

Farrington Highway Replacement of Maipalaoa Bridge

CWB-NOI Form G NPDES Application

Item G.9.i: Water Quality Report

CLIENT: SSFM International
501 Sumner Street, Suite 620
Honolulu HI 96817
ATTENTION: Robyn Ito ☎531-1308 fax:521-7348

FILE No.: 1201
REPORT DATE: 04/15/09
PAGE: 1 of 1

AECOS REPORT OF ANALYTICAL RESULTS**SAMPLE TYPE:** Brackish water (estuarine)**AECOS LOG No.:** 25112**DATE SAMPLED:** 03/23/09**DATE RECEIVED:** 03/23/09**Sampled By:** S. Burr, K. Laing

SAMPLE ID ⇄	Upstream	Bridge	Reef	Method / Detection	Analysis Date
ANALYTE ⇓	1015	1045	1105	Limit	Analyst ID
Temperature (°C)	27.0	24.9	24.7	SM2550B (1998) / 0.1	Field (sb, kl)
Dissolved Oxygen (mg/L)	7.40	7.97	8.23	SM4500-O G (1998) / 0.01	Field
Dissolved Oxygen (% saturation)	104	113	119	Calculated / 1	Calculated
pH	7.73	8.05	8.30	SM4500H+ (1998) / 0.1	Field
Salinity (ppt)	20	28	32	Refractive Index / 1	Field
Turbidity (NTU)	11.0	2.96	1.04	EPA 180.1 Rev. 2.0 (1993) / 0.01	03/23/09 ml
Total Suspended Solids (mg/L)	20.8	10.5	5.6	SM2540D (1998) / 0.1	03/25/09 ml
Ammonia (µg N/L)	56	18	10	Grasshoff, et. al. (1986) / 1	03/31/09 dh
Nitrate+Nitrite (µg N/L)	3630	1750	632	EPA 353.2 Rev. 2.0 (1993) / 1	04/01/09 dh
Total Nitrogen (µg N/L)	4610	2150	837	Grasshoff, et. al. (1986) / 10	04/02/09 dh
Total Phosphorus (µg P/L)	138	27	23	EPA 365.1 Rev. 2.0 (1993) / 5	04/03/09 dh
Chlorophyll a (µg/L)	11.8	1.21	1.25	SM10200H(M) / 0.03	03/23/09 jw

Maipalaoa Bridge Replacement, Farrington Highway. Federal Aid Project No. BR-093-1(21)

J. Mello, Laboratory Director

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501 Sumner Street, Suite 620
Honolulu HI 96817
ATTENTION: Robyn Ito ☎531-1308 fax:521-7348

FILE No.: 1201
REPORT DATE: 04/15/09
PAGE: 1 of 2

AECOS REPORT OF ANALYTICAL RESULTS

SAMPLE TYPE: Brackish water (estuarine) **AECOS LOG No.:** 25112
DATE SAMPLED: 03/23/09 **DATE RECEIVED:** 03/23/09

SAMPLE ID ⇨	Bridge	Detection Limit	Method Number	Analysis Date
ANALYTE ⇩	1045			Analyst ID
Temperature (° C)	24.9	0.1	YSI meter / SM2550B (1998)	Field (sb, kl)
pH	8.05	---	SM4500 H+ (1998)	Field
Dissolved Oxygen (mg/L)	7.97	0.1	YSI meter / SM4500-O G (1998)	Field
Dissolved Oxygen (% sat)	113	1	---	Calculated
Salinity (ppt)	28	1	Refractive index	03/23/09
Turbidity (NTU)	2.96	0.01	EPA 180.1 Rev. 2.0 (1993)	03/23/09 ml
Total Suspended Solids (mg/L)	10.5	0.1	SM 2540D (1998)	03/25/09 ml
Oil & Grease (mg/L)	2.1	0.1	EPA 1664A	03/31/09 CEL
Ammonia (µg N/L)	<100	100	SM 4500-NH3 B/C	03/27/09 CEL
Nitrate + Nitrite (µg N/L)	2200	500	SM4500-NO3 E	03/25/09 CEL
Total Nitrogen (µg N/L)	4700	500	SM4500-NO3E, SM4500 N Org B	03/25-27/09 CEL
Total Phosphorus (µg P/L)	<200	200	SM4500 P B/E	03/25-26/09 CEL
EPA 608 – Pesticides (µg/L)	ND	Varies	EPA 3510C / 608	03/26-27/09 CEL
EPA 624 – BTEX (µg/L)	ND	Varies	EPA 624	03/27/09 CEL
ND = Not Detected See Calscience Environmental Laboratories, Inc. Report for Work Order Number 09-03-2159 for Detection Limits and additional information.				

