phthalate	4376-20-9	81

Concentration estimated using the response for Anthracene-d10

PERFORMANCE CHAIN OF CUSTODY

TERRA ENVIRONMENTAL LABORATORIES, INC. AURA

Innovative Solutions for Nature

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



Project Iteration ID: 1407003-419
 Client Name: Eurofins Eaton Analytical
 Project Name: RED-HILL Project # 38001111 Job # 380-55393-1
 COC Page Number: 2 of 2
 Bottle Label Color: NA

Sample Receipt Summary

Receiving Info

- Initials Received By: RGH
- Date Received: 7/20/23
- Time Received: 1125
- Client Name: Eurofins
- Courier Information: (Please circle)
 - Client
 - UPS
 - Area Fast
 - DRS
 - FedEx
 - GSO/GLS
 - Ontrac
 - PAMS
 - PHYSIS Driver:
 - Start Time: _____
 - End Time: _____
 - Total Mileage: _____
 - Number of Pickups: _____
- Container Information: (Please put the # of containers or circle none)
 - Cooler
 - Styrofoam Cooler
 - Boxes
 - None
 - Carboy(s)
 - Carboy Trash Can(s)
 - Carboy Cap(s)
 - Other _____
- What type of ice was used: (Please circle any that apply)
 - Wet Ice
 - Blue Ice
 - Dry Ice
 - Water
 - None
- Randomly Selected Samples Temperature (°C): 0, 8 Used I/R Thermometer # 1-2

Inspection Info

- Initials Inspected By: RGH

Sample Integrity Upon Receipt:

- COC(s) included and completely filled out..... Yes / No
- All sample containers arrived intact..... Yes / No
- All samples listed on COC(s) are present..... Yes / No
- Information on containers consistent with information on COC(s)..... Yes / No
- Correct containers and volume for all analyses indicated..... Yes / No
- All samples received within method holding time..... Yes / No
- Correct preservation used for all analyses indicated..... Yes / No
- Name of sampler included on COC(s)..... Yes / No

Notes:

Login Sample Receipt Checklist

Client: City & County of Honolulu

Job Number: 380-55393-2

Login Number: 55393
List Number: 1
Creator: Elyas, Matthew

List Source: Eurofins Eaton Analytical Pomona

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	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	
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	
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	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	

