

APPENDIX E

**First Quarter 2014 Analytical Laboratory Reports, Chain of Custody,
and Validation Reports**

APPENDIX E

TABLE OF CONTENTS

Section No.

- 1 Outfall 009 – February 28 & March 1, 2014 - MEC^X Data Validation Report
- 2 Outfall 009 – February 28 & March 1, 2014 - Test America Analytical Laboratory Report
- 3 Outfall 009 – February 28, 2014 - Test America Analytical Laboratory Report
- 4 Outfall 010 – February 28, 2014 - MEC^X Data Validation Report
- 5 Outfall 010 – February 28, 2014 & March 3, 2014 - Test America Analytical Laboratory Report
- 6 Arroyo Simi-Frontier Park - February 28, 2014 - MEC^X Data Validation Report
- 7 Arroyo Simi-Frontier Park – February 28, 2014 - Test America Analytical Laboratory Report
- 8 Arroyo Simi-Frontier Park – March 10, 2014 - MEC^X Data Validation Report
- 9 Arroyo Simi-Frontier Park – March 10, 2014 - Test America Analytical Laboratory Report
- 10 Arroyo Simi-Frontier Park – March 14, 2014 - MEC^X Data Validation Report
- 11 Arroyo Simi-Frontier Park – March 14, 2014 - Test America Analytical Laboratory Report
- 12 Arroyo Simi-Frontier Park – March 19, 2014 - MEC^X Data Validation Report
- 13 Arroyo Simi-Frontier Park – March 19, 2014 - Test America Analytical Laboratory Report
- 14 Arroyo Simi-Frontier Park – March 24, 2014 - MEC^X Data Validation Report
- 15 Arroyo Simi-Frontier Park – March 24, 2014 - Test America Analytical Laboratory Report
- 16 Arroyo Simi-Frontier Park Sediment – March 19, 2014 - MEC^X Data Validation Report
- 17 Arroyo Simi-Frontier Park Sediment – March 19, 2014 - Test America Analytical Laboratory Report
- 18 Arroyo Simi-Frontier Park Sediment – March 19, 2014 - Test America Analytical Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-71553-1

Client Project/Site: Boeing SSFL outfall 10 Annual

Revision: 4

For:

Haley & Aldrich, Inc.

9040 Friars Rd.

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

5/8/2014 6:28:48 PM

Debby Wilson, Manager of Project Management

(949)261-1022

debby.wilson@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.



Debby Wilson
Manager of Project Management
5/8/2014 6:28:48 PM



Table of Contents

Cover Page	1
Table of Contents	3
Sample Summary	4
Case Narrative	5
Client Sample Results	7
Method Summary	16
Lab Chronicle	17
QC Sample Results	20
QC Association Summary	50
Definitions/Glossary	58
Certification Summary	60
Subcontract Data	62
Chain of Custody	109
Receipt Checklists	113
Tracer Carrier Summary	116

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-71553-1	Outfall010_20140228_Grab	Water	02/28/14 12:00	02/28/14 18:00
440-71553-2	TB-20140228	Water	02/28/14 12:00	02/28/14 18:00
440-71553-3	BLK	Water	03/03/14 13:47	02/28/14 18:00

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Job ID: 440-71553-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-71553-1

Comments

Revised to remove Magnesium per chain of custody. Due to lab error, several analytes were preliminarily reported that are not listed in the permit. This final report does not include the following analytes not listed in the permit: 2-Methylnaphthalene, 2-Methylphenol, 2-Nitroaniline, 3-Nitroaniline, 4-Chloroaniline, 4-Methylphenol, 4-Nitroaniline, Aniline, Benzoic acid, Benzyl Alcohol, cis-1,2-Dichloroethene, Dibenzofuran, 1,2-Dichloro-1,1,2-trifluoroethane, Cyclohexane, Trifluorotrichloroethane (Freon 113). When VOCs/SVOCs are analyzed, there are over 100 analytes that could be reported and these analytes listed above were mistakenly checked to be reported.

Receipt

The samples were received on 2/28/2014 6:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.7° C.

GC/MS VOA

Method(s) 624: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 165917 were outside control limits. Sample matrix interference is suspected.

Method(s) 624: The laboratory control sample (LCS) for batch 165917 recovered outside control limits for the following analytes: Chloromethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

No other analytical or quality issues were noted.

GC/MS Semi VOA

Method(s) 525.2: Internal standard (Phenanthrene-d10, Chrysene-d12) responses were outside of acceptance limits for the following sample(s): Outfall010_20140228_Grab (440-71553-1). The sample(s) shows evidence of matrix interference. A high bias is implied. The sample was reported based on ND results for all target analytes. No bias detected.

Method(s) 525.2: Surrogate (Triphenylphosphate) recovery for the following sample(s) was outside the upper control limit: Outfall010_20140228_Grab (440-71553-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 525.2: The surrogate (Perylene-d12) recovery for the batch method blank (MB) was below acceptance limit: (MB 440-165963/1-A). The associated samples were reported based on individual surrogate recoveries falling within acceptance limits. No bias detected in the associated samples.

Method(s) 525.2: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 165963.

Method(s) 625: The method blank for batch 166462 contained Benzoic Acid above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 166462.

Method(s) 625: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 166462 recovered outside control limits for the following analytes: 3,3-Dichlorobenzidine. Individual recoveries were within acceptable limits.

Method(s) 625: The following sample(s) required a dilution due to the nature of the sample matrix: Outfall010_20140228_Grab (440-71553-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Job ID: 440-71553-1 (Continued)

Laboratory: TestAmerica Irvine (Continued)

No other analytical or quality issues were noted.

HPLC

Method(s) 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for chloride in the following sample associated with batch 165707 were outside control limits: (440-71406-15 MS), (440-71406-15 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 166337 and 167011. See Blank Spike and Blank Spike Duplicate. (LCS 440-166337/6-A)

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 166337. (LCS 440-166337/2-A)

No other analytical or quality issues were noted.

RAD

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

Metals

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

General Chemistry

Method(s) 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 168416.

No other analytical or quality issues were noted.

Biology

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

Dioxin

Analytical notes included in the attached pdf report from TestAmerica Knoxville

Organic Prep

Method(s) 525.2: The following sample(s) was prepared outside of the prescribed preparation holding time of 24 hours due to login error: Outfall010_20140228_Grab (440-71553-1).

No other analytical or quality issues were noted.



Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: Outfall010_20140228_Grab

Lab Sample ID: 440-71553-1

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			03/01/14 14:28	1
1,1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Acrolein	ND		5.0	2.5	ug/L			03/01/14 14:28	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Acrylonitrile	ND		2.0	1.0	ug/L			03/01/14 14:28	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
1,2-Dichlorobenzene	ND		0.50	0.50	ug/L			03/01/14 15:43	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Benzene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Bromoform	ND		1.0	0.25	ug/L			03/01/14 15:43	1
Bromomethane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Chlorobenzene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Dibromochloromethane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Chloroethane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Chloroform	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Chloromethane	ND	LQ	0.50	0.25	ug/L			03/01/14 15:43	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Bromodichloromethane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Methylene Chloride	ND		1.0	0.88	ug/L			03/01/14 15:43	1
Tetrachloroethene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Toluene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Vinyl chloride	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Trichloroethene	ND		0.50	0.25	ug/L			03/01/14 15:43	1
Xylenes, Total	ND		1.0	0.50	ug/L			03/01/14 15:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 128		03/01/14 14:28	1
Dibromofluoromethane (Surr)	114		76 - 132		03/01/14 14:28	1
4-Bromofluorobenzene (Surr)	99		80 - 120		03/01/14 15:43	1
Dibromofluoromethane (Surr)	103		76 - 132		03/01/14 15:43	1
Toluene-d8 (Surr)	108		80 - 128		03/01/14 15:43	1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND	GR	0.96	0.077	ug/L		03/01/14 15:25	03/03/14 19:03	1
Diazinon	ND	GR	0.24	0.096	ug/L		03/01/14 15:25	03/03/14 19:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,3-Dimethyl-2-nitrobenzene	106		70 - 130	03/01/14 15:25	03/03/14 19:03	1
Perylene-d12	81	GR	70 - 130	03/01/14 15:25	03/03/14 19:03	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: Outfall010_20140228_Grab

Lab Sample ID: 440-71553-1

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenylphosphate	212	LH GR	70 - 130	03/01/14 15:25	03/03/14 19:03	1

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Acenaphthylene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Anthracene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Benzidine	ND		9.48	4.74	ug/L		03/04/14 12:12	03/12/14 14:04	1
Benzo[a]anthracene	ND		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
Benzo[b]fluoranthene	ND		1.90	0.948	ug/L		03/04/14 12:12	03/12/14 14:04	1
Benzo[k]fluoranthene	ND		0.474	0.237	ug/L		03/04/14 12:12	03/12/14 14:04	1
Benzo[a]pyrene	ND		1.90	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
Bis(2-chloroethoxy)methane	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Bis(2-chloroethyl)ether	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Bis(2-ethylhexyl) phthalate	6.71		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
4-Bromophenyl phenyl ether	ND		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
Butyl benzy phthalate	ND		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
4-Chloro-3-methylphenol	ND		1.90	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
2-Chloronaphthalene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
2-Chlorophenol	ND		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
4-Chlorophenyl phenyl ether	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Chrysene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Dibenz(a,h)anthracene	ND		0.474	0.237	ug/L		03/04/14 12:12	03/12/14 14:04	1
Di-n-butyl phthalate	ND		1.90	0.948	ug/L		03/04/14 12:12	03/12/14 14:04	1
1,2-Dichlorobenzene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
1,3-Dichlorobenzene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
1,4-Dichlorobenzene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
3,3'-Dichlorobenzidine	ND	BA	4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
2,4-Dichlorophenol	ND		1.90	0.948	ug/L		03/04/14 12:12	03/12/14 14:04	1
Diethyl phthalate	0.887	J,DX	0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
2,4-Dimethylphenol	ND		1.90	0.948	ug/L		03/04/14 12:12	03/12/14 14:04	1
Dimethyl phthalate	0.501		0.474	0.237	ug/L		03/04/14 12:12	03/12/14 14:04	1
4,6-Dinitro-2-methylphenol	ND		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
2,4-Dinitrophenol	ND		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
2,4-Dinitrotoluene	ND		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
2,6-Dinitrotoluene	ND		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
Di-n-octyl phthalate	ND		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
Fluoranthene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Fluorene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Hexachlorobenzene	ND		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
Hexachlorobutadiene	ND		1.90	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
Hexachloroethane	ND		2.84	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
Hexachlorocyclopentadiene	ND		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
Indeno[1,2,3-cd]pyrene	ND		1.90	0.948	ug/L		03/04/14 12:12	03/12/14 14:04	1
Isophorone	ND		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
Naphthalene	ND		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
Nitrobenzene	ND		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: Outfall010_20140228_Grab

Lab Sample ID: 440-71553-1

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	ND		1.90	0.948	ug/L		03/04/14 12:12	03/12/14 14:04	1
4-Nitrophenol	ND		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
N-Nitrosodimethylamine	ND		1.90	0.948	ug/L		03/04/14 12:12	03/12/14 14:04	1
N-Nitrosodiphenylamine	ND		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
N-Nitrosodi-n-propylamine	ND		1.90	0.948	ug/L		03/04/14 12:12	03/12/14 14:04	1
Pentachlorophenol	ND		1.90	0.948	ug/L		03/04/14 12:12	03/12/14 14:04	1
Phenanthrene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Phenol	5.80		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
Pyrene	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
1,2,4-Trichlorobenzene	ND		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
2,4,6-Trichlorophenol	ND		0.948	0.474	ug/L		03/04/14 12:12	03/12/14 14:04	1
Benzo[g,h,i]perylene	ND		4.74	1.90	ug/L		03/04/14 12:12	03/12/14 14:04	1
bis (2-chloroisopropyl) ether	ND		0.474	0.190	ug/L		03/04/14 12:12	03/12/14 14:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	72		50 - 120				03/04/14 12:12	03/12/14 14:04	1
2-Fluorophenol	70		30 - 120				03/04/14 12:12	03/12/14 14:04	1
2,4,6-Tribromophenol	100		40 - 120				03/04/14 12:12	03/12/14 14:04	1
Nitrobenzene-d5	85		45 - 120				03/04/14 12:12	03/12/14 14:04	1
Terphenyl-d14	79		37 - 144				03/04/14 12:12	03/12/14 14:04	1
Phenol-d6	80		35 - 120				03/04/14 12:12	03/12/14 14:04	1

Method: 608 PCB LL - Polychlorinated Biphenyls (PCBs) Low level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.47	0.24	ug/L		03/04/14 06:40	03/06/14 20:37	1
Aroclor 1221	ND		0.47	0.24	ug/L		03/04/14 06:40	03/06/14 20:37	1
Aroclor 1232	ND		0.47	0.24	ug/L		03/04/14 06:40	03/06/14 20:37	1
Aroclor 1242	ND		0.47	0.24	ug/L		03/04/14 06:40	03/06/14 20:37	1
Aroclor 1248	ND		0.47	0.24	ug/L		03/04/14 06:40	03/06/14 20:37	1
Aroclor 1254	ND		0.47	0.24	ug/L		03/04/14 06:40	03/06/14 20:37	1
Aroclor 1260	ND		0.47	0.24	ug/L		03/04/14 06:40	03/06/14 20:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	86		45 - 120				03/04/14 06:40	03/06/14 20:37	1

Method: 608 Pesticides - Organochlorine Pesticides Low level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0047	0.0014	ug/L		03/04/14 06:40	03/05/14 19:32	1
alpha-BHC	ND		0.0047	0.0024	ug/L		03/04/14 06:40	03/05/14 19:32	1
beta-BHC	ND		0.0094	0.0038	ug/L		03/04/14 06:40	03/05/14 19:32	1
Chlordane (technical)	ND		0.094	0.075	ug/L		03/04/14 06:40	03/05/14 19:32	1
delta-BHC	ND		0.0047	0.0033	ug/L		03/04/14 06:40	03/05/14 19:32	1
Dieldrin	ND		0.0047	0.0019	ug/L		03/04/14 06:40	03/05/14 19:32	1
Endosulfan I	ND		0.0047	0.0028	ug/L		03/04/14 06:40	03/05/14 19:32	1
Endosulfan II	ND		0.0047	0.0019	ug/L		03/04/14 06:40	03/05/14 19:32	1
Endosulfan sulfate	ND		0.0094	0.0028	ug/L		03/04/14 06:40	03/05/14 19:32	1
Endrin	ND		0.0047	0.0019	ug/L		03/04/14 06:40	03/05/14 19:32	1
Endrin aldehyde	ND		0.0094	0.0019	ug/L		03/04/14 06:40	03/05/14 19:32	1
gamma-BHC (Lindane)	ND		0.0094	0.0028	ug/L		03/04/14 06:40	03/05/14 19:32	1
Heptachlor	ND		0.0094	0.0028	ug/L		03/04/14 06:40	03/05/14 19:32	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: Outfall010_20140228_Grab

Lab Sample ID: 440-71553-1

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Method: 608 Pesticides - Organochlorine Pesticides Low level (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	ND		0.0047	0.0024	ug/L		03/04/14 06:40	03/05/14 19:32	1
Toxaphene	ND		0.47	0.24	ug/L		03/04/14 06:40	03/05/14 19:32	1
4,4'-DDD	ND		0.0047	0.0038	ug/L		03/04/14 06:40	03/05/14 19:32	1
4,4'-DDE	ND		0.0047	0.0028	ug/L		03/04/14 06:40	03/05/14 19:32	1
4,4'-DDT	ND		0.0094	0.0038	ug/L		03/04/14 06:40	03/05/14 19:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	43		35 - 115				03/04/14 06:40	03/05/14 19:32	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.47	J,DX	1.0	0.25	ug/L			03/01/14 00:32	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.3		0.50	0.25	mg/L			02/28/14 23:24	1
Nitrate Nitrite as N	2.0		0.15	0.070	mg/L			02/28/14 23:24	1
Sulfate	15		0.50	0.25	mg/L			02/28/14 23:24	1

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			03/11/14 17:00	1

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B)

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000358	ug/L		03/06/14 10:00	03/17/14 14:54	1
Total TCDD	ND		0.0000095	0.00000358	ug/L		03/06/14 10:00	03/17/14 14:54	1
1,2,3,7,8-PeCDD	ND		0.0000477	0.00000224	ug/L		03/06/14 10:00	03/17/14 14:54	1
Total PeCDD	ND		0.0000477	0.00000224	ug/L		03/06/14 10:00	03/17/14 14:54	1
1,2,3,4,7,8-HxCDD	ND		0.0000477	0.00000178	ug/L		03/06/14 10:00	03/17/14 14:54	1
1,2,3,6,7,8-HxCDD	0.0000386	Q J	0.0000477	0.00000186	ug/L		03/06/14 10:00	03/17/14 14:54	1
1,2,3,7,8,9-HxCDD	ND		0.0000477	0.00000169	ug/L		03/06/14 10:00	03/17/14 14:54	1
Total HxCDD	0.0000160	J Q	0.0000477	0.00000169	ug/L		03/06/14 10:00	03/17/14 14:54	1
1,2,3,4,6,7,8-HpCDD	0.0000719		0.0000477	0.00000267	ug/L		03/06/14 10:00	03/17/14 14:54	1
Total HpCDD	0.000168		0.0000477	0.00000267	ug/L		03/06/14 10:00	03/17/14 14:54	1
OCDD	0.000764	B	0.0000953	0.00000364	ug/L		03/06/14 10:00	03/17/14 14:54	1
2,3,7,8-TCDF	ND		0.0000095	0.00000243	ug/L		03/06/14 10:00	03/17/14 14:54	1
Total TCDF	ND		0.0000095	0.00000243	ug/L		03/06/14 10:00	03/17/14 14:54	1
1,2,3,7,8-PeCDF	ND		0.0000477	0.00000178	ug/L		03/06/14 10:00	03/17/14 14:54	1
2,3,4,7,8-PeCDF	ND		0.0000477	0.00000156	ug/L		03/06/14 10:00	03/17/14 14:54	1
Total PeCDF	ND		0.0000477	0.00000156	ug/L		03/06/14 10:00	03/17/14 14:54	1
1,2,3,4,7,8-HxCDF	ND		0.0000477	0.00000114	ug/L		03/06/14 10:00	03/17/14 14:54	1
1,2,3,6,7,8-HxCDF	ND		0.0000477	0.00000113	ug/L		03/06/14 10:00	03/17/14 14:54	1
2,3,4,6,7,8-HxCDF	ND		0.0000477	0.00000108	ug/L		03/06/14 10:00	03/17/14 14:54	1
1,2,3,7,8,9-HxCDF	ND		0.0000477	0.00000115	ug/L		03/06/14 10:00	03/17/14 14:54	1
Total HxCDF	0.00000993	J Q	0.0000477	0.00000108	ug/L		03/06/14 10:00	03/17/14 14:54	1
1,2,3,4,6,7,8-HpCDF	0.0000147	J	0.0000477	0.00000190	ug/L		03/06/14 10:00	03/17/14 14:54	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: Outfall010_20140228_Grab