Maipalaoa Bridge Replacement, Farrington Highway. Federal Aid Project No. BR-093-1(21)
Field Notes: Sunny, 15% clouds. Trades 5-10mph, NE. No rain.

J. Mello, Laboratory Director

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Honolulu HI 96817
ATTENTION: Robyn Ito ☎531-1308 fax:521-7348

FILE No.:	1201
REPORT DATE:	04/15/09
PAGE:	2 of 2

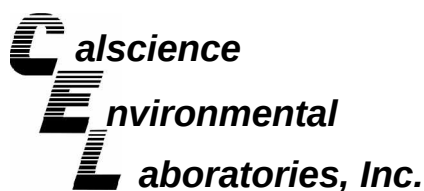
AECOS QA/QC REPORT

SAMPLE TYPE: Brackish water (estuarine) **AECOS LOG No.:** 25112
DATE SAMPLED: 03/23/09 **DATE RECEIVED:** 03/23/09
Maipalaoa Bridge Replacement, Farrington Highway. Federal Aid Project No. BR-093-1(21)

SAMPLE ID ⇄	Duplicate		Standard or QC Recovery	Blank
ANALYTE ↓	Sample	Duplicate	%	
Turbidity (NTU)	2.96	2.94	---	---
Total Suspended Solids (mg/L)	10	11	100%	<0.1
Ammonia (µg N/L)	See analytical report from Calscience Environmental Laboratories, Inc. Work Order No.: 09-03-2159			
Nitrate+Nitrite (µg N/L)	See analytical report from Calscience Environmental Laboratories, Inc. Work Order No.: 09-03-2159			
Total Nitrogen (µg N/L)	See analytical report from Calscience Environmental Laboratories, Inc. Work Order No.: 09-03-2159			
Total Phosphorus (µg P/L)	See analytical report from Calscience Environmental Laboratories, Inc. Work Order No.: 09-03-2159			
Oil & Grease (mg/L)	See analytical report from Calscience Environmental Laboratories, Inc. Work Order No.: 09-03-2159			
EPA 608 – Pesticides (µg/L)	See analytical report from Calscience Environmental Laboratories, Inc. Work Order No.: 09-03-2159			
EPA 624 – BTEX (µg/L)	See analytical report from Calscience Environmental Laboratories, Inc. Work Order No.: 09-03-2159			

References:

Grasshoff, K., M. Ehrhardt, & K. Kremling (eds). 1986. Methods of Seawater Analysis (2nd ed). Verlag Chemie, GmbH, Weinheim.
Standard Methods (SM). 1998. Standard Methods for the Examination of Water and Wastewater. 20th Edition. (Greenberg, Clesceri, and Eaton, eds.). APHA, AWWA, & WEF. 1100 pp.
U.S. Environmental Protection Agency (EPA). 1993. Methods for the Determination of Inorganic Substances in Environmental Samples. EPA 600/R-93/100.



April 01, 2009

Snookie Mello
AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Subject: **Calscience Work Order No.: 09-03-2159**
Client Reference: 25112

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/25/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink that reads 'Ranjit K. Clarke'.

Calscience Environmental
Laboratories, Inc.
Ranjit Clarke
Project Manager

Analytical Report



AECOS, Inc.
 45-939 Kamehameha Hwy #104
 Kaneohe, HI 96744-3221

Date Received: 03/25/09
 Work Order No: 09-03-2159
 Preparation: EPA 3510C
 Method: EPA 608
 Units: ug/L

Project: 25112

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Bridge	09-03-2159-1-E	03/23/09 10:45	Aqueous	GC 37	03/26/09	03/27/09 17:08	090326L04

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.11	1.11		Endrin	ND	0.11	1.11	
Gamma-BHC	ND	0.11	1.11		Endrin Aldehyde	ND	0.11	1.11	
Beta-BHC	ND	0.11	1.11		4,4'-DDD	ND	0.11	1.11	
Heptachlor	ND	0.11	1.11		Endosulfan II	ND	0.11	1.11	
Delta-BHC	ND	0.11	1.11		4,4'-DDT	ND	0.11	1.11	
Aldrin	ND	0.11	1.11		Endosulfan Sulfate	ND	0.11	1.11	
Heptachlor Epoxide	ND	0.11	1.11		Methoxychlor	ND	0.11	1.11	
Endosulfan I	ND	0.11	1.11		Chlordane	ND	1.1	1.11	
Dieldrin	ND	0.11	1.11		Toxaphene	ND	2.2	1.11	
4,4'-DDE	ND	0.11	1.11		Endrin Ketone	ND	0.11	1.11	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	120	50-135			2,4,5,6-Tetrachloro-m-Xylene	89	50-135		

Method Blank	099-12-731-42	N/A	Aqueous	GC 37	03/26/09	03/27/09 16:40	090326L04
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	94	50-135			2,4,5,6-Tetrachloro-m-Xylene	78	50-135		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



AECOS, Inc.
 45-939 Kamehameha Hwy #104
 Kaneohe, HI 96744-3221

Date Received: 03/25/09
 Work Order No: 09-03-2159
 Preparation: N/A
 Method: EPA 624
 Units: ug/L

Project: 25112

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Bridge	09-03-2159-1-A	03/23/09 10:45	Aqueous	GC/MS O	03/27/09	03/27/09 14:41	090327L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		o-Xylene	ND	1.0	1	
Ethylbenzene	ND	1.0	1		p/m-Xylene	ND	1.0	1	
Toluene	ND	1.0	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	88	76-118			Pentafluorobenzene	95	79-115		
Fluorobenzene	91	85-121							

Method Blank	097-07-002-907	N/A	Aqueous	GC/MS O	03/27/09	03/27/09 12:52	090327L01
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		o-Xylene	ND	1.0	1	
Ethylbenzene	ND	1.0	1		p/m-Xylene	ND	1.0	1	
Toluene	ND	1.0	1						
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	96	76-118			Pentafluorobenzene	97	79-115		
Fluorobenzene	92	85-121							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



AECOS, Inc.
 45-939 Kamehameha Hwy #104
 Kaneohe, HI 96744-3221

Date Received: 03/25/09
 Work Order No: 09-03-2159

Project: 25112

Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Bridge	09-03-2159-1	03/23/09	Aqueous

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	2.1	1.0	1		mg/L	03/31/09	03/31/09	EPA 1664A
Total Kjeldahl Nitrogen	2.5	0.50	1		mg/L	03/27/09	03/27/09	SM 4500 N Org B
Phosphorus, Total	ND	0.20	2		mg/L	03/25/09	03/26/09	SM 4500 P B/E
Ammonia (as N)	ND	0.10	1		mg/L	03/27/09	03/27/09	SM 4500-NH3 B/C
Nitrate-Nitrite (as N)	2.2	0.50	5		mg/L	N/A	03/25/09	SM 4500-NO3 E

Method Blank				N/A	Aqueous			
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Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
HEM: Oil and Grease	ND	1.0	1		mg/L	03/31/09	03/31/09	EPA 1664A
Total Kjeldahl Nitrogen	ND	0.50	1		mg/L	03/27/09	03/27/09	SM 4500 N Org B
Phosphorus, Total	ND	0.10	1		mg/L	03/25/09	03/26/09	SM 4500 P B/E
Ammonia (as N)	ND	0.10	1		mg/L	03/27/09	03/27/09	SM 4500-NH3 B/C
Nitrate-Nitrite (as N)	ND	0.10	1		mg/L	N/A	03/25/09	SM 4500-NO3 E

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report

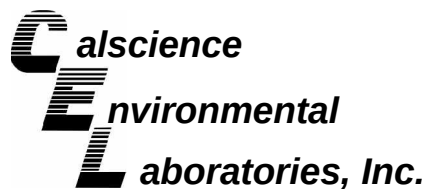
AECOS, Inc.	Date Sampled:	03/23/09
45-939 Kamehameha Hwy #104	Date Received:	03/25/09
Kanehoe, HI 96744-3221	Date Analyzed:	03/25-27/09
Work Order No.:		09-03-2159
Method:		SM 4500-NO3 E + SM 4500 N Org B
Project: 25112		Page 1 of 1

Total Nitrogen (TN) is calculated by adding Nitrate+Nitrite (as N) + Total Kjeldahl Nitrogen. Results reported in mg/L.