Lab Sample ID: 440-71553-1

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,7,8,9-HpCDF	ND		0.0000477	0.00000234	ug/L		03/06/14 10:00	03/17/14 14:54	1
Total HpCDF	0.0000325	J	0.0000477	0.00000190	ug/L		03/06/14 10:00	03/17/14 14:54	1
OCDF	0.0000435	J	0.0000953	0.00000255	ug/L		03/06/14 10:00	03/17/14 14:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	92		35 - 197				03/06/14 10:00	03/17/14 14:54	1
Internal Standard	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	85		25 - 164				03/06/14 10:00	03/17/14 14:54	1
13C-1,2,3,7,8-PeCDD	89		25 - 181				03/06/14 10:00	03/17/14 14:54	1
13C-1,2,3,4,7,8-HxCDD	82		32 - 141				03/06/14 10:00	03/17/14 14:54	1
13C-1,2,3,6,7,8-HxCDD	85		28 - 130				03/06/14 10:00	03/17/14 14:54	1
13C-1,2,3,4,6,7,8-HpCDD	81		23 - 140				03/06/14 10:00	03/17/14 14:54	1
13C-OCDD	76		17 - 157				03/06/14 10:00	03/17/14 14:54	1
13C-2,3,7,8-TCDF	74		24 - 169				03/06/14 10:00	03/17/14 14:54	1
13C-1,2,3,7,8-PeCDF	83		24 - 185				03/06/14 10:00	03/17/14 14:54	1
13C-2,3,4,7,8-PeCDF	73		21 - 178				03/06/14 10:00	03/17/14 14:54	1
13C-1,2,3,4,7,8-HxCDF	74		26 - 152				03/06/14 10:00	03/17/14 14:54	1
13C-1,2,3,6,7,8-HxCDF	72		26 - 123				03/06/14 10:00	03/17/14 14:54	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136				03/06/14 10:00	03/17/14 14:54	1
13C-1,2,3,7,8,9-HxCDF	93		29 - 147				03/06/14 10:00	03/17/14 14:54	1
13C-1,2,3,4,6,7,8-HpCDF	77		28 - 143				03/06/14 10:00	03/17/14 14:54	1
13C-1,2,3,4,7,8,9-HpCDF	82		26 - 138				03/06/14 10:00	03/17/14 14:54	1
13C-OCDF	74		17 - 157				03/06/14 10:00	03/17/14 14:54	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	6100		50	25	ug/L		03/11/14 10:42	03/11/14 18:09	1
Arsenic	ND		10	7.0	ug/L		03/11/14 10:42	03/11/14 18:09	1
Boron	0.097		0.050	0.025	mg/L		03/11/14 10:42	03/11/14 18:09	1
Beryllium	1.2	J,DX	2.0	0.90	ug/L		03/11/14 10:42	03/11/14 18:09	1
Chromium	9.7		5.0	2.0	ug/L		03/11/14 10:42	03/11/14 18:09	1
Iron	7.8		0.040	0.020	mg/L		03/11/14 10:42	03/11/14 18:09	1
Nickel	7.9	J,DX	10	2.0	ug/L		03/11/14 10:42	03/11/14 18:09	1
Vanadium	17		10	3.0	ug/L		03/11/14 10:42	03/11/14 18:09	1
Zinc	62		20	9.0	ug/L		03/11/14 10:42	03/11/14 18:09	1
Hardness, as CaCO3	56		0.33	0.17	mg/L		03/11/14 10:42	03/11/14 18:09	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	150	QP	50	25	ug/L		03/10/14 09:25	03/10/14 23:18	1
Arsenic	ND	QP	10	7.0	ug/L		03/10/14 09:25	03/10/14 23:18	1
Boron	0.10	QP	0.050	0.025	mg/L		03/10/14 09:25	03/10/14 23:18	1
Beryllium	ND	QP	2.0	0.90	ug/L		03/10/14 09:25	03/10/14 23:18	1
Chromium	ND	QP	5.0	2.0	ug/L		03/10/14 09:25	03/10/14 23:18	1
Iron	0.11	QP	0.040	0.020	mg/L		03/10/14 09:25	03/10/14 23:18	1
Nickel	2.2	J,DX QP	10	2.0	ug/L		03/10/14 09:25	03/10/14 23:18	1
Vanadium	ND	QP	10	3.0	ug/L		03/10/14 09:25	03/10/14 23:18	1
Zinc	12	J,DX MB QP	20	9.0	ug/L		03/10/14 09:25	03/10/14 23:18	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: Outfall010_20140228_Grab

Lab Sample ID: 440-71553-1

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	31	MB QP	0.33	0.17	mg/L		03/10/14 09:25	03/10/14 23:18	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		03/11/14 12:47	03/11/14 20:51	1
Copper	12		2.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:51	1
Lead	5.6		1.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:51	1
Antimony	0.70	J,DX	2.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:51	1
Selenium	ND		2.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:51	1
Thallium	ND		1.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:51	1
Silver	ND		1.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:51	1

Method: 200.8 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	QP	1.0	0.25	ug/L		03/10/14 09:45	03/10/14 21:40	1
Copper	3.6	QP	2.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:40	1
Lead	ND	QP	1.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:40	1
Antimony	ND	QP	2.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:40	1
Selenium	ND	QP	2.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:40	1
Thallium	ND	QP	1.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:40	1
Silver	ND	QP	1.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:40	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		03/11/14 11:18	03/12/14 13:08	1

Method: 245.1 - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	QP	0.20	0.10	ug/L		03/10/14 16:29	03/11/14 18:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.7	1.3	mg/L		03/12/14 06:09	03/12/14 08:43	1
Total Dissolved Solids	120		10	5.0	mg/L			03/06/14 15:35	1
Total Suspended Solids	160		6.7	3.3	mg/L			03/05/14 19:06	1
Cyanide, Total	ND		5.0	3.0	ug/L		03/05/14 16:59	03/05/14 22:04	1
Fluoride	0.12		0.10	0.020	mg/L			03/10/14 12:58	1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Gross Alpha	1.38	U	1.18	1.19	1.79	pCi/L	03/11/14 12:28	03/16/14 20:18	1
Gross Beta	5.02		0.958	1.08	1.02	pCi/L	03/11/14 12:28	03/16/14 20:18	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Cesium-137	0.827	U	6.59	6.59	12.2	pCi/L	03/04/14 15:31	03/05/14 19:24	1
Potassium-40	-6.27	U	107	107	188	pCi/L	03/04/14 15:31	03/05/14 19:24	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: Outfall010_20140228_Grab

Lab Sample ID: 440-71553-1

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0775		0.0478	0.0483	0.0611	pCi/L	03/04/14 14:21	03/26/14 06:49	1
Carrier	%Yield	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Ba Carrier	72.3		40 - 110				03/04/14 14:21	03/26/14 06:49	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.388	U	0.270	0.272	0.416	pCi/L	03/04/14 14:31	03/14/14 10:57	1
Carrier	%Yield	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Ba Carrier	72.3		40 - 110				03/04/14 14:31	03/14/14 10:57	1
Y Carrier	84.7		40 - 110				03/04/14 14:31	03/14/14 10:57	1

Method: 905 - Strontium-90 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.237	U	0.216	0.217	0.349	pCi/L	03/06/14 12:43	03/17/14 15:52	1
Carrier	%Yield	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	80.9		40 - 110				03/06/14 12:43	03/17/14 15:52	1
Y Carrier	87.1		40 - 110				03/06/14 12:43	03/17/14 15:52	1

Method: 906.0 - Tritium, Total (LSC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	6.31	U	147	147	273	pCi/L	03/19/14 07:01	03/20/14 17:40	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.372		0.197	0.198	0.164	pCi/L	03/11/14 09:43	03/12/14 17:40	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.465		0.27	0.28	0.0611	pCi/L		03/26/14 00:49	1

Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	350		1.8	1.8	MPN/100mL			02/28/14 19:17	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: Outfall010_20140228_Grab

Lab Sample ID: 440-71553-1

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	350		1.8	1.8	MPN/100mL			02/28/14 19:17	1

Client Sample ID: TB-20140228

Lab Sample ID: 440-71553-2

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			03/01/14 14:03	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Acrolein	ND		5.0	2.5	ug/L			03/01/14 14:03	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Acrylonitrile	ND		2.0	1.0	ug/L			03/01/14 14:03	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
1,2-Dichlorobenzene	ND		0.50	0.50	ug/L			03/01/14 15:15	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Benzene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Bromoform	ND		1.0	0.25	ug/L			03/01/14 15:15	1
Bromomethane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Chlorobenzene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Dibromochloromethane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Chloroethane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Chloroform	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Chloromethane	ND	LQ	0.50	0.25	ug/L			03/01/14 15:15	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Bromodichloromethane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Methylene Chloride	ND		1.0	0.88	ug/L			03/01/14 15:15	1
Tetrachloroethene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Toluene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Vinyl chloride	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Trichloroethene	ND		0.50	0.25	ug/L			03/01/14 15:15	1
Xylenes, Total	ND		1.0	0.50	ug/L			03/01/14 15:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	104		80 - 128		03/01/14 14:03	1
Dibromofluoromethane (Surr)	114		76 - 132		03/01/14 14:03	1
4-Bromofluorobenzene (Surr)	100		80 - 120		03/01/14 15:15	1
Dibromofluoromethane (Surr)	102		76 - 132		03/01/14 15:15	1
Toluene-d8 (Surr)	106		80 - 128		03/01/14 15:15	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: BLK

Lab Sample ID: 440-71553-3

Date Collected: 03/03/14 13:47

Matrix: Water

Date Received: 02/28/14 18:00

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Gross Alpha	0.742	U	0.663	0.668	0.996	pCi/L	03/11/14 12:28	03/17/14 07:29	1
Gross Beta	-0.315	U	0.581	0.582	1.06	pCi/L	03/11/14 12:28	03/17/14 07:29	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Cesium-137	-0.928	U	7.64	7.64	14.3	pCi/L	03/04/14 15:31	03/05/14 19:25	1
Potassium-40	-49.2	U	257	257	221	pCi/L	03/04/14 15:31	03/05/14 19:25	1

Method: 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Radium-226	0.0759		0.0421	0.0427	0.0524	pCi/L	03/04/14 14:21	03/26/14 06:49	1
Carrier	%Yield	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110				03/04/14 14:21	03/26/14 06:49	1

Method: 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Radium-228	0.224	U	0.195	0.196	0.312	pCi/L	03/04/14 14:31	03/14/14 10:57	1
Carrier	%Yield	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110				03/04/14 14:31	03/14/14 10:57	1
Y Carrier	88.0		40 - 110				03/04/14 14:31	03/14/14 10:57	1

Method: 905 - Strontium-90 (GFPC)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Strontium-90	0.0228	U	0.170	0.170	0.300	pCi/L	03/06/14 12:43	03/17/14 15:53	1
Carrier	%Yield	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Sr Carrier	88.3		40 - 110				03/06/14 12:43	03/17/14 15:53	1
Y Carrier	91.2		40 - 110				03/06/14 12:43	03/17/14 15:53	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Analyte	Result	Qualifier	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.					
			(2σ+/-)	(2σ+/-)					
Total Uranium	0.0438	U	0.09240	0.09247	0.150	pCi/L	03/11/14 09:43	03/12/14 17:40	1

Method Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL IRV
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	TAL IRV
625	Semivolatile Organic Compounds (GC/MS)	EPA	TAL IRV
608 PCB LL	Polychlorinated Biphenyls (PCBs) Low level	40CFR136A	TAL IRV
608 Pesticides	Organochlorine Pesticides Low level	40CFR136A	TAL IRV
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	TAL IRV
300.0	Anions, Ion Chromatography	MCAWW	TAL IRV
314.0	Perchlorate (IC)	EPA	TAL IRV
1613B	Dioxins/Furans, HRGC/HRMS (1613B)	EPA-5	TAL KNX
200.7 Rev 4.4	Metals (ICP)	EPA	TAL IRV
200.8	Metals (ICP/MS)	EPA	TAL IRV
245.1	Mercury (CVAA)	EPA	TAL IRV
1664A	HEM and SGT-HEM	1664A	TAL IRV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL IRV
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
SM 4500 CN E	Cyanide, Total (Low Level)	SM	TAL IRV
SM 4500 F C	Fluoride	SM	TAL IRV
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	TAL SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	TAL SL
903.0	Radium-226 (GFPC)	EPA	TAL SL
904.0	Radium-228 (GFPC)	EPA	TAL SL
905	Strontium-90 (GFPC)	EPA	TAL SL
906.0	Tritium, Total (LSC)	EPA	TAL SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV
Acute FH minnow, EPA/821-R02-012	Bioassay	NONE	SC0127
Chronic Cerio, EPA/821-R02-013	Bioassay	NONE	SC0127
Human Bacteriodales	General Sub Contract Method	NONE	EMSL

Protocol References:

- 1664A = EPA-821-98-002
- 40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
- DOE = U.S. Department of Energy
- EPA = US Environmental Protection Agency
- EPA-5 = EPA-5
- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- NONE = NONE
- SM = "Standard Methods For The Examination Of Water And Wastewater",
- TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

- EMSL = EMSL Analytical, Inc., 200 Rt 130 North, Cinnaminson, NJ 08077
- SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003
- TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022
- TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000
- TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: Outfall010_20140228_Grab

Lab Sample ID: 440-71553-1

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	165917	03/01/14 15:43	TN	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	165919	03/01/14 14:28	TN	TAL IRV
Total/NA	Prep	525.2			1040 mL	1 mL	165963	03/01/14 15:25	EE	TAL IRV
Total/NA	Analysis	525.2		1	1040 mL	1 mL	166178	03/03/14 19:03	CP	TAL IRV
Total/NA	Prep	625			1055 mL	2 mL	166462	03/04/14 12:12	BB	TAL IRV
Total/NA	Analysis	625		1	1055 mL	2 mL	168395	03/12/14 14:04	VS	TAL IRV
Total/NA	Prep	608			1060 mL	2 mL	166337	03/04/14 06:40	AC	TAL IRV
Total/NA	Analysis	608 PCB LL		1	1060 mL	2 mL	167229	03/06/14 20:37	JM	TAL IRV
Total/NA	Prep	608			1060 mL	2 mL	166337	03/04/14 06:40	AC	TAL IRV
Total/NA	Analysis	608 Pesticides		1	1060 mL	2 mL	166771	03/05/14 19:32	KS	TAL IRV
Total/NA	Analysis	218.6		1	10 mL		165608	03/01/14 00:32	QPD	TAL IRV
Total/NA	Analysis	300.0		1	5 mL		165706	02/28/14 23:24	NN	TAL IRV
Total/NA	Analysis	300.0		1	5 mL		165707	02/28/14 23:24	NN	TAL IRV
Total/NA	Analysis	314.0		1	1 mL		168078	03/11/14 17:00	CH	TAL IRV
Total	Prep	1613			1049 mL	20 uL	4065015_P	03/06/14 10:00		TAL KNX
Total	Analysis	1613B		1			4065015	03/17/14 14:54	KBL	TAL KNX
Dissolved	Filtration	FILTRATION			250 mL	250 mL	166031	03/02/14 22:34	SN	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	167768	03/10/14 09:25	ND	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1	25 mL	25 mL	168091	03/10/14 23:18	DP	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	168159	03/11/14 10:42	ND	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1	25 mL	25 mL	168372	03/11/14 18:09	TK	TAL IRV
Dissolved	Filtration	FILTRATION			250 mL	250 mL	166031	03/02/14 22:34	SN	TAL IRV
Dissolved	Prep	200.2			25 mL	25 mL	167775	03/10/14 09:45	ND	TAL IRV
Dissolved	Analysis	200.8		1	25 mL	25 mL	168114	03/10/14 21:40	RC	TAL IRV
Total Recoverable	Prep	200.2			25 mL	25 mL	168209	03/11/14 12:47	ND	TAL IRV
Total Recoverable	Analysis	200.8		1	25 mL	25 mL	168447	03/11/14 20:51	RC	TAL IRV
Dissolved	Filtration	FILTRATION			250 mL	250 mL	166031	03/02/14 22:34	SN	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	167954	03/10/14 16:29	JS1	TAL IRV
Dissolved	Analysis	245.1		1	20 mL	20 mL	168370	03/11/14 18:52	DB	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	168176	03/11/14 11:18	JS1	TAL IRV
Total/NA	Analysis	245.1		1	20 mL	20 mL	168594	03/12/14 13:08	DB	TAL IRV
Total/NA	Prep	1664A			1055 mL	1000 mL	168416	03/12/14 06:09	DA	TAL IRV
Total/NA	Analysis	1664A		1	1055 mL	1000 mL	168460	03/12/14 08:43	DA	TAL IRV
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	167190	03/06/14 15:35	XL	TAL IRV
Total/NA	Analysis	SM 2540D		1	150 mL	1000 mL	166930	03/05/14 19:06	XL	TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	166911	03/05/14 16:59	BT	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1	50 mL	50 mL	166965	03/05/14 22:04	BT	TAL IRV
Total/NA	Analysis	SM 4500 F C		1		25 mL	167873	03/10/14 12:58	KYP	TAL IRV
Total/NA	Prep	Evaporation			184 mL	1.0 g	109795	03/11/14 12:28	BLH	TAL SL
Total/NA	Analysis	900.0		1	184 mL		110776	03/16/14 20:18	MLK	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	108350	03/04/14 15:31	RLS	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		108754	03/05/14 19:24	SMP	TAL SL
Total/NA	Prep	PrecSep-21			955.55 mL	1.0 g	108343	03/04/14 14:21	RLS	TAL SL

TestAmerica Irvine

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Client Sample ID: Outfall010_20140228_Grab

Lab Sample ID: 440-71553-1

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	903.0		1	955.55 mL		112760	03/26/14 06:49	MLK	TAL SL
Total/NA	Prep	PrecSep_0			955.55 mL	1.0 g	108344	03/04/14 14:31	RLS	TAL SL
Total/NA	Analysis	904.0		1	955.55 mL		110545	03/14/14 10:57	RTM	TAL SL
Total/NA	Prep	PrecSep-7			984.52 mL	1.0 g	108916	03/06/14 12:43	RLS	TAL SL
Total/NA	Analysis	905		1	984.52 mL		110775	03/17/14 15:52	RTM	TAL SL
Total/NA	Prep	LSC_Dist_Susp			100.3 mL	1.0 g	111474	03/19/14 07:01	NMN	TAL SL
Total/NA	Analysis	906.0		1	100.3 mL		111974	03/20/14 17:40	MLK	TAL SL
Total/NA	Prep	ExtChrom			499.80 mL	1.0 mL	109757	03/11/14 09:43	MLM	TAL SL
Total/NA	Analysis	A-01-R		1	499.80 mL		110067	03/12/14 17:40	LES	TAL SL
Total/NA	Analysis	Ra226_Ra228		1			113022	03/26/14 00:49	MCF	TAL SL
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	166553	(Start) 02/28/14 19:17 (End) 03/03/14 17:59	SK	TAL IRV
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	166546	(Start) 02/28/14 19:17 (End) 03/03/14 18:04	SK	TAL IRV

Client Sample ID: TB-20140228

Lab Sample ID: 440-71553-2

Date Collected: 02/28/14 12:00

Matrix: Water

Date Received: 02/28/14 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	165917	03/01/14 15:15	TN	TAL IRV
Total/NA	Analysis	624		1	10 mL	10 mL	165919	03/01/14 14:03	TN	TAL IRV

Client Sample ID: BLK

Lab Sample ID: 440-71553-3

Date Collected: 03/03/14 13:47

Matrix: Water

Date Received: 02/28/14 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Evaporation			200 mL	1.0 g	109795	03/11/14 12:28	BLH	TAL SL
Total/NA	Analysis	900.0		1	200 mL		110775	03/17/14 07:29	RTM	TAL SL
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	108350	03/04/14 15:31	RLS	TAL SL
Total/NA	Analysis	901.1		1	1000 mL		108755	03/05/14 19:25	SMP	TAL SL
Total/NA	Prep	PrecSep-21			978.85 mL	1.0 g	108343	03/04/14 14:21	RLS	TAL SL
Total/NA	Analysis	903.0		1	978.85 mL		112760	03/26/14 06:49	MLK	TAL SL
Total/NA	Prep	PrecSep_0			978.85 mL	1.0 g	108344	03/04/14 14:31	RLS	TAL SL
Total/NA	Analysis	904.0		1	978.85 mL		110545	03/14/14 10:57	RTM	TAL SL
Total/NA	Prep	PrecSep-7			976.35 mL	1.0 g	108916	03/06/14 12:43	RLS	TAL SL
Total/NA	Analysis	905		1	976.35 mL		110775	03/17/14 15:53	RTM	TAL SL
Total/NA	Prep	ExtChrom			499.16 mL	1.0 mL	109757	03/11/14 09:43	MLM	TAL SL
Total/NA	Analysis	A-01-R		1	499.16 mL		110076	03/12/14 17:40	LES	TAL SL

TestAmerica Irvine

Lab Chronicle

Client: Haley & Aldrich, Inc.

Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Laboratory References:

EMSL = EMSL Analytical, Inc., 200 Rt 130 North, Cinnaminson, NJ 08077

SC0127 = Aquatic Testing Laboratories, 4350 Transport #107, Ventura, CA 93003

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

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-165917/5

Matrix: Water

Analysis Batch: 165917

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
1,2-Dichlorobenzene	ND		0.50	0.50	ug/L			03/01/14 09:33	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Benzene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Bromoform	ND		1.0	0.25	ug/L			03/01/14 09:33	1
Bromomethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Chlorobenzene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Dibromochloromethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Chloroethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Chloroform	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Chloromethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Bromodichloromethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Methylene Chloride	ND		1.0	0.88	ug/L			03/01/14 09:33	1
Tetrachloroethene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Toluene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Vinyl chloride	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Trichloroethene	ND		0.50	0.25	ug/L			03/01/14 09:33	1
Xylenes, Total	ND		1.0	0.50	ug/L			03/01/14 09:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		03/01/14 09:33	1
Dibromofluoromethane (Surr)	96		76 - 132		03/01/14 09:33	1
Toluene-d8 (Surr)	108		80 - 128		03/01/14 09:33	1

Lab Sample ID: LCS 440-165917/6

Matrix: Water

Analysis Batch: 165917

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	28.1		ug/L		112	70 - 130
1,1,2,2-Tetrachloroethane	25.0	28.8		ug/L		115	63 - 130
1,1,2-Trichloroethane	25.0	27.1		ug/L		108	70 - 130
1,1-Dichloroethane	25.0	25.5		ug/L		102	64 - 130
1,1-Dichloroethene	25.0	29.7		ug/L		119	70 - 130
1,2-Dichlorobenzene	25.0	26.6		ug/L		106	70 - 130

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-165917/6

Matrix: Water

Analysis Batch: 165917

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloroethane	25.0	26.8		ug/L		107	57 - 138
1,2-Dichloropropane	25.0	27.5		ug/L		110	67 - 130
1,3-Dichlorobenzene	25.0	26.8		ug/L		107	70 - 130
1,4-Dichlorobenzene	25.0	26.6		ug/L		106	70 - 130
Benzene	25.0	25.1		ug/L		101	68 - 130
Bromoform	25.0	30.8		ug/L		123	60 - 148
Bromomethane	25.0	28.8		ug/L		115	64 - 139
Carbon tetrachloride	25.0	29.4		ug/L		118	60 - 150
Chlorobenzene	25.0	26.7		ug/L		107	70 - 130
Dibromochloromethane	25.0	29.9		ug/L		120	69 - 145
Chloroethane	25.0	28.0		ug/L		112	64 - 135
Chloroform	25.0	27.1		ug/L		108	70 - 130
Chloromethane	25.0	38.4	LQ	ug/L		154	47 - 140
cis-1,3-Dichloropropene	25.0	28.5		ug/L		114	70 - 133
Bromodichloromethane	25.0	29.4		ug/L		118	70 - 132
Ethylbenzene	25.0	28.6		ug/L		115	70 - 130
Methylene Chloride	25.0	26.7		ug/L		107	52 - 130
Tetrachloroethene	25.0	29.5		ug/L		118	70 - 130
Toluene	25.0	26.7		ug/L		107	70 - 130
trans-1,2-Dichloroethene	25.0	28.2		ug/L		113	70 - 130
trans-1,3-Dichloropropene	25.0	29.4		ug/L		118	70 - 132
Trichlorofluoromethane	25.0	32.7		ug/L		131	60 - 150
Vinyl chloride	25.0	28.6		ug/L		115	59 - 133
Trichloroethene	25.0	27.6		ug/L		110	70 - 130
Xylenes, Total	75.0	86.1		ug/L		115	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132
Toluene-d8 (Surr)	108		80 - 128

Lab Sample ID: 440-70803-A-2 MS

Matrix: Water

Analysis Batch: 165917

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		25.0	26.2		ug/L		105	70 - 130
1,1,1,2-Tetrachloroethane	ND		25.0	27.9		ug/L		112	63 - 130
1,1,1,2-Trichloroethane	ND		25.0	26.2		ug/L		105	70 - 130
1,1-Dichloroethane	ND		25.0	24.1		ug/L		96	65 - 130
1,1-Dichloroethene	ND		25.0	27.9		ug/L		111	70 - 130
1,2-Dichlorobenzene	ND		25.0	26.4		ug/L		106	70 - 130
1,2-Dichloroethane	ND		25.0	26.4		ug/L		106	56 - 146
1,2-Dichloropropane	ND		25.0	27.2		ug/L		109	69 - 130
1,3-Dichlorobenzene	ND		25.0	27.1		ug/L		108	70 - 130
1,4-Dichlorobenzene	ND		25.0	26.8		ug/L		107	70 - 130
Benzene	ND		25.0	24.9		ug/L		100	66 - 130
Bromoform	ND		25.0	30.4		ug/L		122	59 - 150

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-70803-A-2 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 165917

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Bromomethane	ND		25.0	27.0		ug/L		108	62 - 131
Carbon tetrachloride	ND		25.0	29.5		ug/L		118	60 - 150
Chlorobenzene	ND		25.0	26.5		ug/L		106	70 - 130
Dibromochloromethane	ND		25.0	29.5		ug/L		118	70 - 148
Chloroethane	ND		25.0	25.9		ug/L		104	68 - 130
Chloroform	ND		25.0	25.3		ug/L		101	70 - 130
Chloromethane	ND	LQ	25.0	37.8	LM	ug/L		151	39 - 144
cis-1,3-Dichloropropene	ND		25.0	28.1		ug/L		112	70 - 133
Bromodichloromethane	ND		25.0	30.0		ug/L		120	70 - 138
Ethylbenzene	ND		25.0	28.3		ug/L		113	70 - 130
Methylene Chloride	ND		25.0	25.6		ug/L		102	52 - 130
Tetrachloroethene	ND		25.0	28.3		ug/L		113	70 - 137
Toluene	ND		25.0	26.5		ug/L		106	70 - 130
trans-1,2-Dichloroethene	ND		25.0	26.8		ug/L		107	70 - 130
trans-1,3-Dichloropropene	ND		25.0	29.7		ug/L		119	70 - 138
Trichlorofluoromethane	ND		25.0	30.6		ug/L		122	60 - 150
Vinyl chloride	ND		25.0	29.2		ug/L		117	50 - 137
Trichloroethene	ND		25.0	26.9		ug/L		107	70 - 130
Xylenes, Total	ND		75.0	85.2		ug/L		114	70 - 133

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	97		76 - 132
Toluene-d8 (Surr)	108		80 - 128

Lab Sample ID: 440-70803-A-2 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 165917

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
1,1,1-Trichloroethane	ND		25.0	27.0		ug/L		108	70 - 130	3	20
1,1,1,2-Tetrachloroethane	ND		25.0	31.0		ug/L		124	63 - 130	10	30
1,1,2-Trichloroethane	ND		25.0	27.7		ug/L		111	70 - 130	6	25
1,1-Dichloroethane	ND		25.0	24.9		ug/L		100	65 - 130	3	20
1,1-Dichloroethene	ND		25.0	28.9		ug/L		116	70 - 130	4	20
1,2-Dichlorobenzene	ND		25.0	27.1		ug/L		108	70 - 130	3	20
1,2-Dichloroethane	ND		25.0	27.8		ug/L		111	56 - 146	5	20
1,2-Dichloropropane	ND		25.0	28.4		ug/L		113	69 - 130	4	20
1,3-Dichlorobenzene	ND		25.0	26.9		ug/L		108	70 - 130	1	20
1,4-Dichlorobenzene	ND		25.0	26.7		ug/L		107	70 - 130	0	20
Benzene	ND		25.0	25.7		ug/L		103	66 - 130	3	20
Bromoform	ND		25.0	32.3		ug/L		129	59 - 150	6	25
Bromomethane	ND		25.0	28.5		ug/L		114	62 - 131	6	25
Carbon tetrachloride	ND		25.0	30.4		ug/L		121	60 - 150	3	25
Chlorobenzene	ND		25.0	27.0		ug/L		108	70 - 130	2	20
Dibromochloromethane	ND		25.0	30.4		ug/L		122	70 - 148	3	25
Chloroethane	ND		25.0	27.5		ug/L		110	68 - 130	6	25
Chloroform	ND		25.0	26.3		ug/L		105	70 - 130	4	20

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-70803-A-2 MSD

Matrix: Water

Analysis Batch: 165917

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Chloromethane	ND	LQ	25.0	38.7	LM	ug/L		155	39 - 144	2	25
cis-1,3-Dichloropropene	ND		25.0	28.6		ug/L		114	70 - 133	2	20
Bromodichloromethane	ND		25.0	30.8		ug/L		123	70 - 138	3	20
Ethylbenzene	ND		25.0	28.7		ug/L		115	70 - 130	1	20
Methylene Chloride	ND		25.0	26.4		ug/L		106	52 - 130	3	20
Tetrachloroethene	ND		25.0	29.1		ug/L		116	70 - 137	3	20
Toluene	ND		25.0	27.3		ug/L		109	70 - 130	3	20
trans-1,2-Dichloroethene	ND		25.0	28.6		ug/L		114	70 - 130	6	20
trans-1,3-Dichloropropene	ND		25.0	30.4		ug/L		122	70 - 138	2	25
Trichlorofluoromethane	ND		25.0	32.9		ug/L		132	60 - 150	7	25
Vinyl chloride	ND		25.0	29.2		ug/L		117	50 - 137	0	30
Trichloroethene	ND		25.0	27.3		ug/L		109	70 - 130	2	20
Xylenes, Total	ND		75.0	86.0		ug/L		115	70 - 133	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	101		76 - 132
Toluene-d8 (Surr)	108		80 - 128

Lab Sample ID: MB 440-165919/4

Matrix: Water

Analysis Batch: 165919

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Chloroethyl vinyl ether	ND		2.0	1.0	ug/L			03/01/14 08:59	1
Acrolein	ND		5.0	2.5	ug/L			03/01/14 08:59	1
Acrylonitrile	ND		2.0	1.0	ug/L			03/01/14 08:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 128		03/01/14 08:59	1
Dibromofluoromethane (Surr)	108		76 - 132		03/01/14 08:59	1

Lab Sample ID: LCS 440-165919/5

Matrix: Water

Analysis Batch: 165919

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec.
		Result	Qualifier				Limits
2-Chloroethyl vinyl ether	25.0	27.5		ug/L		110	37 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	106		80 - 128
Dibromofluoromethane (Surr)	108		76 - 132

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-71366-D-1 MS

Matrix: Water

Analysis Batch: 165919

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chloroethyl vinyl ether	ND		25.0	25.8		ug/L		103	10 - 140
Surrogate	%Recovery	Qualifier	Limits						
Toluene-d8 (Surr)	108		80 - 128						
Dibromofluoromethane (Surr)	108		76 - 132						

Lab Sample ID: 440-71366-D-1 MSD

Matrix: Water

Analysis Batch: 165919

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Chloroethyl vinyl ether	ND		25.0	27.4		ug/L		110	10 - 140	6	25
Surrogate	%Recovery	Qualifier	Limits								
Toluene-d8 (Surr)	106		80 - 128								
Dibromofluoromethane (Surr)	109		76 - 132								

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-165963/1-A

Matrix: Water

Analysis Batch: 166595

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 165963

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		1.0	0.080	ug/L		03/01/14 15:25	03/04/14 18:20	1
Diazinon	ND		0.25	0.10	ug/L		03/01/14 15:25	03/04/14 18:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,3-Dimethyl-2-nitrobenzene	113		70 - 130				03/01/14 15:25	03/04/14 18:20	1
Perylene-d12	23	LG	70 - 130				03/01/14 15:25	03/04/14 18:20	1
Triphenylphosphate	113		70 - 130				03/01/14 15:25	03/04/14 18:20	1

Lab Sample ID: LCS 440-165963/2-A

Matrix: Water

Analysis Batch: 167239

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 165963

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorpyrifos	5.00	5.82		ug/L		116	70 - 130
Diazinon	5.00	5.55		ug/L		111	70 - 130
Surrogate	%Recovery	Qualifier	Limits				
1,3-Dimethyl-2-nitrobenzene	97		70 - 130				
Perylene-d12	98		70 - 130				
Triphenylphosphate	112		70 - 130				

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 440-165963/3-A

Matrix: Water

Analysis Batch: 167239

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 165963

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorpyrifos	5.00	5.67		ug/L		113	70 - 130	3	30
Diazinon	5.00	4.21		ug/L		84	70 - 130	27	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,3-Dimethyl-2-nitrobenzene	96		70 - 130
Perylene-d12	98		70 - 130
Triphenylphosphate	105		70 - 130

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-166462/1-A

Matrix: Water

Analysis Batch: 168395

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 166462

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
Acenaphthylene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
Anthracene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
Benzidine	ND		10.0	5.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
Benzo[a]anthracene	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
Benzo[b]fluoranthene	ND		2.00	1.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
Benzo[k]fluoranthene	ND		0.500	0.250	ug/L		03/04/14 12:12	03/11/14 23:23	1
Benzo[a]pyrene	ND		2.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
Bis(2-chloroethoxy)methane	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
Bis(2-chloroethyl)ether	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
Bis(2-ethylhexyl) phthalate	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
4-Bromophenyl phenyl ether	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
Butyl benzyl phthalate	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
4-Chloro-3-methylphenol	ND		2.00	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
2-Chloronaphthalene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
2-Chlorophenol	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
4-Chlorophenyl phenyl ether	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
Chrysene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
Dibenz(a,h)anthracene	ND		0.500	0.250	ug/L		03/04/14 12:12	03/11/14 23:23	1
Di-n-butyl phthalate	ND		2.00	1.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
1,2-Dichlorobenzene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
1,3-Dichlorobenzene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
1,4-Dichlorobenzene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
3,3'-Dichlorobenzidine	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
2,4-Dichlorophenol	ND		2.00	1.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
Diethyl phthalate	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
2,4-Dimethylphenol	ND		2.00	1.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
Dimethyl phthalate	ND		0.500	0.250	ug/L		03/04/14 12:12	03/11/14 23:23	1
4,6-Dinitro-2-methylphenol	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
2,4-Dinitrophenol	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
2,4-Dinitrotoluene	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
2,6-Dinitrotoluene	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-166462/1-A

Matrix: Water

Analysis Batch: 168395

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 166462

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
Fluoranthene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
Fluorene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
Hexachlorobenzene	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
Hexachlorobutadiene	ND		2.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
Hexachloroethane	ND		3.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
Hexachlorocyclopentadiene	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
Indeno[1,2,3-cd]pyrene	ND		2.00	1.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
Isophorone	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
Naphthalene	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
Nitrobenzene	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
2-Nitrophenol	ND		2.00	1.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
4-Nitrophenol	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
N-Nitrosodimethylamine	ND		2.00	1.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
N-Nitrosodiphenylamine	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
N-Nitrosodi-n-propylamine	ND		2.00	1.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
Pentachlorophenol	ND		2.00	1.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
Phenanthrene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
Phenol	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
Pyrene	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1
1,2,4-Trichlorobenzene	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
2,4,6-Trichlorophenol	ND		1.00	0.500	ug/L		03/04/14 12:12	03/11/14 23:23	1
Benzo[g,h,i]perylene	ND		5.00	2.00	ug/L		03/04/14 12:12	03/11/14 23:23	1
bis (2-chloroisopropyl) ether	ND		0.500	0.200	ug/L		03/04/14 12:12	03/11/14 23:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	67		50 - 120	03/04/14 12:12	03/11/14 23:23	1
2-Fluorophenol	61		30 - 120	03/04/14 12:12	03/11/14 23:23	1
2,4,6-Tribromophenol	74		40 - 120	03/04/14 12:12	03/11/14 23:23	1
Nitrobenzene-d5	64		45 - 120	03/04/14 12:12	03/11/14 23:23	1
Terphenyl-d14	96		37 - 144	03/04/14 12:12	03/11/14 23:23	1
Phenol-d6	69		35 - 120	03/04/14 12:12	03/11/14 23:23	1

Lab Sample ID: LCS 440-166462/2-A

Matrix: Water

Analysis Batch: 168395

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166462

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	10.0	7.866		ug/L		79	47 - 145
Acenaphthylene	10.0	8.448		ug/L		84	33 - 145
Anthracene	10.0	8.657		ug/L		87	27 - 133
Benzidine	10.0	ND		ug/L		34	20 - 168
Benzo[a]anthracene	10.0	9.189		ug/L		92	33 - 143
Benzo[b]fluoranthene	10.0	8.296		ug/L		83	24 - 159
Benzo[k]fluoranthene	10.0	8.389		ug/L		84	11 - 162
Benzo[a]pyrene	10.0	8.478		ug/L		85	17 - 163

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-166462/2-A

Matrix: Water

Analysis Batch: 168395

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166462

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-chloroethoxy)methane	10.0	8.360		ug/L		84	33 - 184
Bis(2-chloroethyl)ether	10.0	7.211		ug/L		72	12 - 158
Bis(2-ethylhexyl) phthalate	10.0	8.670		ug/L		87	8 - 158
4-Bromophenyl phenyl ether	10.0	8.504		ug/L		85	53 - 127
Butyl benzyl phthalate	10.0	9.057		ug/L		91	10 - 152
4-Chloro-3-methylphenol	10.0	8.916		ug/L		89	22 - 147
2-Chloronaphthalene	10.0	7.146		ug/L		71	52 - 126
2-Chlorophenol	10.0	7.262		ug/L		73	23 - 134
4-Chlorophenyl phenyl ether	10.0	7.865		ug/L		79	25 - 158
Chrysene	10.0	8.357		ug/L		84	17 - 168
Dibenz(a,h)anthracene	10.0	8.719		ug/L		87	10 - 227
Di-n-butyl phthalate	10.0	9.608		ug/L		96	1 - 118
1,2-Dichlorobenzene	10.0	6.331		ug/L		63	32 - 129
1,3-Dichlorobenzene	10.0	6.097		ug/L		61	10 - 172
1,4-Dichlorobenzene	10.0	6.223		ug/L		62	20 - 124
3,3'-Dichlorobenzidine	10.0	6.630		ug/L		66	10 - 262
2,4-Dichlorophenol	10.0	8.036		ug/L		80	39 - 135
Diethyl phthalate	10.0	9.085		ug/L		91	10 - 114
2,4-Dimethylphenol	10.0	7.996		ug/L		80	32 - 119
Dimethyl phthalate	10.0	8.631		ug/L		86	10 - 112
4,6-Dinitro-2-methylphenol	10.0	8.615		ug/L		86	10 - 181
2,4-Dinitrophenol	10.0	7.779		ug/L		78	10 - 191
2,4-Dinitrotoluene	10.0	8.670		ug/L		87	39 - 139
2,6-Dinitrotoluene	10.0	8.500		ug/L		85	50 - 158
Di-n-octyl phthalate	10.0	9.972		ug/L		100	4 - 146
1,2-Diphenylhydrazine(as Azobenzene)	10.0	8.487		ug/L		85	59 - 124
Fluoranthene	10.0	8.962		ug/L		90	26 - 137
Fluorene	10.0	8.353		ug/L		84	59 - 121
Hexachlorobenzene	10.0	7.948		ug/L		79	10 - 152
Hexachlorobutadiene	10.0	5.761		ug/L		58	24 - 116
Hexachloroethane	10.0	5.710		ug/L		57	33 - 75
Hexachlorocyclopentadiene	10.0	3.701	J,DX	ug/L		37	10 - 70
Indeno[1,2,3-cd]pyrene	10.0	9.222		ug/L		92	10 - 171
Isophorone	10.0	8.457		ug/L		85	21 - 196
Naphthalene	10.0	7.038		ug/L		70	21 - 133
Nitrobenzene	10.0	7.459		ug/L		75	35 - 180
2-Nitrophenol	10.0	7.304		ug/L		73	29 - 182
4-Nitrophenol	10.0	8.059		ug/L		81	10 - 132
N-Nitrosodimethylamine	10.0	7.777		ug/L		78	46 - 104
N-Nitrosodiphenylamine	10.0	8.647		ug/L		86	57 - 106
N-Nitrosodi-n-propylamine	10.0	8.189		ug/L		82	10 - 230
Pentachlorophenol	10.0	9.792		ug/L		98	14 - 176
Phenanthrene	10.0	8.490		ug/L		85	54 - 120
Phenol	10.0	7.736		ug/L		77	5 - 112
Pyrene	10.0	9.378		ug/L		94	52 - 115
1,2,4-Trichlorobenzene	10.0	6.409		ug/L		64	44 - 142
2,4,6-Trichlorophenol	10.0	8.332		ug/L		83	37 - 144

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-166462/2-A

Matrix: Water

Analysis Batch: 168395

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166462

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[g,h,i]perylene	10.0	9.024		ug/L		90	10 - 219
bis (2-chloroisopropyl) ether	10.0	7.114		ug/L		71	36 - 166

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	74		50 - 120
2-Fluorophenol	71		30 - 120
2,4,6-Tribromophenol	88		40 - 120
Nitrobenzene-d5	74		45 - 120
Terphenyl-d14	91		37 - 144
Phenol-d6	75		35 - 120

Lab Sample ID: LCSD 440-166462/3-A

Matrix: Water

Analysis Batch: 168395

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 166462

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	10.0	6.872		ug/L		69	47 - 145	13	20
Acenaphthylene	10.0	7.449		ug/L		74	33 - 145	13	20
Anthracene	10.0	7.982		ug/L		80	27 - 133	8	20
Benzidine	10.0	ND		ug/L		45	20 - 168	27	35
Benzo[a]anthracene	10.0	8.458		ug/L		85	33 - 143	8	20
Benzo[b]fluoranthene	10.0	7.994		ug/L		80	24 - 159	4	25
Benzo[k]fluoranthene	10.0	8.062		ug/L		81	11 - 162	4	20
Benzo[a]pyrene	10.0	7.972		ug/L		80	17 - 163	6	25
Bis(2-chloroethoxy)methane	10.0	7.752		ug/L		78	33 - 184	8	20
Bis(2-chloroethyl)ether	10.0	6.201		ug/L		62	12 - 158	15	20
Bis(2-ethylhexyl) phthalate	10.0	8.193		ug/L		82	8 - 158	6	20
4-Bromophenyl phenyl ether	10.0	7.680		ug/L		77	53 - 127	10	25
Butyl benzyl phthalate	10.0	8.526		ug/L		85	10 - 152	6	20
4-Chloro-3-methylphenol	10.0	7.605		ug/L		76	22 - 147	16	25
2-Chloronaphthalene	10.0	6.154		ug/L		62	52 - 126	15	20
2-Chlorophenol	10.0	6.298		ug/L		63	23 - 134	14	25
4-Chlorophenyl phenyl ether	10.0	7.076		ug/L		71	25 - 158	11	20
Chrysene	10.0	7.369		ug/L		74	17 - 168	13	20
Dibenz(a,h)anthracene	10.0	6.752		ug/L		68	10 - 227	25	25
Di-n-butyl phthalate	10.0	9.032		ug/L		90	1 - 118	6	20
1,2-Dichlorobenzene	10.0	5.360		ug/L		54	32 - 129	17	25
1,3-Dichlorobenzene	10.0	5.215		ug/L		52	10 - 172	16	25
1,4-Dichlorobenzene	10.0	5.287		ug/L		53	20 - 124	16	25
3,3'-Dichlorobenzidine	10.0	4.788	J,DX BA	ug/L		48	10 - 262	32	25
2,4-Dichlorophenol	10.0	7.122		ug/L		71	39 - 135	12	20
Diethyl phthalate	10.0	8.433		ug/L		84	10 - 114	7	30
2,4-Dimethylphenol	10.0	6.925		ug/L		69	32 - 119	14	25
Dimethyl phthalate	10.0	7.860		ug/L		79	10 - 112	9	30
4,6-Dinitro-2-methylphenol	10.0	7.157		ug/L		72	10 - 181	18	25
2,4-Dinitrophenol	10.0	7.483		ug/L		75	10 - 191	4	25
2,4-Dinitrotoluene	10.0	7.962		ug/L		80	39 - 139	9	20
2,6-Dinitrotoluene	10.0	7.806		ug/L		78	50 - 158	9	20

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 440-166462/3-A

Matrix: Water

Analysis Batch: 168395

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 166462

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Di-n-octyl phthalate	10.0	8.907		ug/L		89	4 - 146	11	20
1,2-Diphenylhydrazine(as Azobenzene)	10.0	7.691		ug/L		77	59 - 124	10	25
Fluoranthene	10.0	8.739		ug/L		87	26 - 137	3	20
Fluorene	10.0	7.455		ug/L		75	59 - 121	11	20
Hexachlorobenzene	10.0	7.133		ug/L		71	10 - 152	11	20
Hexachlorobutadiene	10.0	5.028		ug/L		50	24 - 116	14	25
Hexachloroethane	10.0	4.975		ug/L		50	33 - 75	14	25
Hexachlorocyclopentadiene	10.0	3.599	J,DX	ug/L		36	10 - 70	3	30
Indeno[1,2,3-cd]pyrene	10.0	7.354		ug/L		74	10 - 171	23	25
Isophorone	10.0	7.449		ug/L		74	21 - 196	13	20
Naphthalene	10.0	6.093		ug/L		61	21 - 133	14	20
Nitrobenzene	10.0	6.516		ug/L		65	35 - 180	13	25
2-Nitrophenol	10.0	6.529		ug/L		65	29 - 182	11	25
4-Nitrophenol	10.0	7.315		ug/L		73	10 - 132	10	30
N-Nitrosodimethylamine	10.0	6.677		ug/L		67	46 - 104	15	35
N-Nitrosodiphenylamine	10.0	7.514		ug/L		75	57 - 106	14	20
N-Nitrosodi-n-propylamine	10.0	7.335		ug/L		73	10 - 230	11	20
Pentachlorophenol	10.0	8.398		ug/L		84	14 - 176	15	25
Phenanthrene	10.0	7.818		ug/L		78	54 - 120	8	20
Phenol	10.0	6.949		ug/L		69	5 - 112	11	25
Pyrene	10.0	7.646		ug/L		76	52 - 115	20	25
1,2,4-Trichlorobenzene	10.0	5.568		ug/L		56	44 - 142	14	20
2,4,6-Trichlorophenol	10.0	7.084		ug/L		71	37 - 144	16	30
Benzo[g,h,i]perylene	10.0	7.052		ug/L		71	10 - 219	25	25
bis (2-chloroisopropyl) ether	10.0	6.173		ug/L		62	36 - 166	14	20

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	65		50 - 120
2-Fluorophenol	62		30 - 120
2,4,6-Tribromophenol	80		40 - 120
Nitrobenzene-d5	67		45 - 120
Terphenyl-d14	78		37 - 144
Phenol-d6	67		35 - 120

Method: 608 PCB LL - Polychlorinated Biphenyls (PCBs) Low level

Lab Sample ID: MB 440-166337/1-A

Matrix: Water

Analysis Batch: 167229

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 166337

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor 1016	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1221	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1232	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1242	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1248	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1254	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 608 PCB LL - Polychlorinated Biphenyls (PCBs) Low level (Continued)

Lab Sample ID: MB 440-166337/1-A
Matrix: Water
Analysis Batch: 167229

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 166337

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1260	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1

Surrogate	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	107		45 - 120	03/04/14 06:40	03/06/14 16:10	1

Lab Sample ID: LCS 440-166337/6-A
Matrix: Water
Analysis Batch: 167229

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 166337

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	2.00	1.70		ug/L		85	50 - 115
Aroclor 1260	2.00	1.85		ug/L		93	60 - 120

Surrogate	%Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	112		45 - 120

Lab Sample ID: LCSD 440-166337/7-A
Matrix: Water
Analysis Batch: 167229

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 166337

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	2.00	1.75		ug/L		88	50 - 115	3	30
Aroclor 1260	2.00	1.85		ug/L		93	60 - 120	0	25

Surrogate	%Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	111		45 - 120

Method: 608 Pesticides - Organochlorine Pesticides Low level

Lab Sample ID: MB 440-166337/1-A
Matrix: Water
Analysis Batch: 166771

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 166337

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0050	0.0015	ug/L		03/04/14 06:40	03/05/14 16:46	1
alpha-BHC	ND		0.0050	0.0025	ug/L		03/04/14 06:40	03/05/14 16:46	1
beta-BHC	ND		0.010	0.0040	ug/L		03/04/14 06:40	03/05/14 16:46	1
Chlordane (technical)	ND		0.10	0.080	ug/L		03/04/14 06:40	03/05/14 16:46	1
delta-BHC	ND		0.0050	0.0035	ug/L		03/04/14 06:40	03/05/14 16:46	1
Dieldrin	ND		0.0050	0.0020	ug/L		03/04/14 06:40	03/05/14 16:46	1
Endosulfan I	ND		0.0050	0.0030	ug/L		03/04/14 06:40	03/05/14 16:46	1
Endosulfan II	ND		0.0050	0.0020	ug/L		03/04/14 06:40	03/05/14 16:46	1
Endosulfan sulfate	ND		0.010	0.0030	ug/L		03/04/14 06:40	03/05/14 16:46	1
Endrin	ND		0.0050	0.0020	ug/L		03/04/14 06:40	03/05/14 16:46	1
Endrin aldehyde	ND		0.010	0.0020	ug/L		03/04/14 06:40	03/05/14 16:46	1
gamma-BHC (Lindane)	ND		0.010	0.0030	ug/L		03/04/14 06:40	03/05/14 16:46	1
Heptachlor	ND		0.010	0.0030	ug/L		03/04/14 06:40	03/05/14 16:46	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 608 Pesticides - Organochlorine Pesticides Low level (Continued)

Lab Sample ID: MB 440-166337/1-A

Matrix: Water

Analysis Batch: 166771

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 166337

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	ND		0.0050	0.0025	ug/L		03/04/14 06:40	03/05/14 16:46	1
Toxaphene	ND		0.50	0.25	ug/L		03/04/14 06:40	03/05/14 16:46	1
4,4'-DDD	ND		0.0050	0.0040	ug/L		03/04/14 06:40	03/05/14 16:46	1
4,4'-DDE	ND		0.0050	0.0030	ug/L		03/04/14 06:40	03/05/14 16:46	1
4,4'-DDT	ND		0.010	0.0040	ug/L		03/04/14 06:40	03/05/14 16:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	73		35 - 115	03/04/14 06:40	03/05/14 16:46	1

Lab Sample ID: LCS 440-166337/2-A

Matrix: Water

Analysis Batch: 166771

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166337

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.250	0.148		ug/L		59	40 - 115
alpha-BHC	0.250	0.170		ug/L		68	45 - 115
beta-BHC	0.250	0.158		ug/L		63	55 - 115
delta-BHC	0.250	0.196		ug/L		78	55 - 115
Dieldrin	0.250	0.187		ug/L		75	55 - 115
Endosulfan I	0.250	0.181		ug/L		72	55 - 115
Endosulfan II	0.250	0.190		ug/L		76	55 - 120
Endosulfan sulfate	0.250	0.194		ug/L		78	60 - 120
Endrin	0.250	0.193		ug/L		77	55 - 115
Endrin aldehyde	0.250	0.208		ug/L		83	50 - 120
gamma-BHC (Lindane)	0.250	0.168		ug/L		67	45 - 115
Heptachlor	0.250	0.176		ug/L		70	45 - 115
Heptachlor epoxide	0.250	0.179		ug/L		72	55 - 115
4,4'-DDD	0.250	0.188		ug/L		75	55 - 120
4,4'-DDE	0.250	0.180		ug/L		72	50 - 120
4,4'-DDT	0.250	0.206		ug/L		83	55 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	70		35 - 115

Lab Sample ID: LCSD 440-166337/3-A

Matrix: Water

Analysis Batch: 166771

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 166337

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.250	0.126		ug/L		51	40 - 115	16	30
alpha-BHC	0.250	0.139		ug/L		56	45 - 115	20	30
beta-BHC	0.250	0.149		ug/L		60	55 - 115	6	30
delta-BHC	0.250	0.184		ug/L		73	55 - 115	6	30
Dieldrin	0.250	0.177		ug/L		71	55 - 115	5	30
Endosulfan I	0.250	0.169		ug/L		68	55 - 115	7	30
Endosulfan II	0.250	0.184		ug/L		74	55 - 120	3	30
Endosulfan sulfate	0.250	0.191		ug/L		76	60 - 120	2	30
Endrin	0.250	0.183		ug/L		73	55 - 115	5	30

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 608 Pesticides - Organochlorine Pesticides Low level (Continued)

Lab Sample ID: LCSD 440-166337/3-A

Matrix: Water

Analysis Batch: 166771

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 166337

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Endrin aldehyde	0.250	0.203		ug/L		81	50 - 120	3	30
gamma-BHC (Lindane)	0.250	0.145		ug/L		58	45 - 115	14	30
Heptachlor	0.250	0.150		ug/L		60	45 - 115	16	30
Heptachlor epoxide	0.250	0.166		ug/L		66	55 - 115	8	30
4,4'-DDD	0.250	0.182		ug/L		73	55 - 120	3	30
4,4'-DDE	0.250	0.172		ug/L		69	50 - 120	5	30
4,4'-DDT	0.250	0.203		ug/L		81	55 - 120	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Tetrachloro-m-xylene	54		35 - 115

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 440-165608/3

Matrix: Water

Analysis Batch: 165608

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		1.0	0.25	ug/L			02/28/14 18:08	1

Lab Sample ID: LCS 440-165608/2

Matrix: Water

Analysis Batch: 165608

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	50.0	50.5		ug/L		101	90 - 110

Lab Sample ID: 440-71530-R-1 MS

Matrix: Water

Analysis Batch: 165608

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium, hexavalent	0.39	J,DX	50.0	51.6		ug/L		102	90 - 110

Lab Sample ID: 440-71530-R-1 MSD

Matrix: Water

Analysis Batch: 165608

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chromium, hexavalent	0.39	J,DX	50.0	51.9		ug/L		103	90 - 110	1	10

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-165706/4
Matrix: Water
Analysis Batch: 165706

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.15	0.070	mg/L			02/28/14 12:19	1

Lab Sample ID: MB 440-165707/4
Matrix: Water
Analysis Batch: 165707

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.25	mg/L			02/28/14 12:19	1
Sulfate	ND		0.50	0.25	mg/L			02/28/14 12:19	1

Lab Sample ID: LCS 440-165707/6
Matrix: Water
Analysis Batch: 165707

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.67		mg/L		93	90 - 110
Sulfate	5.00	4.84		mg/L		97	90 - 110

Lab Sample ID: 440-71406-G-15 MS
Matrix: Water
Analysis Batch: 165707

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	83		100	155	LN	mg/L		72	80 - 120
Sulfate	430		100	480	BB	mg/L		52	80 - 120

Lab Sample ID: 440-71406-G-15 MSD
Matrix: Water
Analysis Batch: 165707

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	83		100	149	LN	mg/L		66	80 - 120	5	20
Sulfate	430		100	472	BB	mg/L		44	80 - 120	2	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-168078/3
Matrix: Water
Analysis Batch: 168078

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			03/11/14 09:13	1

Lab Sample ID: LCS 440-168078/2
Matrix: Water
Analysis Batch: 168078

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	27.5		ug/L		110	85 - 115

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MRL 440-168078/5
Matrix: Water
Analysis Batch: 168078

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	4.40		ug/L		110	75 - 125

Lab Sample ID: 440-72600-A-1 MS
Matrix: Water
Analysis Batch: 168078

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	ND		25.0	29.1		ug/L		116	80 - 120

Lab Sample ID: 440-72600-A-1 MSD
Matrix: Water
Analysis Batch: 168078

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	ND		25.0	29.3		ug/L		117	80 - 120	0	20

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B)