<u>Sample Number</u>	<u>Total Nitrogen Concentration</u>	<u>RL</u>	<u>Qual</u>
Bridge	4.7	0.50	
Method Blank	ND	0.50	

RL - Reporting Limit , Qual - Qualifiers

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Quality Control - Spike/Spike Duplicate



AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

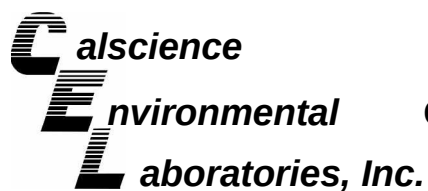
Date Received: 03/25/09
Work Order No: 09-03-2159
Preparation: N/A
Method: EPA 624

Project 25112

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-03-2206-1	Aqueous	GC/MS O	03/27/09	03/27/09	090327S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	107	105	86-116	2	0-9	
Carbon Tetrachloride	112	111	81-129	1	0-13	
Chlorobenzene	112	100	37-160	11	0-25	
1,2-Dichloroethane	90	91	80-120	1	0-25	
1,1-Dichloroethene	112	110	65-135	2	0-25	
1,2-Dichloropropane	104	102	80-120	2	0-25	
Ethylbenzene	117	105	68-134	11	0-22	
Tetrachloroethene	96	89	66-144	8	0-21	
Toluene	108	106	84-120	2	0-9	
1,1,2-Trichloroethane	99	96	52-150	3	0-25	
Trichloroethene	99	97	83-119	2	0-9	
Vinyl Chloride	118	111	60-140	6	0-25	
o-Xylene	116	105	67-133	10	0-22	
p/m-Xylene	117	106	66-138	10	0-22	
Methyl-t-Butyl Ether (MTBE)	99	105	69-141	6	0-24	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate



AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

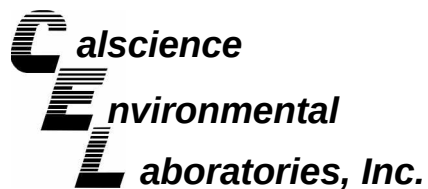
Date Received: N/A
Work Order No: 09-03-2159

Project: 25112

Matrix: Aqueous

<u>Parameter</u>	<u>Method</u>	<u>Quality Control Sample ID</u>	<u>Date Analyzed</u>	<u>Date Extracted</u>	<u>MS% REC</u>	<u>MSD % REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Phosphorus, Total	SM 4500 P B/E	09-03-2160-1	03/26/09	3/25/09	99	100	70-130	1	0-25	
Nitrate-Nitrite (as N)	SM 4500-NO3 E	09-03-2160-1	03/25/09	N/A	97	97	70-130	0	0-25	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Duplicate



AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: N/A
Work Order No: 09-03-2159

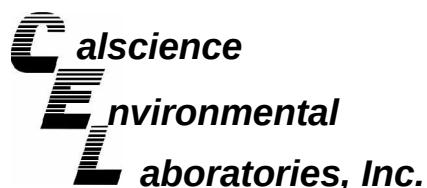
Project: 25112

Matrix: Aqueous

<u>Parameter</u>	<u>Method</u>	<u>QC Sample ID</u>	<u>Date Analyzed</u>	<u>Sample Conc</u>	<u>DUP Conc</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Total Kjeldahl Nitrogen	SM 4500 N Org B	09-03-2231-4	03/27/09	50	50	1	0-25	
Ammonia (as N)	SM 4500-NH3 B/C	09-03-2204-1	03/27/09	0.11	0.11	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit

A handwritten signature in black ink, appearing to be 'M. J. ...'.



Quality Control - LCS/LCS Duplicate



AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: N/A
Work Order No: 09-03-2159
Preparation: EPA 3510C
Method: EPA 608

Project: 25112

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-731-42	Aqueous	GC 37	03/26/09	03/27/09	090326L04		
<u>Parameter</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>%REC CL</u>	<u>ME CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Alpha-BHC	67	70	50-135	36-149	4	0-25	
Gamma-BHC	70	73	50-135	36-149	5	0-25	
Beta-BHC	71	75	50-135	36-149	6	0-25	
Heptachlor	70	73	50-135	36-149	5	0-25	
Delta-BHC	72	76	50-135	36-149	6	0-25	
Aldrin	69	72	50-135	36-149	5	0-25	
Heptachlor Epoxide	72	76	50-135	36-149	4	0-25	
Endosulfan I	74	77	50-135	36-149	4	0-25	
Dieldrin	62	65	50-135	36-149	4	0-25	
4,4'-DDE	76	80	50-135	36-149	6	0-25	
Endrin	81	85	50-135	36-149	6	0-25	
Endrin Aldehyde	83	83	50-135	36-149	1	0-25	
4,4'-DDD	80	82	50-135	36-149	3	0-25	
Endosulfan II	76	78	50-135	36-149	3	0-25	
4,4'-DDT	91	91	50-135	36-149	0	0-25	
Endosulfan Sulfate	84	71	50-135	36-149	17	0-25	
Methoxychlor	88	90	50-135	36-149	2	0-25	