Lab Sample ID: H4C06000015B
Matrix: Water
Analysis Batch: 4065015

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 4065015_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000100	0.00000470	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total TCDD	ND		0.0000100	0.00000470	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,7,8-PeCDD	ND		0.0000500	0.00000226	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total PeCDD	ND		0.0000500	0.00000226	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,4,7,8-HxCDD	ND		0.0000500	0.00000167	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,6,7,8-HxCDD	ND		0.0000500	0.00000194	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,7,8,9-HxCDD	ND		0.0000500	0.00000167	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total HxCDD	ND		0.0000500	0.00000167	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,4,6,7,8-HpCDD	ND		0.0000500	0.00000300	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total HpCDD	ND		0.0000500	0.00000300	ug/L		03/06/14 10:00	03/14/14 23:44	1
OCDD	0.00000722	Q J	0.000100	0.00000221	ug/L		03/06/14 10:00	03/14/14 23:44	1
2,3,7,8-TCDF	ND		0.0000100	0.00000345	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total TCDF	ND		0.0000100	0.00000345	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,7,8-PeCDF	ND		0.0000500	0.00000211	ug/L		03/06/14 10:00	03/14/14 23:44	1
2,3,4,7,8-PeCDF	ND		0.0000500	0.00000189	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total PeCDF	ND		0.0000500	0.00000189	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,4,7,8-HxCDF	ND		0.0000500	0.000000940	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,6,7,8-HxCDF	ND		0.0000500	0.000000910	ug/L		03/06/14 10:00	03/14/14 23:44	1
2,3,4,6,7,8-HxCDF	ND		0.0000500	0.000000870	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,7,8,9-HxCDF	ND		0.0000500	0.000000980	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total HxCDF	ND		0.0000500	0.000000870	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,4,6,7,8-HpCDF	ND		0.0000500	0.00000156	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000500	0.00000224	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total HpCDF	ND		0.0000500	0.00000156	ug/L		03/06/14 10:00	03/14/14 23:44	1
OCDF	ND		0.000100	0.00000287	ug/L		03/06/14 10:00	03/14/14 23:44	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

Lab Sample ID: H4C06000015B

Matrix: Water

Analysis Batch: 4065015

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 4065015_P

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
37Cl4-2,3,7,8-TCDD	100		35 - 197	03/06/14 10:00	03/14/14 23:44	1
Internal Standard	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C-2,3,7,8-TCDD	85		25 - 164	03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,7,8-PeCDD	96		25 - 181	03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,4,7,8-HxCDD	93		32 - 141	03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,6,7,8-HxCDD	89		28 - 130	03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,4,6,7,8-HpCDD	87		23 - 140	03/06/14 10:00	03/14/14 23:44	1
13C-OCDD	82		17 - 157	03/06/14 10:00	03/14/14 23:44	1
13C-2,3,7,8-TCDF	81		24 - 169	03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,7,8-PeCDF	90		24 - 185	03/06/14 10:00	03/14/14 23:44	1
13C-2,3,4,7,8-PeCDF	79		21 - 178	03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,4,7,8-HxCDF	81		26 - 152	03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,6,7,8-HxCDF	79		26 - 123	03/06/14 10:00	03/14/14 23:44	1
13C-2,3,4,6,7,8-HxCDF	81		28 - 136	03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,7,8,9-HxCDF	90		29 - 147	03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,4,6,7,8-HpCDF	82		28 - 143	03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,4,7,8,9-HpCDF	77		26 - 138	03/06/14 10:00	03/14/14 23:44	1
13C-OCDF	77		17 - 157	03/06/14 10:00	03/14/14 23:44	1

Lab Sample ID: H4C06000015C

Matrix: Water

Analysis Batch: 4065015

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 4065015_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3,7,8-PeCDD	0.00100	0.000993		ug/L		99	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.000933		ug/L		93	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000955		ug/L		96	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000941		ug/L		94	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.000911		ug/L		91	70 - 140
OCDD	0.00200	0.00184	B	ug/L		92	78 - 144
2,3,7,8-TCDF	0.000200	0.000203		ug/L		102	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.000934		ug/L		93	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000934		ug/L		93	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.000929		ug/L		93	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000945		ug/L		94	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000947		ug/L		95	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.000955		ug/L		95	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.000916		ug/L		92	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000907		ug/L		91	78 - 138
OCDF	0.00200	0.00184		ug/L		92	63 - 170

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	103		31 - 191

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

Lab Sample ID: H4C06000015C
Matrix: Water
Analysis Batch: 4065015

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 4065015_P

<i>Internal Standard</i>	<i>LCS</i> <i>%Recovery</i>	<i>LCS</i> <i>Qualifier</i>	<i>Limits</i>
13C-2,3,7,8-TCDD	86		20 - 175
13C-1,2,3,7,8-PeCDD	101		21 - 227
13C-1,2,3,4,7,8-HxCDD	92		21 - 193
13C-1,2,3,6,7,8-HxCDD	84		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	95		26 - 166
13C-OCDD	97		13 - 199
13C-2,3,7,8-TCDF	84		22 - 152
13C-1,2,3,7,8-PeCDF	96		21 - 192
13C-2,3,4,7,8-PeCDF	89		13 - 328
13C-1,2,3,4,7,8-HxCDF	83		19 - 202
13C-1,2,3,6,7,8-HxCDF	82		21 - 159
13C-2,3,4,6,7,8-HxCDF	84		22 - 176
13C-1,2,3,7,8,9-HxCDF	86		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	86		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	80		20 - 186
13C-OCDF	86		13 - 199

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 440-168159/1-A
Matrix: Water
Analysis Batch: 168352

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 168159

<i>Analyte</i>	<i>MB</i> <i>Result</i>	<i>MB</i> <i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
Aluminum	ND		50	25	ug/L		03/11/14 10:42	03/11/14 16:26	1
Arsenic	ND		10	7.0	ug/L		03/11/14 10:42	03/11/14 16:26	1
Boron	ND		0.050	0.025	mg/L		03/11/14 10:42	03/11/14 16:26	1
Beryllium	ND		2.0	0.90	ug/L		03/11/14 10:42	03/11/14 16:26	1
Chromium	ND		5.0	2.0	ug/L		03/11/14 10:42	03/11/14 16:26	1
Iron	ND		0.040	0.020	mg/L		03/11/14 10:42	03/11/14 16:26	1
Nickel	ND		10	2.0	ug/L		03/11/14 10:42	03/11/14 16:26	1
Vanadium	ND		10	3.0	ug/L		03/11/14 10:42	03/11/14 16:26	1
Zinc	ND		20	9.0	ug/L		03/11/14 10:42	03/11/14 16:26	1
Hardness, as CaCO3	ND		0.33	0.17	mg/L		03/11/14 10:42	03/11/14 16:26	1

Lab Sample ID: LCS 440-168159/2-A
Matrix: Water
Analysis Batch: 168352

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 168159

<i>Analyte</i>	<i>Spike</i> <i>Added</i>	<i>LCS</i> <i>Result</i>	<i>LCS</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> <i>Limits</i>
Aluminum	500	481		ug/L		96	85 - 115
Arsenic	500	488		ug/L		98	85 - 115
Boron	0.500	0.483		mg/L		97	85 - 115
Beryllium	500	508		ug/L		102	85 - 115
Chromium	500	487		ug/L		97	85 - 115
Iron	0.500	0.515		mg/L		103	85 - 115
Nickel	500	508		ug/L		102	85 - 115
Vanadium	500	509		ug/L		102	85 - 115

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 440-168159/2-A
Matrix: Water
Analysis Batch: 168352

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 168159

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	500	500		ug/L		100	85 - 115

Lab Sample ID: 440-71553-1 MS
Matrix: Water
Analysis Batch: 168372

Client Sample ID: Outfall010_20140228_Grab
Prep Type: Total Recoverable
Prep Batch: 168159

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	6100		500	9040	BB	ug/L		586	70 - 130
Arsenic	ND		500	488		ug/L		98	70 - 130
Boron	0.097		0.500	0.600		mg/L		101	70 - 130
Beryllium	1.2	J,DX	500	508		ug/L		101	70 - 130
Chromium	9.7		500	504		ug/L		99	70 - 130
Iron	7.8		0.500	8.82	BB	mg/L		206	70 - 130
Nickel	7.9	J,DX	500	485		ug/L		95	70 - 130
Vanadium	17		500	531		ug/L		103	70 - 130
Zinc	62		500	562		ug/L		100	70 - 130

Lab Sample ID: 440-71553-1 MSD
Matrix: Water
Analysis Batch: 168372

Client Sample ID: Outfall010_20140228_Grab
Prep Type: Total Recoverable
Prep Batch: 168159

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	6100		500	8710	BB	ug/L		520	70 - 130	4	20
Arsenic	ND		500	488		ug/L		98	70 - 130	0	20
Boron	0.097		0.500	0.603		mg/L		101	70 - 130	0	20
Beryllium	1.2	J,DX	500	508		ug/L		101	70 - 130	0	20
Chromium	9.7		500	503		ug/L		99	70 - 130	0	20
Iron	7.8		0.500	8.38	BB	mg/L		120	70 - 130	5	20
Nickel	7.9	J,DX	500	484		ug/L		95	70 - 130	0	20
Vanadium	17		500	528		ug/L		102	70 - 130	1	20
Zinc	62		500	558		ug/L		99	70 - 130	1	20

Lab Sample ID: MB 440-166031/1-B
Matrix: Water
Analysis Batch: 168091

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 167768

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		50	25	ug/L		03/10/14 09:25	03/10/14 22:55	1
Arsenic	ND		10	7.0	ug/L		03/10/14 09:25	03/10/14 22:55	1
Boron	ND		0.050	0.025	mg/L		03/10/14 09:25	03/10/14 22:55	1
Beryllium	ND		2.0	0.90	ug/L		03/10/14 09:25	03/10/14 22:55	1
Chromium	ND		5.0	2.0	ug/L		03/10/14 09:25	03/10/14 22:55	1
Iron	ND		0.040	0.020	mg/L		03/10/14 09:25	03/10/14 22:55	1
Nickel	ND		10	2.0	ug/L		03/10/14 09:25	03/10/14 22:55	1
Vanadium	ND		10	3.0	ug/L		03/10/14 09:25	03/10/14 22:55	1
Zinc	16.4	J,DX	20	9.0	ug/L		03/10/14 09:25	03/10/14 22:55	1
Hardness, as CaCO3	0.176	J,DX	0.33	0.17	mg/L		03/10/14 09:25	03/10/14 22:55	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 440-166031/2-B

Matrix: Water

Analysis Batch: 168091

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 167768

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	500	444		ug/L		89	85 - 115
Arsenic	500	491		ug/L		98	85 - 115
Boron	0.500	0.469		mg/L		94	85 - 115
Beryllium	500	487		ug/L		97	85 - 115
Chromium	500	479		ug/L		96	85 - 115
Iron	0.500	0.490		mg/L		98	85 - 115
Nickel	500	471		ug/L		94	85 - 115
Vanadium	500	493		ug/L		99	85 - 115
Zinc	500	487		ug/L		97	85 - 115

Lab Sample ID: 440-71673-F-1-C MS

Matrix: Water

Analysis Batch: 168091

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 167768

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	57	QP	500	541		ug/L		97	70 - 130
Arsenic	ND	QP	500	511		ug/L		102	70 - 130
Boron	0.065	QP	0.500	0.556		mg/L		98	70 - 130
Beryllium	ND	QP	500	508		ug/L		102	70 - 130
Chromium	ND	QP	500	496		ug/L		99	70 - 130
Iron	0.066	QP	0.500	0.568		mg/L		100	70 - 130
Nickel	2.4	J,DX QP	500	482		ug/L		96	70 - 130
Vanadium	ND	QP	500	515		ug/L		103	70 - 130
Zinc	10	J,DX MB QP	500	504		ug/L		99	70 - 130

Lab Sample ID: 440-71673-F-1-D MSD

Matrix: Water

Analysis Batch: 168091

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Prep Batch: 167768

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Aluminum	57	QP	500	554		ug/L		99	70 - 130	2	20
Arsenic	ND	QP	500	518		ug/L		104	70 - 130	1	20
Boron	0.065	QP	0.500	0.561		mg/L		99	70 - 130	1	20
Beryllium	ND	QP	500	518		ug/L		104	70 - 130	2	20
Chromium	ND	QP	500	500		ug/L		100	70 - 130	1	20
Iron	0.066	QP	0.500	0.580		mg/L		103	70 - 130	2	20
Nickel	2.4	J,DX QP	500	489		ug/L		97	70 - 130	1	20
Vanadium	ND	QP	500	521		ug/L		104	70 - 130	1	20
Zinc	10	J,DX MB QP	500	509		ug/L		100	70 - 130	1	20

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-168209/1-A
Matrix: Water
Analysis Batch: 168447

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 168209

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		03/11/14 12:47	03/11/14 20:07	1
Copper	ND		2.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:07	1
Lead	ND		1.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:07	1
Antimony	ND		2.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:07	1
Selenium	ND		2.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:07	1
Thallium	ND		1.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:07	1
Silver	ND		1.0	0.50	ug/L		03/11/14 12:47	03/11/14 20:07	1

Lab Sample ID: LCS 440-168209/2-A
Matrix: Water
Analysis Batch: 168447

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 168209

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	81.5		ug/L		102	85 - 115
Copper	80.0	80.8		ug/L		101	85 - 115
Lead	80.0	84.2		ug/L		105	85 - 115
Antimony	80.0	83.3		ug/L		104	85 - 115
Selenium	80.0	84.7		ug/L		106	85 - 115
Thallium	80.0	83.8		ug/L		105	85 - 115
Silver	80.0	81.8		ug/L		102	85 - 115

Lab Sample ID: 440-71553-1 MS
Matrix: Water
Analysis Batch: 168447

Client Sample ID: Outfall010_20140228_Grab
Prep Type: Total Recoverable
Prep Batch: 168209

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND		80.0	80.0		ug/L		100	70 - 130
Copper	12		80.0	85.7		ug/L		92	70 - 130
Lead	5.6		80.0	88.7		ug/L		104	70 - 130
Antimony	0.70	J,DX	80.0	68.2		ug/L		84	70 - 130
Selenium	ND		80.0	79.1		ug/L		99	70 - 130
Thallium	ND		80.0	81.6		ug/L		102	70 - 130
Silver	ND		80.0	78.8		ug/L		99	70 - 130

Lab Sample ID: 440-71553-1 MSD
Matrix: Water
Analysis Batch: 168447

Client Sample ID: Outfall010_20140228_Grab
Prep Type: Total Recoverable
Prep Batch: 168209

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND		80.0	79.7		ug/L		100	70 - 130	0	20
Copper	12		80.0	87.2		ug/L		94	70 - 130	2	20
Lead	5.6		80.0	88.0		ug/L		103	70 - 130	1	20
Antimony	0.70	J,DX	80.0	68.1		ug/L		84	70 - 130	0	20
Selenium	ND		80.0	79.2		ug/L		99	70 - 130	0	20
Thallium	ND		80.0	82.5		ug/L		103	70 - 130	1	20
Silver	ND		80.0	79.2		ug/L		99	70 - 130	0	20

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 440-166031/1-C
Matrix: Water
Analysis Batch: 168114

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 167775

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.25	ug/L		03/10/14 09:45	03/10/14 21:34	1
Copper	ND		2.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:34	1
Lead	ND		1.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:34	1
Antimony	ND		2.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:34	1
Selenium	ND		2.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:34	1
Thallium	ND		1.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:34	1
Silver	ND		1.0	0.50	ug/L		03/10/14 09:45	03/10/14 21:34	1

Lab Sample ID: LCS 440-166031/2-C
Matrix: Water
Analysis Batch: 168114

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 167775

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	74.8		ug/L		94	85 - 115
Copper	80.0	79.5		ug/L		99	85 - 115
Lead	80.0	77.2		ug/L		97	85 - 115
Antimony	80.0	78.0		ug/L		98	85 - 115
Selenium	80.0	80.7		ug/L		101	85 - 115
Thallium	80.0	76.2		ug/L		95	85 - 115
Silver	80.0	81.2		ug/L		102	85 - 115

Lab Sample ID: 440-71553-1 MS
Matrix: Water
Analysis Batch: 168114

Client Sample ID: Outfall010_20140228_Grab
Prep Type: Dissolved
Prep Batch: 167775

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND	QP	80.0	76.0		ug/L		95	70 - 130
Copper	3.6	QP	80.0	84.2		ug/L		101	70 - 130
Lead	ND	QP	80.0	78.2		ug/L		98	70 - 130
Antimony	ND	QP	80.0	79.7		ug/L		100	70 - 130
Selenium	ND	QP	80.0	81.0		ug/L		101	70 - 130
Thallium	ND	QP	80.0	77.3		ug/L		97	70 - 130
Silver	ND	QP	80.0	80.4		ug/L		101	70 - 130

Lab Sample ID: 440-71553-1 MSD
Matrix: Water
Analysis Batch: 168114

Client Sample ID: Outfall010_20140228_Grab
Prep Type: Dissolved
Prep Batch: 167775

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND	QP	80.0	74.9		ug/L		94	70 - 130	1	20
Copper	3.6	QP	80.0	82.2		ug/L		98	70 - 130	2	20
Lead	ND	QP	80.0	78.1		ug/L		98	70 - 130	0	20
Antimony	ND	QP	80.0	79.0		ug/L		99	70 - 130	1	20
Selenium	ND	QP	80.0	80.4		ug/L		100	70 - 130	1	20
Thallium	ND	QP	80.0	78.0		ug/L		97	70 - 130	1	20
Silver	ND	QP	80.0	80.4		ug/L		100	70 - 130	0	20

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-168176/1-A
Matrix: Water
Analysis Batch: 168594

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 168176

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		03/11/14 11:18	03/12/14 12:41	1

Lab Sample ID: LCS 440-168176/2-A
Matrix: Water
Analysis Batch: 168594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 168176

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	8.62		ug/L		108	85 - 115

Lab Sample ID: 440-71456-B-1-E MS
Matrix: Water
Analysis Batch: 168594

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 168176

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	8.23		ug/L		103	70 - 130

Lab Sample ID: 440-71456-B-1-F MSD
Matrix: Water
Analysis Batch: 168594

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 168176

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	8.30		ug/L		104	70 - 130	1	20

Lab Sample ID: MB 440-166031/1-D
Matrix: Water
Analysis Batch: 168370

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 167954

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		03/10/14 16:29	03/11/14 18:40	1

Lab Sample ID: LCS 440-166031/2-D
Matrix: Water
Analysis Batch: 168370

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 167954

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	8.11		ug/L		101	85 - 115

Lab Sample ID: 440-71432-AK-1-E MS
Matrix: Water
Analysis Batch: 168370

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 167954

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	QP	8.00	8.23		ug/L		103	70 - 130

Lab Sample ID: 440-71432-AK-1-F MSD
Matrix: Water
Analysis Batch: 168370

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 167954

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	QP	8.00	8.17		ug/L		102	70 - 130	1	20

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-168416/1-A
 Matrix: Water
 Analysis Batch: 168460

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 168416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		03/12/14 06:09	03/12/14 08:43	1

Lab Sample ID: LCS 440-168416/2-A
 Matrix: Water
 Analysis Batch: 168460

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 168416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	20.0	17.1		mg/L		86	78 - 114

Lab Sample ID: LCSD 440-168416/3-A
 Matrix: Water
 Analysis Batch: 168460

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 168416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM	20.0	16.4		mg/L		82	78 - 114	4	11

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 440-167190/1
 Matrix: Water
 Analysis Batch: 167190

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	5.0	mg/L			03/06/14 15:35	1

Lab Sample ID: LCS 440-167190/2
 Matrix: Water
 Analysis Batch: 167190

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	958		mg/L		96	90 - 110

Lab Sample ID: 440-72002-A-1 DU
 Matrix: Water
 Analysis Batch: 167190

Client Sample ID: Duplicate
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1700		1650		mg/L		0.5	5

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 440-166930/2
 Matrix: Water
 Analysis Batch: 166930

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.50	mg/L			03/05/14 19:06	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 440-166930/1

Matrix: Water

Analysis Batch: 166930

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	1000	1060		mg/L		106	85 - 115

Lab Sample ID: 440-72120-B-1 DU

Matrix: Water

Analysis Batch: 166930

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	25		26.0		mg/L		4	10

Method: SM 4500 CN E - Cyanide, Total (Low Level)

Lab Sample ID: MB 440-166911/1-A

Matrix: Water

Analysis Batch: 166965

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 166911

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	3.0	ug/L		03/05/14 16:59	03/05/14 22:04	1

Lab Sample ID: LCS 440-166911/2-A

Matrix: Water

Analysis Batch: 166965

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166911

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	101		ug/L		101	90 - 110

Lab Sample ID: 440-71837-L-5-B MS

Matrix: Water

Analysis Batch: 166965

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 166911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		100	97.4		ug/L		97	70 - 115

Lab Sample ID: 440-71837-L-5-C MSD

Matrix: Water

Analysis Batch: 166965

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Prep Batch: 166911

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		100	96.1		ug/L		96	70 - 115	1	15

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 440-167873/10

Matrix: Water

Analysis Batch: 167873

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.020	mg/L			03/10/14 10:56	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 440-167873/9

Matrix: Water

Analysis Batch: 167873

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.995	0.939		mg/L		94	90 - 110

Lab Sample ID: 440-71565-D-5 MS

Matrix: Water

Analysis Batch: 167873

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.31		1.00	1.37		mg/L		106	80 - 120

Lab Sample ID: 440-71565-D-5 MSD

Matrix: Water

Analysis Batch: 167873

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.31		1.00	1.37		mg/L		106	80 - 120	0	20

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-109795/1-A

Matrix: Water

Analysis Batch: 110776

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 109795

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.7193	U	0.882	0.886	1.46	pCi/L	03/11/14 12:28	03/16/14 20:17	1
Gross Beta	-0.07036	U	0.523	0.523	0.934	pCi/L	03/11/14 12:28	03/16/14 20:17	1

Lab Sample ID: LCS 160-109795/2-A

Matrix: Water

Analysis Batch: 110776

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 109795

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Alpha	50.1	56.17		7.90	1.58	pCi/L	112	75 - 125

Lab Sample ID: LCSB 160-109795/3-A

Matrix: Water

Analysis Batch: 110776

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 109795

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Gross Beta	97.8	99.03		10.4	0.906	pCi/L	101	75 - 125

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

Lab Sample ID: 440-71432-P-1-J MS

Matrix: Water

Analysis Batch: 110776

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 109795

Analyte	Sample	Sample	Spike Added	MS	MS	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
	Result	Qual		Result	Qual					
Gross Alpha	0.735	U	50.1	56.38		7.70	1.16	pCi/L	112	35 - 150

Lab Sample ID: 440-71432-P-1-K MSBT

Matrix: Water

Analysis Batch: 110776

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 109795

Analyte	Sample	Sample	Spike Added	MSBT	MSBT	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
	Result	Qual		Result	Qual					
Gross Beta	1.87		97.8	101.9		10.7	0.863	pCi/L	102	89 - 143

Lab Sample ID: 440-71432-P-1-I DU

Matrix: Water

Analysis Batch: 110776

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 109795

Analyte	Sample	Sample	DU	DU	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
	Result	Qual		Result					
Gross Alpha	0.735	U	1.226	U	0.896	1.27	pCi/L	0.29	1
Gross Beta	1.87		1.799		0.668	0.844	pCi/L	0.05	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-108350/1-A

Matrix: Water

Analysis Batch: 108749

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 108350

Analyte	MB	MB	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cesium-137	0.3382	U	6.82	6.82	13.1	pCi/L	03/04/14 15:31	03/05/14 19:17	1
Potassium-40	-46.42	U	206	206	242	pCi/L	03/04/14 15:31	03/05/14 19:17	1

Lab Sample ID: LCS 160-108350/2-A

Matrix: Water

Analysis Batch: 108751

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 108350

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Cesium-137	50300	50870		5050	174	pCi/L	101	90 - 111
Cobalt-60	58600	58100		5730	88.8	pCi/L	99	89 - 110

Lab Sample ID: 440-71432-P-1-D DU

Matrix: Water

Analysis Batch: 108757

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 108350

Analyte	Sample	Sample	DU	DU	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
	Result	Qual		Result					
Cesium-137	-0.785	U	2.559	U	5.71	9.99	pCi/L	0.28	1
Potassium-40	-58.4	U	-90.57	U	429	228	pCi/L	0.04	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-108343/1-A
Matrix: Water
Analysis Batch: 112760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 108343

Analyte	MB MB		Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Radium-226	0.01807	U	0.0276	0.0276	0.0476	pCi/L	03/04/14 14:21	03/26/14 06:48	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	Limits						
Ba Carrier	107		40 - 110		03/04/14 14:21	03/26/14 06:48	1		

Lab Sample ID: LCS 160-108343/2-A
Matrix: Water
Analysis Batch: 112760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 108343

Analyte	Spike Added	LCS Result	LCS Qual	Total	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)				
Radium-226	11.2	10.45		1.01	0.0622	pCi/L	93	68 - 137
Carrier	LCS LCS		Limits		Prepared	Analyzed	Dil Fac	
Ba Carrier	%Yield	Qualifier	Limits					
Ba Carrier	106		40 - 110					

Lab Sample ID: 440-71553-3 DU
Matrix: Water
Analysis Batch: 112760

Client Sample ID: BLK
Prep Type: Total/NA
Prep Batch: 108343

Analyte	Sample Sample		DU DU		Total	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)				
Radium-226	0.0759		0.04733	U	0.0422	0.0647	pCi/L	0.34	1
Carrier	DU DU		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	Limits						
Ba Carrier	105		40 - 110						

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-108344/1-A
Matrix: Water
Analysis Batch: 110545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 108344

Analyte	MB MB		Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Radium-228	0.02881	U	0.162	0.162	0.287	pCi/L	03/04/14 14:31	03/14/14 10:56	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	Limits						
Ba Carrier	107		40 - 110		03/04/14 14:31	03/14/14 10:56	1		
Y Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac		
Y Carrier	%Yield	Qualifier	Limits						
Y Carrier	86.3		40 - 110		03/04/14 14:31	03/14/14 10:56	1		

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-108344/2-A
Matrix: Water
Analysis Batch: 110545

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 108344

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits	
Radium-228	3.94	3.581		0.510	0.305	pCi/L	91	56 - 140	
Carrier	%Yield	LCS Qualifier	Limits						
Ba Carrier	106		40 - 110						
Y Carrier	86.3		40 - 110						

Lab Sample ID: 440-71553-3 DU
Matrix: Water
Analysis Batch: 110545

Client Sample ID: BLK
Prep Type: Total/NA
Prep Batch: 108344

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Radium-228	0.224	U	0.5199		0.237	0.337	pCi/L	0.68	1
Carrier	%Yield	DU Qualifier	Limits						
Ba Carrier	105		40 - 110						
Y Carrier	89.2		40 - 110						

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-108916/1-A
Matrix: Water
Analysis Batch: 110775

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 108916

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.2009	U	0.159	0.160	0.252	pCi/L	03/06/14 12:43	03/17/14 15:52	1
Carrier	%Yield	MB Qualifier	Limits						
Sr Carrier	91.1		40 - 110						
Y Carrier	90.4		40 - 110						

Lab Sample ID: LCS 160-108916/2-A
Matrix: Water
Analysis Batch: 110775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 108916

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Strontium-90	9.12	9.942		0.987	0.263	pCi/L	109	90 - 134
Carrier	%Yield	LCS Qualifier	Limits					
Sr Carrier	92.4		40 - 110					
Y Carrier	86.7		40 - 110					

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: 440-71553-3 DU
Matrix: Water
Analysis Batch: 110775

Client Sample ID: BLK
Prep Type: Total/NA
Prep Batch: 108916

Analyte	Sample	Sample	DU	DU	Total	MDC	Unit	Prepared	Analyzed	Dil Fac	RER	Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)							
Strontium-90	0.0228	U	-0.07515	U	0.141	0.266	pCi/L				0.32	1
DU DU												
Carrier	%Yield	Qualifier	Limits									
Sr Carrier	88.5		40 - 110									
Y Carrier	93.6		40 - 110									

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-111474/1-A
Matrix: Water
Analysis Batch: 111974

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 111474

Analyte	MB	MB	Count	Total	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)					
Tritium	86.04	U	160	160	276	pCi/L	03/19/14 07:01	03/20/14 16:04	1

Lab Sample ID: LCS 160-111474/2-A
Matrix: Water
Analysis Batch: 111974

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111474

Analyte	Spike	LCS	LCS	Total	MDC	Unit	%Rec	%Rec.	Limits
	Added	Result	Qual	Uncert. (2σ+/-)					
Tritium	3600	3543		524	279	pCi/L	98	74 - 114	

Lab Sample ID: 440-71553-1 MS
Matrix: Water
Analysis Batch: 111974

Client Sample ID: Outfall010_20140228_Grab
Prep Type: Total/NA
Prep Batch: 111474

Analyte	Sample	Sample	Spike	MS	MS	Total	MDC	Unit	%Rec	%Rec.	Limits
	Result	Qual	Added	Result	Qual	Uncert. (2σ+/-)					
Tritium	6.31	U	3600	3709		537	276	pCi/L	103	67 - 130	

Lab Sample ID: 440-71648-I-1-B DU
Matrix: Water
Analysis Batch: 111974

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 111474

Analyte	Sample	Sample	DU	DU	Total	MDC	Unit	Prepared	Analyzed	Dil Fac	RER	Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)							
Tritium	11.7	U	27.93	U	150	273	pCi/L				0.05	1

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-109757/1-A
Matrix: Water
Analysis Batch: 109997

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 109757

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	-0.04656	U	0.168	0.168	0.269	pCi/L	03/11/14 09:43	03/12/14 17:40	1

Lab Sample ID: LCS 160-109757/2-A
Matrix: Water
Analysis Batch: 110043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 109757

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Uranium-234	12.7	13.83		1.62	0.261	pCi/L	109	84 - 120
Uranium-238	13.0	13.09		1.55	0.202	pCi/L	101	83 - 121

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	80.6		30 - 110

Lab Sample ID: 440-71432-P-1-G DU
Matrix: Water
Analysis Batch: 110056

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 109757

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Total Uranium	0.116	U	0.01477	U	0.1538	0.251	pCi/L	0.36	1

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

GC/MS VOA

Analysis Batch: 165917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-70803-A-2 MS	Matrix Spike	Total/NA	Water	624	
440-70803-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	624	
440-71553-2	TB-20140228	Total/NA	Water	624	
LCS 440-165917/6	Lab Control Sample	Total/NA	Water	624	
MB 440-165917/5	Method Blank	Total/NA	Water	624	

Analysis Batch: 165919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71366-D-1 MS	Matrix Spike	Total/NA	Water	624	
440-71366-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	624	
440-71553-2	TB-20140228	Total/NA	Water	624	
LCS 440-165919/5	Lab Control Sample	Total/NA	Water	624	
MB 440-165919/4	Method Blank	Total/NA	Water	624	

GC/MS Semi VOA

Prep Batch: 165963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	525.2	
LCS 440-165963/2-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 440-165963/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MB 440-165963/1-A	Method Blank	Total/NA	Water	525.2	

Analysis Batch: 166178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	525.2	165963

Prep Batch: 166462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	625	
LCS 440-166462/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 440-166462/3-A	Lab Control Sample Dup	Total/NA	Water	625	
MB 440-166462/1-A	Method Blank	Total/NA	Water	625	

Analysis Batch: 166595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-165963/1-A	Method Blank	Total/NA	Water	525.2	165963

Analysis Batch: 167239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-165963/2-A	Lab Control Sample	Total/NA	Water	525.2	165963
LCSD 440-165963/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	165963

Analysis Batch: 168395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	625	166462
LCS 440-166462/2-A	Lab Control Sample	Total/NA	Water	625	166462
LCSD 440-166462/3-A	Lab Control Sample Dup	Total/NA	Water	625	166462

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

GC/MS Semi VOA (Continued)

Analysis Batch: 168395 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-166462/1-A	Method Blank	Total/NA	Water	625	166462

GC Semi VOA

Prep Batch: 166337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	608	
LCS 440-166337/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-166337/6-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-166337/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCS 440-166337/7-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-166337/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 166771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	608 Pesticides	166337
LCS 440-166337/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	166337
LCS 440-166337/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	166337
MB 440-166337/1-A	Method Blank	Total/NA	Water	608 Pesticides	166337

Analysis Batch: 167229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	608 PCB LL	166337
LCS 440-166337/6-A	Lab Control Sample	Total/NA	Water	608 PCB LL	166337
LCS 440-166337/7-A	Lab Control Sample Dup	Total/NA	Water	608 PCB LL	166337
MB 440-166337/1-A	Method Blank	Total/NA	Water	608 PCB LL	166337

HPLC/IC

Analysis Batch: 165608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71530-R-1 MS	Matrix Spike	Total/NA	Water	218.6	
440-71530-R-1 MSD	Matrix Spike Duplicate	Total/NA	Water	218.6	
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	218.6	
LCS 440-165608/2	Lab Control Sample	Total/NA	Water	218.6	
MB 440-165608/3	Method Blank	Total/NA	Water	218.6	

Analysis Batch: 165706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71406-G-15 MS	Matrix Spike	Total/NA	Water	300.0	
440-71406-G-15 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	300.0	
LCS 440-165706/6	Lab Control Sample	Total/NA	Water	300.0	
MB 440-165706/4	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 165707

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71406-G-15 MS	Matrix Spike	Total/NA	Water	300.0	
440-71406-G-15 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	300.0	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

HPLC/IC (Continued)

Analysis Batch: 165707 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-165707/6	Lab Control Sample	Total/NA	Water	300.0	
MB 440-165707/4	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 168078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	314.0	
440-72600-A-1 MS	Matrix Spike	Total/NA	Water	314.0	
440-72600-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
LCS 440-168078/2	Lab Control Sample	Total/NA	Water	314.0	
MB 440-168078/3	Method Blank	Total/NA	Water	314.0	
MRL 440-168078/5	Lab Control Sample	Total/NA	Water	314.0	

Specialty Organics

Analysis Batch: 4065015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total	Water	1613B	
H4C060000015B	Method Blank	Total	Water	1613B	
H4C060000015C	Lab Control Sample	Total	Water	1613B	

Prep Batch: 4065015_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total	Water	1613	
H4C060000015B	Method Blank	Total	Water	1613	
H4C060000015C	Lab Control Sample	Total	Water	1613	

Metals

Filtration Batch: 166031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Dissolved	Water	FILTRATION	
440-71553-1 MS	Outfall010_20140228_Grab	Dissolved	Water	FILTRATION	
440-71553-1 MSD	Outfall010_20140228_Grab	Dissolved	Water	FILTRATION	
440-71673-F-1-C MS	Matrix Spike	Dissolved	Water	FILTRATION	
440-71673-F-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	FILTRATION	
440-71432-AK-1-E MS	Matrix Spike	Dissolved	Water	FILTRATION	
440-71432-AK-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	FILTRATION	
LCS 440-166031/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-166031/2-C	Lab Control Sample	Dissolved	Water	FILTRATION	
LCS 440-166031/2-D	Lab Control Sample	Dissolved	Water	FILTRATION	
MB 440-166031/1-B	Method Blank	Dissolved	Water	FILTRATION	
MB 440-166031/1-C	Method Blank	Dissolved	Water	FILTRATION	
MB 440-166031/1-D	Method Blank	Dissolved	Water	FILTRATION	

Prep Batch: 167768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Dissolved	Water	200.2	166031
440-71673-F-1-C MS	Matrix Spike	Dissolved	Water	200.2	166031
440-71673-F-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	166031
LCS 440-166031/2-B	Lab Control Sample	Dissolved	Water	200.2	166031

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Metals (Continued)

Prep Batch: 167768 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-166031/1-B	Method Blank	Dissolved	Water	200.2	166031

Prep Batch: 167775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Dissolved	Water	200.2	166031
440-71553-1 MS	Outfall010_20140228_Grab	Dissolved	Water	200.2	166031
440-71553-1 MSD	Outfall010_20140228_Grab	Dissolved	Water	200.2	166031
LCS 440-166031/2-C	Lab Control Sample	Dissolved	Water	200.2	166031
MB 440-166031/1-C	Method Blank	Dissolved	Water	200.2	166031

Prep Batch: 167954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Dissolved	Water	245.1	166031
440-71432-AK-1-E MS	Matrix Spike	Dissolved	Water	245.1	166031
440-71432-AK-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	166031
LCS 440-166031/2-D	Lab Control Sample	Dissolved	Water	245.1	166031
MB 440-166031/1-D	Method Blank	Dissolved	Water	245.1	166031

Analysis Batch: 168091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Dissolved	Water	200.7 Rev 4.4	167768
440-71673-F-1-C MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	167768
440-71673-F-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	167768
LCS 440-166031/2-B	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	167768
MB 440-166031/1-B	Method Blank	Dissolved	Water	200.7 Rev 4.4	167768

Analysis Batch: 168114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Dissolved	Water	200.8	167775
440-71553-1 MS	Outfall010_20140228_Grab	Dissolved	Water	200.8	167775
440-71553-1 MSD	Outfall010_20140228_Grab	Dissolved	Water	200.8	167775
LCS 440-166031/2-C	Lab Control Sample	Dissolved	Water	200.8	167775
MB 440-166031/1-C	Method Blank	Dissolved	Water	200.8	167775

Prep Batch: 168159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total Recoverable	Water	200.2	
440-71553-1 MS	Outfall010_20140228_Grab	Total Recoverable	Water	200.2	
440-71553-1 MSD	Outfall010_20140228_Grab	Total Recoverable	Water	200.2	
LCS 440-168159/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-168159/1-A	Method Blank	Total Recoverable	Water	200.2	

Prep Batch: 168176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71456-B-1-E MS	Matrix Spike	Total/NA	Water	245.1	
440-71456-B-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	245.1	
LCS 440-168176/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-168176/1-A	Method Blank	Total/NA	Water	245.1	