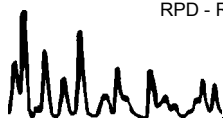
Total number of LCS compounds : 17

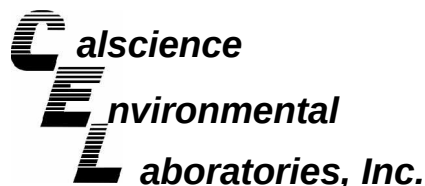
Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received: N/A
Work Order No: 09-03-2159
Preparation: N/A
Method: EPA 624

Project: 25112

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
097-07-002-907	Aqueous	GC/MS O	03/27/09	03/27/09	090327L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	100	102	83-113	78-118	1	0-9	
Bromodichloromethane	104	104	82-118	76-124	0	0-9	
Bromoform	105	101	78-126	70-134	4	0-10	
Carbon Tetrachloride	109	112	75-123	67-131	3	0-11	
Chlorobenzene	103	104	85-121	79-127	1	0-11	
Chloroethane	116	115	67-145	54-158	1	0-15	
Chloromethane	106	106	53-131	40-144	1	0-20	
2-Chloroethyl Vinyl Ether	70	68	1-145	0-169	2	0-40	
Chloroform	101	98	83-113	78-118	2	0-9	
1,3-Dichlorobenzene	105	106	92-122	87-127	1	0-13	
1,4-Dichlorobenzene	102	101	91-121	86-126	1	0-13	
1,2-Dichlorobenzene	99	98	95-119	91-123	1	0-13	
Dibromochloromethane	103	101	87-123	81-129	2	0-10	
1,1-Dichloroethane	106	107	80-116	74-122	1	0-17	
1,2-Dichloroethane	95	93	80-120	73-127	1	0-20	
1,1-Dichloroethene	113	116	67-133	56-144	2	0-12	
t-1,2-Dichloroethene	113	113	63-129	52-140	0	0-23	
1,2-Dichloropropane	102	101	84-114	79-119	0	0-9	
c-1,3-Dichloropropene	107	106	80-128	72-136	2	0-10	
t-1,3-Dichloropropene	106	106	84-132	76-140	0	0-12	
Ethylbenzene	108	108	90-132	83-139	1	0-12	
Methylene Chloride	117	119	58-118	48-128	2	0-32	ME
1,1,2,2-Tetrachloroethane	102	102	85-115	80-120	0	0-11	
Tetrachloroethene	95	93	81-117	75-123	1	0-13	
Toluene	103	105	90-120	85-125	2	0-9	
1,1,1-Trichloroethane	104	104	84-114	79-119	0	0-10	
1,1,2-Trichloroethane	100	99	85-115	80-120	1	0-9	
Trichloroethene	96	96	82-112	77-117	0	0-10	
Trichlorofluoromethane	100	101	67-133	56-144	1	0-11	
Vinyl Chloride	109	111	58-136	45-149	2	0-16	
o-Xylene	107	108	89-137	81-145	1	0-12	
p/m-Xylene	108	109	90-138	82-146	1	0-12	
Methyl-t-Butyl Ether (MTBE)	108	107	64-136	52-148	1	0-22	

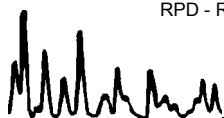
Total number of LCS compounds : 33

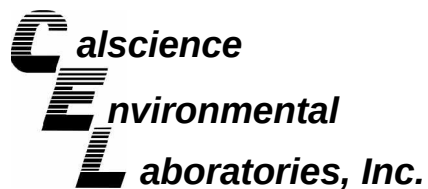
Total number of ME compounds : 1

Total number of ME compounds allowed : 2

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit





Quality Control - LCS/LCS Duplicate



AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received:
Work Order No:

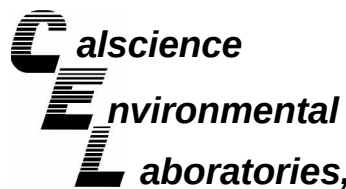
N/A
09-03-2159

Project: 25112

Matrix: Aqueous

<u>Parameter</u>	<u>Method</u>	<u>Quality Control</u> Sample ID	<u>Date</u> <u>Extracted</u>	<u>Date</u> <u>Analyzed</u>	<u>LCS %</u> <u>REC</u>	<u>LCSD %</u> <u>REC</u>	<u>%REC</u> <u>CL</u>	<u>RPD</u>	<u>RPD</u> <u>CL</u>	<u>Qual</u>
HEM: Oil and Grease	EPA 1664A	099-05-119-1,851	03/31/09	03/31/09	90	88	78-114	3	0-18	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Laboratory Control Sample



AECOS, Inc.
45-939 Kamehameha Hwy #104
Kaneohe, HI 96744-3221

Date Received:
Work Order No:

N/A
09-03-2159

Project: 25112

Matrix : Aqueous

<u>Parameter</u>	<u>Method</u>	<u>Quality Control</u> <u>Sample ID</u>	<u>Date</u> <u>Analyzed</u>	<u>Date</u> <u>Extracted</u>	<u>Conc</u> <u>Added</u>	<u>Conc</u> <u>Recovered</u>	<u>LCS</u> <u>%Rec</u>	<u>%Rec</u> <u>CL</u>	<u>Qualifiers</u>
Phosphorus, Total	SM 4500 P B/E	099-05-098-2,007	03/26/09	03/25/09	0.400	0.400	100	80-120	
Nitrate-Nitrite (as N)	SM 4500-NO3 E	099-05-120-1,636	03/25/09	N/A	0.500	0.495	99	80-120	

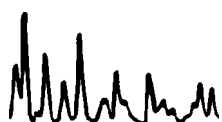
RPD - Relative Percent Difference , CL - Control Limit

Glossary of Terms and Qualifiers



Work Order Number: 09-03-2159

<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.





AECOS, Inc.

45-939 Kamehameha Highway Suite 104
Kaneohe, Oahu, HI 96744
Tel: (808) 234-7770 Fax: 234-7775

2159

SUB-- CHAIN OF CUSTODY FORM

PROJECT
FILE No.

LOG NUMBER

[25112]

CLIENT: AECOS INC.

ADDRESS:

CONTACT: SNOOKIE MELLO

PHONE No.: (808) 234-7770

Purchase Order No.:

☐ RUSH

☐ SEE REVERSE

SPECIAL INSTRUCTIONS

SAMPLED								
	☒	SAMPLE ID	DATE	TIME	SAMPLE TYPE	CONTAINER(S)	REQUESTED ANALYSES	PRESERVATION
1		Bridge	3/23/09	1045	water	2 1L glass	NH ₃ , NO ₃ , NO ₂ , TN, TP	H ₂ SO ₄
2					(brackish)	1 1L glass	Oil + Grease DL ≤ 1 mg/L	H ₂ SO ₄
3						2 1L glass	Pesticides EPA 608?	
4						4 40ml glass	BTEX EPA 624?	HCL
5								
6								
7								
8								
9								
10								

CLIENTS PROVIDING SAMPLES TO THE LABORATORY SHOULD COMPLETE AS MUCH OF THE ABOVE FORM AS POSSIBLE. NOTE: NAME AND DATED SIGNATURE OF PERSON COLLECTING THE SAMPLE MUST BE ENTERED BELOW. INFORMATION REQUESTED IN SHADED BOXES ABOVE TO BE FILLED IN BY THE LABORATORY.

SAMPLED BY:	DATE
S. Burr, K. Laing	3/23
PRINT NAME	20 09
	1045
RELINQUISHED:	DATE
Ann Mello	3/24
SIGNATURE	20 09
	TIME 11am

COMMENTS:

RECEIVED BY:	DATE
	20
SIGNATURE	TIME
RELINQUISHED:	DATE
	20
SIGNATURE OR INITIALS	TIME

PRECAUTIONS:

RECEIVED FOR LABORATORY:	DATE
	3/25/
	2009
SIGNATURE	TIME
RELINQUISHED:	DATE
	20
SIGNATURE OR INITIALS	TIME

DISPOSAL:

USE (BLACK) INK

Fedex 7964 56764617

RETURN SAMPLE TO CLIENT ☐



AECOS, Inc.
 (808) 234-7770
 45-939 Kamehameha Hwy, #104
 Kaneohe HI 96744

2 coolers are being sent. (2159)
 This paper is in both coolers!
 work

Subcontractor:

CEL

Requested By: SNOOKIE MELLO

Date: 3/23/09

Results Requested By: N.T.A.T.

of

Log No.	or bts	Sample Type	Analysis Requested	Collection Information	Sample Preparation
[2511]	1	Storm water	Oil + Grease DL $\leq$ 1mg/L	3/19/09	HCL
	2		TPH(diesel), TPH-CC (extended range)		HCL
	1		Total Recoverable metals: Aluminum, Lead, Zinc, Iron		HNO ₃
	2		EPA 8270 (Acenaphthene, Benzo(a)pyrene, Fluoranthene, Naphthalene)		None
	4		BTEX * 3 vials have a bubble.		HCL
	1		NH ₃ , NO ₃ , NO ₂ , TN, TP		H ₂ SO ₄
[2512]	2	brackish water	NH ₃ , NO ₃ , NO ₂ , TN, TP	3/23/09	H ₂ SO ₄
	1		Oil + Grease	"	H ₂ SO ₄
	2		Pesticides EPA 608?	"	None
	4		BTEX EPA 624?	"	HCL

Notes/Special Instructions:

* The cooler is not the problem, we'd like to get replacement bottles if possible! Thanks!

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AECOS

DATE: 03 / 25 / 09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 5.3 °C - 0.2 °C (CF) = 5.1 °C ☐ Blank ☒ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only

Initial: JP

CUSTODY SEALS INTACT:

☐ Cooler ☐ _____ ☐ No (Not Intact) ☒ Not Present ☐ N/A

Initial: JP

☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not Present

Initial: WB

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	☒	☐	☐
COC document(s) received complete.....	☒	☐	☐

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ COC not relinquished. ☐ No date relinquished. ☐ No time relinquished.

Sampler's name indicated on COC..... ☒ Yes ☐ No ☐ N/A

Sample container label(s) consistent with COC..... ☒ Yes ☐ No ☐ N/A

Sample container(s) intact and good condition..... ☒ Yes ☐ No ☐ N/A

Correct containers and volume for analyses requested..... ☒ Yes ☐ No ☐ N/A

Analyses received within holding time..... ☒ Yes ☐ No ☐ N/A

Proper preservation noted on COC or sample container..... ☒ Yes ☐ No ☐ N/A

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace..... ☐ Yes ☒ No ☐ N/A

Tedlar bag(s) free of condensation..... ☐ Yes ☐ No ☒ N/A

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve ☐ EnCores® ☐ TerraCores® ☐ _____

Water: ☐ VOA ☒ VOA_h ☐ VOA_{na2} ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_{po4} ☒ 1AGB ☐ 1AGB_{na2}

☒ 1AGB_s ☐ 500AGB ☐ 500AGB_s ☐ 250CGB ☐ 250CGB_s ☐ 1PB ☐ 500PB ☐ 500PB_{na} ☐ 250PB

☐ 250PB_n ☐ 125PB ☐ 125PB_{znna} ☐ 100PBsterile ☐ 100PB_{na2} ☐ _____ ☐ _____ ☐ _____