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Metals (Continued)

Prep Batch: 168209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total Recoverable	Water	200.2	
440-71553-1 MS	Outfall010_20140228_Grab	Total Recoverable	Water	200.2	
440-71553-1 MSD	Outfall010_20140228_Grab	Total Recoverable	Water	200.2	
LCS 440-168209/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-168209/1-A	Method Blank	Total Recoverable	Water	200.2	

Analysis Batch: 168352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-168159/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	168159
MB 440-168159/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	168159

Analysis Batch: 168370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Dissolved	Water	245.1	167954
440-71432-AK-1-E MS	Matrix Spike	Dissolved	Water	245.1	167954
440-71432-AK-1-F MSD	Matrix Spike Duplicate	Dissolved	Water	245.1	167954
LCS 440-166031/2-D	Lab Control Sample	Dissolved	Water	245.1	167954
MB 440-166031/1-D	Method Blank	Dissolved	Water	245.1	167954

Analysis Batch: 168372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total Recoverable	Water	200.7 Rev 4.4	168159
440-71553-1 MS	Outfall010_20140228_Grab	Total Recoverable	Water	200.7 Rev 4.4	168159
440-71553-1 MSD	Outfall010_20140228_Grab	Total Recoverable	Water	200.7 Rev 4.4	168159

Analysis Batch: 168447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total Recoverable	Water	200.8	168209
440-71553-1 MS	Outfall010_20140228_Grab	Total Recoverable	Water	200.8	168209
440-71553-1 MSD	Outfall010_20140228_Grab	Total Recoverable	Water	200.8	168209
LCS 440-168209/2-A	Lab Control Sample	Total Recoverable	Water	200.8	168209
MB 440-168209/1-A	Method Blank	Total Recoverable	Water	200.8	168209

Analysis Batch: 168594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71456-B-1-E MS	Matrix Spike	Total/NA	Water	245.1	168176
440-71456-B-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	168176
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	245.1	168176
LCS 440-168176/2-A	Lab Control Sample	Total/NA	Water	245.1	168176
MB 440-168176/1-A	Method Blank	Total/NA	Water	245.1	168176

General Chemistry

Prep Batch: 166911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	Distill/CN	
440-71837-L-5-B MS	Matrix Spike	Dissolved	Water	Distill/CN	
440-71837-L-5-C MSD	Matrix Spike Duplicate	Dissolved	Water	Distill/CN	
LCS 440-166911/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-166911/1-A	Method Blank	Total/NA	Water	Distill/CN	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

General Chemistry (Continued)

Analysis Batch: 166930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	SM 2540D	
440-72120-B-1 DU	Duplicate	Total/NA	Water	SM 2540D	
LCS 440-166930/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-166930/2	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 166965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	SM 4500 CN E	166911
440-71837-L-5-B MS	Matrix Spike	Dissolved	Water	SM 4500 CN E	166911
440-71837-L-5-C MSD	Matrix Spike Duplicate	Dissolved	Water	SM 4500 CN E	166911
LCS 440-166911/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	166911
MB 440-166911/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	166911

Analysis Batch: 167190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	SM 2540C	
440-72002-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	
LCS 440-167190/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-167190/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 167873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	SM 4500 F C	
440-71565-D-5 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
440-71565-D-5 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
LCS 440-167873/9	Lab Control Sample	Total/NA	Water	SM 4500 F C	
MB 440-167873/10	Method Blank	Total/NA	Water	SM 4500 F C	

Prep Batch: 168416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	1664A	
LCS 440-168416/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-168416/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-168416/1-A	Method Blank	Total/NA	Water	1664A	

Analysis Batch: 168460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	1664A	168416
LCS 440-168416/2-A	Lab Control Sample	Total/NA	Water	1664A	168416
LCSD 440-168416/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	168416
MB 440-168416/1-A	Method Blank	Total/NA	Water	1664A	168416

Rad

Prep Batch: 108343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	PrecSep-21	
440-71553-3	BLK	Total/NA	Water	PrecSep-21	
440-71553-3 DU	BLK	Total/NA	Water	PrecSep-21	
LCS 160-108343/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Rad (Continued)

Prep Batch: 108343 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-108343/1-A	Method Blank	Total/NA	Water	PrecSep-21	

Prep Batch: 108344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	PrecSep_0	
440-71553-3	BLK	Total/NA	Water	PrecSep_0	
440-71553-3 DU	BLK	Total/NA	Water	PrecSep_0	
LCS 160-108344/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
MB 160-108344/1-A	Method Blank	Total/NA	Water	PrecSep_0	

Prep Batch: 108350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71432-P-1-D DU	Duplicate	Total/NA	Water	Fill_Geo-0	
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	Fill_Geo-0	
440-71553-3	BLK	Total/NA	Water	Fill_Geo-0	
LCS 160-108350/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
MB 160-108350/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	

Prep Batch: 108916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	PrecSep-7	
440-71553-3	BLK	Total/NA	Water	PrecSep-7	
440-71553-3 DU	BLK	Total/NA	Water	PrecSep-7	
LCS 160-108916/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
MB 160-108916/1-A	Method Blank	Total/NA	Water	PrecSep-7	

Prep Batch: 109757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71432-P-1-G DU	Duplicate	Total/NA	Water	ExtChrom	
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	ExtChrom	
440-71553-3	BLK	Total/NA	Water	ExtChrom	
LCS 160-109757/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
MB 160-109757/1-A	Method Blank	Total/NA	Water	ExtChrom	

Prep Batch: 109795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71432-P-1-I DU	Duplicate	Total/NA	Water	Evaporation	
440-71432-P-1-J MS	Matrix Spike	Total/NA	Water	Evaporation	
440-71432-P-1-K MSBT	Matrix Spike	Total/NA	Water	Evaporation	
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	Evaporation	
440-71553-3	BLK	Total/NA	Water	Evaporation	
LCS 160-109795/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-109795/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
MB 160-109795/1-A	Method Blank	Total/NA	Water	Evaporation	

Prep Batch: 111474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	LSC_Dist_Susp	
440-71553-1 MS	Outfall010_20140228_Grab	Total/NA	Water	LSC_Dist_Susp	
440-71648-I-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	
LCS 160-111474/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Rad (Continued)

Prep Batch: 111474 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-111474/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	

Biology

Analysis Batch: 166546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	SM 9221F	

Analysis Batch: 166553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71553-1	Outfall010_20140228_Grab	Total/NA	Water	SM 9221E	

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

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
LQ	LCS/LCSD recovery above method control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
GR	Internal Standard out of range
LH	Surrogate Recoveries were higher than QC limits
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LG	LG=Surrogate recovery below the acceptance limits

HPLC/IC

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
BB	Sample > 4X spike concentration
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

DIOXIN

Qualifier	Qualifier Description
J	Estimated result. Result is less than the reporting limit.
Q	Estimated maximum possible concentration (EMPC).
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Metals

Qualifier	Qualifier Description
QP	Holding time Immediate. Analyzed as close to receipt as possible
MB	Analyte present in the method blank
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
BB	Sample > 4X spike concentration

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
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)

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Certification Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-14
Arizona	State Program	9	AZ0671	10-13-14
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-14
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-14
New Mexico	State Program	6	N/A	01-29-15
Northern Mariana Islands	State Program	9	MP0002	01-31-14 *
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-15

Laboratory: TestAmerica Knoxville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0688	06-17-14
California	State Program	9	2423	06-30-14
Colorado	State Program	8	N/A	02-28-15
Connecticut	State Program	1	PH-0223	09-30-15
Florida	NELAP	4	E87177	06-30-14
Georgia	State Program	4	906	06-13-14
Hawaii	State Program	9	N/A	04-13-14
Iowa	State Program	7	375	08-01-14
Kansas	NELAP	7	E-10349	10-31-14
Kentucky (DW)	State Program	4	90101	12-31-14
L-A-B	DoD ELAP		L2311	02-13-16
Louisiana	NELAP	6	83979	06-30-14
Louisiana	NELAP	6	LA110001	12-31-14
Maryland	State Program	3	277	03-31-14
Michigan	State Program	5	9933	04-13-14
Nevada	State Program	9	TN00009	07-31-14
New Jersey	NELAP	2	TN001	06-30-14
New York	NELAP	2	10781	04-01-14
North Carolina DENR	State Program	4	64	12-31-14
North Carolina DHHS	State Program	4	21705	07-31-14
Ohio VAP	State Program	5	CL0059	03-26-15
Oklahoma	State Program	6	9415	08-31-14
Pennsylvania	NELAP	3	68-00576	12-31-14
South Carolina	State Program	4	84001	06-30-14
Tennessee	State Program	4	2014	04-13-14
Texas	NELAP	6	T104704380-TX	08-31-14
USDA	Federal		P330-13-00260	08-29-16
Utah	NELAP	8	QUAN3	07-31-14
Virginia	NELAP	3	460176	09-14-14
Virginia	State Program	3	165	06-30-14
Washington	State Program	10	C593	01-19-15
West Virginia DEP	State Program	3	345	04-30-14
West Virginia DHHR	State Program	3	9955C	12-31-14
Wisconsin	State Program	5	998044300	08-31-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Irvine

Certification Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Laboratory: TestAmerica St. Louis

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	MO00054	06-30-14
California	NELAP	9	09266CA	03-31-14 *
Connecticut	State Program	1	PH-0241	03-31-15
Florida	NELAP	4	E87689	06-30-14
Illinois	NELAP	5	200023	11-30-14
Iowa	State Program	7	373	12-01-14
Kansas	NELAP	7	E-10236	10-31-14
Kentucky (DW)	State Program	4	90125	12-31-14
L-A-B	DoD ELAP		L2305	01-10-16
Louisiana	NELAP	6	LA140007	12-31-14
Maryland	State Program	3	310	09-30-14
Missouri	State Program	7	780	06-30-14
Nevada	State Program	9	MO000542013-1	07-31-14
New Jersey	NELAP	2	MO002	06-30-14 *
New Mexico	State Program	6		06-30-10 *
New York	NELAP	2	11616	03-31-15
North Dakota	State Program	8	R207	06-30-14
NRC	NRC		24-24817-01	12-31-22
Oklahoma	State Program	6	2013-049	08-31-14
Pennsylvania	NELAP	3	68-00540	02-28-15
South Carolina	State Program	4	85002001	06-30-14
Texas	NELAP	6	T104704193-13-6	07-31-14
USDA	Federal		P330-07-00122	01-09-17
USEPA Reg V SDWA	Federal	1	WG-15J	08-30-14
Utah	NELAP	8	MO000542013-5	07-31-14
Virginia	NELAP	3	2236	06-14-14 *
Washington	State Program	10	C592	08-30-14
West Virginia DEP	State Program	3	381	08-30-14

* Expired certification is currently pending renewal and is considered valid.

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675/ 786-0262

<http://www.emsl.com> E-mail: MicrobiologyLab@emsl.com



Client: TestAmerica - Irvine, CA 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Attn. Debby Wilson Project: Boeing SSFL Outfalls / Project# 44009879 / Job# 440-71553-1	EMSL Order ID: 611400236 Date Received: 3/5/2014 Date Analyzed: 3/7/2014 Date Reported: 3/10/2014 Date Amended:
--	---


Real-Time PCR Analysis for Human *Bacteroides*

Based on a published method SAM: 348 - 357, 2010), EMSL Test Code: M199, Revision No. 3, 04/18/2011

Lab Sample Number	Client Sample ID	Location	Amount Received	Amount Sampled	CEs /100 mL
0236-1	Outfall 010_201311 (440-71553-1)	N/A	150 mL Water	150 mL Water	None Detected

EMSL maintains liability limited to cost of analysis. Interpretation of the data contained in this report is the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. The above test report relates only to the items tested. EMSL bears no responsibility for sample collection activities or analytical method limitations.

Note: The PCR primer is HF183 and the qPCR probe and primer was evaluated in 2010 by EPA scientists. The real-time PCR based on HF183 detects human specific bacteroides predominantly with minor cross-detections on chicken and dog fecal materials. CEs: Cell Equivalents, measured by PCR using genomic DNA standards.


Quanyi "Charlie" Li, Ph.D.
Director, DNA Analysis Laboratory

LABORATORY REPORT



**Aquatic
Testing
Laboratories**

"dedicated to providing quality aquatic toxicity testing"

4350 Transport Street, Unit 107
Ventura, CA 93003
(805) 650-0546 FAX (805) 650-0756
CA DOHS ELAP Cert. No.: 1775

Date: March 11, 2014

Client: TestAmerica, Irvine
17461 Derian Ave., Suite 100
Irvine, CA 92614
Attn: Debby Wilson

Laboratory No.: A-14030105-001
Job No.: 440-71553-1
Sample I.D.: Outfall 010 (440-71553-1)

Sample Control: The sample was received by ATL chilled, within the recommended hold time and with the chain of custody record attached. Testing conducted on only one sample per client instruction.

Date Sampled: 02/28/14
Date Received: 03/01/14
Temp. Received: 4.2°C
Chlorine (TRC): 0.0 mg/l
Date Tested: 03/01/14 to 03/08/14

Sample Analysis: The following analyses were performed on your sample:

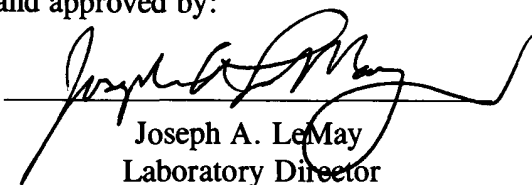
Fathead Minnow 96hr Percent Survival Bioassay (EPA Method 2000.0).
Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).

Attached are the test data generated from the analysis of your sample. All testing was conducted under the direct supervision of Joseph A. LeMay. Daily test readings were taken by Joseph A. LeMay (initialed: JAL) and Jacob LeMay (initialed: J).

Result Summary:

Acute:	<u>Survival</u>	<u>TUa</u>
Fathead Minnow:	100%	0.0
Chronic:	<u>NOEC</u>	<u>TUc</u>
<i>Ceriodaphnia</i> Survival:	100%	1.0
<i>Ceriodaphnia</i> Reproduction:	100%	1.0

Quality Control: Reviewed and approved by:


Joseph A. LeMay
Laboratory Director

FATHEAD MINNOW PERCENT SURVIVAL TEST

EPA Method 2000.0



Lab No.: A-14030105-001

Client/ID: TestAmerica 440-71553-1 Outfall 010

Start Date: 03/01/2014

TEST SUMMARY

Species: *Pimephales promelas*.

Age: 12 (1-14) days.

Regulations: NPDES.

Test solution volume: 250 ml.

Feeding: prior to renewal at 48 hrs.

Number of replicates: 4.

Control water: Moderately hard reconstituted water.

Photoperiod: 16/8 hrs light/dark.

Source: In-laboratory Culture.

Test type: Static-Renewal.

Test Protocol: EPA-821-R-02-012.

Endpoints: Percent Survival at 96 hrs.

Test chamber: 600 ml beakers.

Temperature: 20 +/- 1°C.

Number of fish per chamber: 10.

QA/QC No.: RT-140301.

TEST DATA

		°C	DO	pH	# Dead				Analyst & Time of Readings
					A	B	C	D	
INITIAL	Control	20.1	8.3	7.9	0	0	0	0	1415 3-1-14
	100%	20.5	8.7	8.0	0	0	0	0	
24 Hr	Control	19.9	8.0	8.0	0	0	0	0	1420 3-2-14
	100%	18.9	8.7	8.0	0	0	0	0	
48 Hr	Control	20.1	7.8	7.9	0	0	0	0	1345 3-3-14
	100%	19.9	7.5	7.9	0	0	0	0	
Renewal	Control	20.1	8.1	8.0	0	0	0	0	1345 3-3-14
	100%	20.0	8.0	8.0	0	0	0	0	
72 Hr	Control	20.2	8.0	7.9	0	0	0	0	1330 3-4-14
	100%	20.0	8.0	7.8	0	0	0	0	
96 Hr	Control	20.2	7.8	8.0	0	0	0	0	1330 3-5-14
	100%	20.1	7.7	7.9	0	0	0	0	

Comments:

Sample as received: Chlorine: 0.0 mg/l; pH: 8.0; Conductivity: 88.1 umho; Temp: 4.2°C;

DO: 11.3 mg/l; Alkalinity: 17 mg/l; Hardness: 26 mg/l; NH₃-N: 0.2 mg/l.

Sample aerated moderately (approx. 500 ml/min) to raise or lower DO? Yes / No.

Control: Alkalinity: 55 mg/l; Hardness: 91 mg/l; Conductivity: 225 umho.

Test solution aerated (not to exceed 100 bubbles/min) to maintain DO >4.0 mg/l? Yes / No.

Sample used for renewal is the original sample kept at 0-6°C with minimal headspace.

Dissolved Oxygen (DO) readings in mg/l O₂.

RESULTS

Percent Survival In: Control: 100 % 100% Sample: 100 %

CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

- ***Test and Results Summary***
- ***Data Summary and Statistical Analyses***
- ***Raw Test Data: Water Quality &
Test Organism Measurements***

**CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0**



Lab No.: A-14030105-001
Client/ID: TestAmerica – Outfall 010

Date Tested: 03/01/14 to 03/08/14

TEST SUMMARY

Test type: Daily static-renewal.	Endpoints: Survival and Reproduction.
Species: <i>Ceriodaphnia dubia</i> .	Source: In-laboratory culture.
Age: < 24 hrs; all released within 8 hrs.	Food: .1 ml YTC, algae per day.
Test vessel size: 30 ml.	Test solution volume: 15 ml.
Number of test organisms per vessel: 1.	Number of replicates: 10.
Temperature: 25 +/- 1°C.	Photoperiod: 16/8 hrs. light/dark cycle.
Dilution water: Mod. hard reconstituted (MHRW).	Test duration: 7 days.
QA/QC Batch No.: RT-140301.	Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival	Mean Number of Young Per Female
Control	100%	23.8
100% Sample	100%	30.8
Sample not statistically significantly less than Control for either endpoint.		