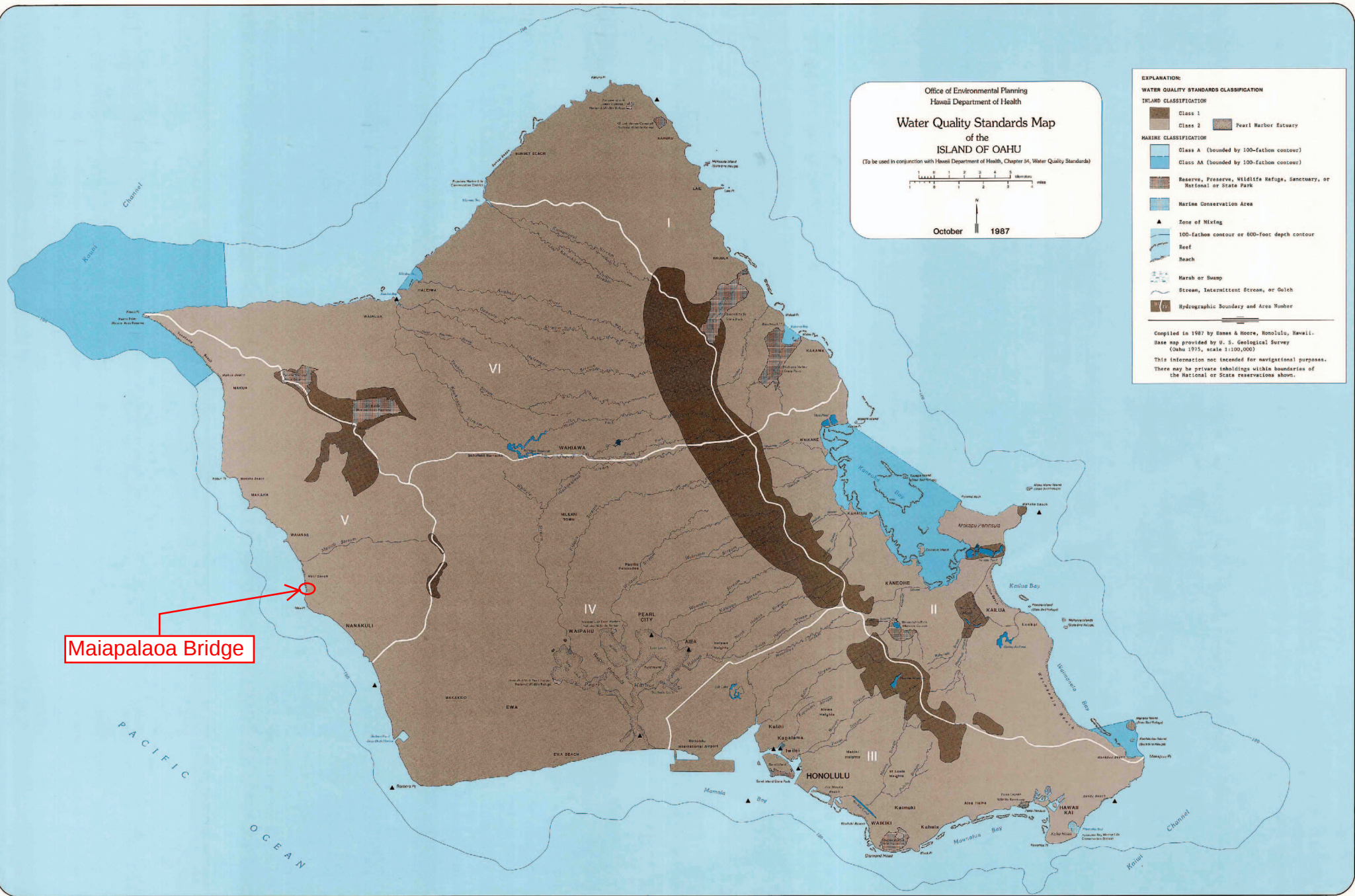
Air: ☐ Tedlar® ☐ Summa® ☐ _____ **Sludge/Other:** ☐ _____ **Checked/Labeled by:** WB

Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle

Reviewed by: YL

Preservative: h:HCL n:HNO₃ na₂:Na₂S₂O₃ na:NaOH po₄:H₃PO₄ s:H₂SO₄ znna:ZnAc₂+NaOH

Scanned by: WB



Office of Environmental Planning
Hawaii Department of Health

**Water Quality Standards Map
of the
ISLAND OF OAHU**

(To be used in conjunction with Hawaii Department of Health, Chapter 34, Water Quality Standards)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

October 1987

EXPLANATION:

WATER QUALITY STANDARDS CLASSIFICATION

INLAND CLASSIFICATION

Class 1
Class 2
Pearl Harbor Estuary

MARINE CLASSIFICATION

Class A (bounded by 100-fathom contour)
Class AA (bounded by 100-fathom contour)
Reserve, Preserve, Wildlife Refuge, Sanctuary, or National or State Park
Marine Conservation Area
Zone of Mixing
100-fathom contour or 600-foot depth contour
Reef
Beach
Marsh or Swamp
Stream, Intermittent Stream, or Gulch
Hydrographic Boundary and Area Number

Compiled in 1987 by Cass & Moore, Honolulu, Hawaii.
Base map provided by U. S. Geological Survey
(Oahu 1975, scale 1:100,000)
This information not intended for navigational purposes.
There may be private inholdings within boundaries of
the National or State reservations shown.