CHRONIC TOXICITY

Survival NOEC	100%
Survival TUc	1.0
Reproduction NOEC	100%
Reproduction TUc	1.0

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% survival)
≥15 young per surviving control female	Pass (23.8 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction; if >47% and no toxicity at IWC, the test must be repeated	Pass (PMSD = 8.7%)
Statistically significantly different concentrations relative difference > 13%	Pass (no concentration significantly different)
Concentration response relationship acceptable	Pass (no significant response at concentration tested)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 3/1/2014 14:45 Test ID: 14030105c Sample ID: Outfall 010
 End Date: 3/8/2013 14:45 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater
 Sample Date: 2/28/2014 12:00 Protocol: FWCH 4TH-EPA-821-R-02-0 Test Species: CD-Ceriodaphnia dubia

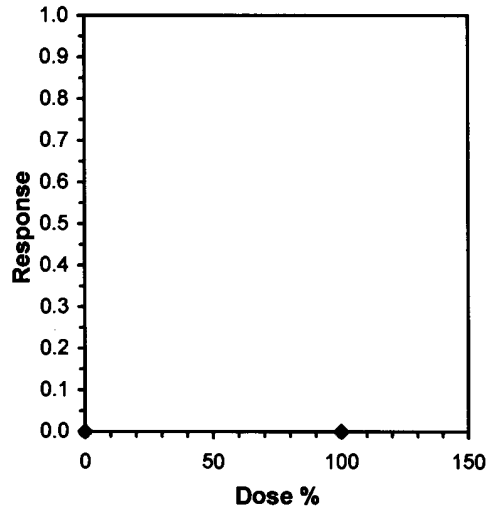
Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's 1-Tailed		Isotonic	
							Exact P	Critical	Mean	N-Mean
D-Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
100	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	100	>100		1
Treatments vs D-Control				

Point	%	SD	Linear Interpolation (200 Resamples)	
			95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Ceriodaphnia Survival and Reproduction Test-Reproduction

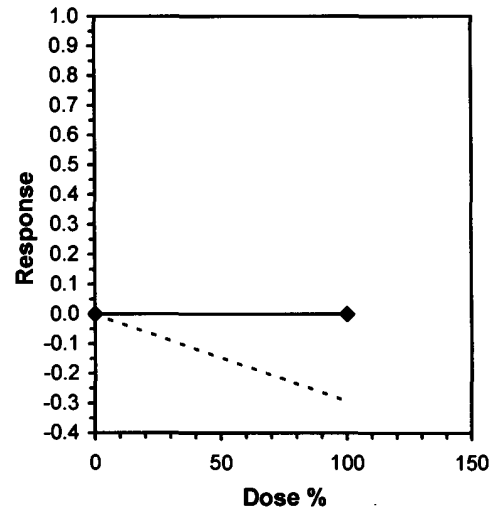
Start Date: 3/1/2014 14:45 Test ID: 14030105c Sample ID: Outfall 010
 End Date: 3/8/2013 14:45 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater
 Sample Date: 2/28/2014 12:00 Protocol: FWCH 4TH-EPA-821-R-02-0 Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	24.000	25.000	27.000	27.000	23.000	21.000	24.000	19.000	23.000	25.000
100	31.000	29.000	31.000	31.000	35.000	32.000	33.000	33.000	28.000	25.000

Conc-%	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
D-Control	23.800	1.0000	23.800	19.000	27.000	10.443	10				27.300	1.0000	
100	30.800	1.2941	30.800	25.000	35.000	9.285	10	-5.842	1.734	2.078	27.300	1.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.9535	0.905	-0.6277	0.16447		
F-Test indicates equal variances (p = 0.68)	1.32374	6.54109				
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences	2.07766	0.0873	245	7.17778	1.6E-05	1, 18
Treatments vs D-Control						

Linear Interpolation (200 Resamples)				
Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



CERIODAPHNIA DUBIA CHRONIC BIOASSAY
EPA METHOD 1002.0 Raw Data Sheet



Lab No.: A-14030105-001

Client ID: TestAmerica - Outfall 010 440-71553-1

Start Date: 03/01/2014

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr	0 hr	24hr
Analyst Initials:		Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Time of Readings:		1445	1445	1445	1445	1445	1445	1445	1445	1415	1430	1430	1415	1415	1445
Control	DO	8.4	8.3	8.5	8.1	8.3	8.3	8.2	8.1	8.0	8.0	8.1	8.0	8.7	8.0
	pH	8.0	8.0	8.1	8.0	8.0	8.1	8.0	8.0	8.0	8.0	8.0	8.0	8.1	8.1
	Temp	24.7	24.9	24.7	24.6	24.6	24.9	24.4	24.9	24.9	25.0	25.1	25.0	25.0	25.0
100%	DO	8.7	8.5	8.6	8.0	8.3	8.1	8.0	8.1	8.2	8.0	8.0	2.9	8.2	7.9
	pH	8.0	8.1	8.0	8.1	7.9	8.0	8.1	8.0	8.1	8.1	7.9	8.0	2.8	2.9
	Temp	24.5	24.8	24.7	24.6	24.6	24.9	24.4	24.8	24.7	25.0	25.0	25.0	25.0	24.9

Additional Parameters	Control	100% Sample
Conductivity (umohms)	275	76.7
Alkalinity (mg/l CaCO ₃)	55	18
Hardness (mg/l CaCO ₃)	91	31
Ammonia (mg/l NH ₃ -N)	0.1	0.1

Source of Neonates											
Replicate:	A	B	C	D	E	F	G	H	I	J	
Brood ID:	5B	4C	4D	4F	4G	5G	6G	4I	6I	4J	

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	Z
	2	0	0	0	0	0	0	0	0	0	0	0	10	Z
	3	0	3	4	0	0	0	0	0	0	0	7	10	Z
	4	3	0	0	3	4	3	2	3	3	2	23	10	Z
	5	0	6	8	0	0	0	8	0	7	8	37	10	Z
	6	6	14	15	10	7	8	0	6	0	0	68	10	Z
	7	15	0	0	14	12	10	14	10	13	15	103	10	Z
	Total	24	25	27	27	23	21	24	19	23	25	238	10	Z
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	Z
	2	0	0	0	0	0	0	0	0	0	0	0	10	Z
	3	5	5	4	4	4	4	0	0	0	0	26	10	Z
	4	9	0	0	0	0	0	6	4	5	4	28	10	Z
	5	0	7	9	10	12	10	10	7	9	9	86	10	Z
	6	17	17	18	17	19	18	17	19	14	12	168	10	Z
	7	17	18	18	17	22	20	0	0	15	0	0	10	Z
	Total	31	29	31	31	35	32	33	33	28	25	308	10	Z

Circled fourth brood not used in statistical analysis.

7th day only used if <60% of the surviving control females have produced their third brood.



CHAIN OF CUSTODY

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

TestAmerica Irvine
 17461 Derian Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)

Client Contact: _____ Phone: _____
 Shipping/Receiving: _____ E-Mail: debby.wilson@testamericainc.com
 Company: Aquatic Testing Laboratories
 Address: 4350 Transport #107, Due Date Requested: 3/12/2014
 City: Ventura TAT Requested (days):
 State, Zip: CA, 93003
 Phone: _____ PO #: _____
 Email: _____ W/O #: _____
 Project Name: Boeig SSFL outfalls Project #: 44009879
 Site: _____ SSOV#: _____

Lab PM: Wilson, Debby S
 Carrier Tracking No(s): _____
 COC No: 440-30074.1
 Page: 1 of 1
 Job #: 440-71553-1

Sample ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/soil, BT=Trace, A=Air)	Field Original Sample (Yes or No)	Analysis Requested	Total Number of Containers	Special Instructions/Note
Outfall 010 (440-71553-1)	2/28/14	12:00 Pacific		Water	X	SUB (Acute FH minnow, EPA/821-R02-012)/ Acute FH minnow, EPA/821-R02-012 <i>Care Chronic</i>	2	

Analysis Requested

Preservation Codes:
 A - HCl
 B - NaOH
 C - Zn Acetate
 D - Nitric Acid
 E - NaHSO4
 F - MeOH
 G - Ammonia
 H - Ascorbic Acid
 I - Ice
 J - DI Water
 K - EDTA
 L - EDA
 M - Hexane
 N - None
 O - AsNaO2
 P - Na2O4S
 Q - Na2SO3
 R - Na2S2O3
 S - H2SO4
 T - TSP Dodecylhydrate
 U - Acetone
 V - MCAA
 W - ph 4-5
 Z - other (specify)

Possible Hazard Identification

Unconfirmed _____
 Deliverable Requested: I, II, III, IV, Other (specify) _____
 Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____
 Relinquished by: _____ Date/Time: 3-1-14 9:30 Company: DSS
 Relinquished by: _____ Date/Time: 3-1-14 12:30 Company: ATC
 Relinquished by: _____ Date/Time: _____ Company: _____
 Custody Seals Intact: Yes No Custody Seal No.: _____
 Cooler Temperature(s) °C and Other Remarks: 4.2 °C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For _____ Months
 Special Instructions/QC Requirements: _____



REFERENCE TOXICANT DATA

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



Fathead Minnow Acute Toxicity Test

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

FATHEAD MINNOW ACUTE Reference Toxicant - SDS



QA/QC Batch No.: RT-140301

TEST SUMMARY

Species: *Pimephales promelas*.
 Age: 12 days old.
 Regulations: NPDES.
 Test chamber volume: 250 ml.
 Feeding: Prior to renewal at 48 hrs.
 Temperature: 20 +/- 1°C.
 Number of replicates: 2.
 Dilution water: MHSF.

Source: In-lab culture.
 Test type: Static-Renewal.
 Test Protocol: EPA-821-R-02-012.
 Endpoints: LC50 at 96 hrs.
 Test chamber: 600 ml beakers.
 Aeration: None.
 Number of organisms per chamber: 10.
 Photoperiod: 16/8 hrs light/dark.

TEST DATA

Date/Time: Analyst:	INITIAL			24 Hr					48 Hr				
	<u>3-1-14 1130</u>			<u>3-2-14 1130</u>					<u>3-3-14 1130</u>				
	<u>J</u>			<u>J</u>					<u>J</u>				
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead	
						A	B				A	B	
Control	<u>19.9</u>	<u>8.1</u>	<u>7.9</u>	<u>19.9</u>	<u>8.0</u>	<u>7.7</u>	<u>0</u>	<u>0</u>	<u>20.1</u>	<u>8.0</u>	<u>7.9</u>	<u>0</u>	<u>0</u>
1.0 mg/l	<u>19.8</u>	<u>8.2</u>	<u>7.9</u>	<u>19.8</u>	<u>8.0</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>20.0</u>	<u>8.0</u>	<u>7.9</u>	<u>0</u>	<u>0</u>
2.0 mg/l	<u>19.9</u>	<u>8.3</u>	<u>7.9</u>	<u>19.7</u>	<u>8.0</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>19.9</u>	<u>8.1</u>	<u>7.9</u>	<u>0</u>	<u>0</u>
4.0 mg/l	<u>19.9</u>	<u>8.1</u>	<u>7.8</u>	<u>19.8</u>	<u>8.1</u>	<u>8.0</u>	<u>0</u>	<u>0</u>	<u>19.9</u>	<u>8.3</u>	<u>7.9</u>	<u>1</u>	<u>1</u>
8.0 mg/l	<u>19.8</u>	<u>8.0</u>	<u>7.9</u>	<u>19.9</u>	<u>8.0</u>	<u>8.0</u>	<u>10</u>	<u>10</u>	-	-	-	-	-
16.0 mg/l	<u>19.8</u>	<u>8.1</u>	<u>7.9</u>	<u>19.8</u>	<u>8.0</u>	<u>7.9</u>	<u>10</u>	<u>10</u>	-	-	-	-	-

Date/Time: Analyst:	RENEWAL			72 Hr					96 Hr				
	<u>3-3-14 1130</u>			<u>3-4-14 1145</u>					<u>3-5-14 1115</u>				
	<u>J</u>			<u>J</u>					<u>J</u>				
	°C	DO	pH	°C	DO	pH	# Dead		°C	DO	pH	# Dead	
						A	B				A	B	
Control	<u>20.1</u>	<u>8.3</u>	<u>8.0</u>	<u>20.2</u>	<u>7.6</u>	<u>7.8</u>	<u>0</u>	<u>0</u>	<u>20.4</u>	<u>7.1</u>	<u>7.8</u>	<u>0</u>	<u>0</u>
1.0 mg/l	<u>20.2</u>	<u>8.4</u>	<u>8.0</u>	<u>20.3</u>	<u>7.8</u>	<u>7.9</u>	<u>0</u>	<u>0</u>	<u>20.3</u>	<u>7.6</u>	<u>7.8</u>	<u>0</u>	<u>0</u>
2.0 mg/l	<u>20.1</u>	<u>8.3</u>	<u>8.0</u>	<u>20.1</u>	<u>8.0</u>	<u>7.9</u>	<u>0</u>	<u>0</u>	<u>20.2</u>	<u>8.0</u>	<u>7.8</u>	<u>0</u>	<u>0</u>
4.0 mg/l	<u>20.1</u>	<u>8.3</u>	<u>8.0</u>	<u>20.1</u>	<u>8.1</u>	<u>7.9</u>	<u>0</u>	<u>0</u>	<u>20.2</u>	<u>8.2</u>	<u>7.8</u>	<u>0</u>	<u>0</u>
8.0 mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-
16.0 mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-

Comments: Control: Alkalinity: 56 mg/l; Hardness: 71 mg/l; Conductivity: 275 umho.
 SDS: Alkalinity: 55 mg/l; Hardness: 93 mg/l; Conductivity: 268 umho.

Concentration-response relationship acceptable? (see attached computer analysis):

Yes (response curve normal)
 No (dose interrupted indicated or non-normal)

Acute Fish Test-96 Hr Survival

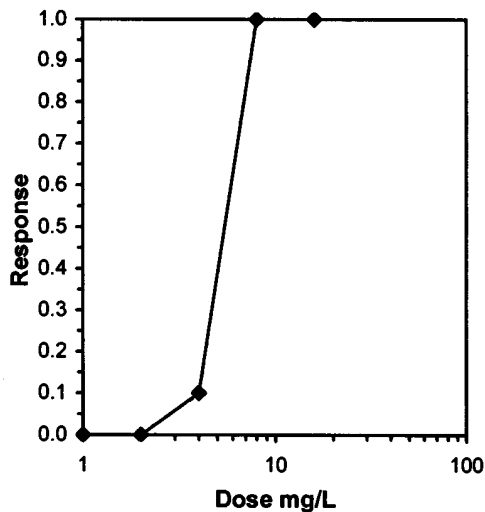
Start Date: 3/1/2014 11:30 Test ID: RT140301f Sample ID: REF-Ref Toxicant
 End Date: 3/5/2014 11:15 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SDS-Sodium dodecyl sulfate
 Sample Date: 3/1/2014 Protocol: ACUTE-EPA-821-R-02-012 Test Species: PP-Pimephales promelas
 Comments:

Conc-mg/L	1	2
D-Control	1.0000	1.0000
1	1.0000	1.0000
2	1.0000	1.0000
4	0.9000	0.9000
8	0.0000	0.0000
16	0.0000	0.0000

Conc-mg/L	Mean	N-Mean	Transform: Arcsin Square Root					N	Number Resp	Total Number
			Mean	Min	Max	CV%				
D-Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	2	0	20	
4	0.9000	0.9000	1.2490	1.2490	1.2490	0.000	2	2	20	
8	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20	
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	2	20	20	

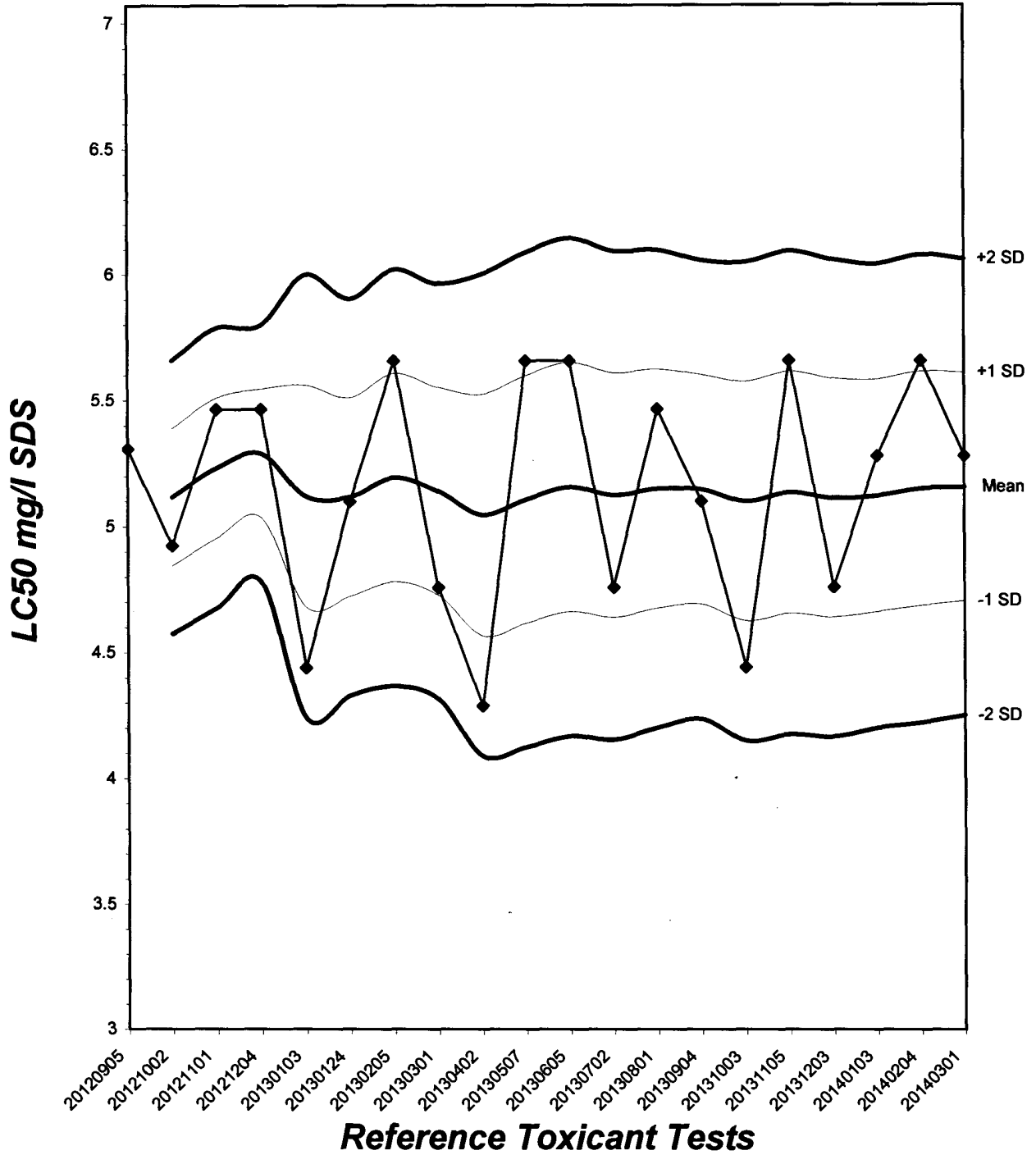
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Normality of the data set cannot be confirmed				
Equality of variance cannot be confirmed				

Trim Level	EC50	95% CL	
		Lower	Upper
0.0%	5.2780	4.8093	5.7924
5.0%	5.3968	4.8053	6.0611
10.0%	5.4432	5.1395	5.7648
20.0%	5.4432	5.1395	5.7648
Auto-0.0%	5.2780	4.8093	5.7924



Fathead Minnow Acute Laboratory Control Chart

CV% = 8.81



TEST ORGANISM LOG

FATHEAD MINNOW - LARVAL
(*Pimephales promelas*)



QA/QC BATCH NO.: RT-140301

SOURCE: In-Lab Culture

DATE HATCHED: 2-17-14

APPROXIMATE QUANTITY: 400

GENERAL APPEARANCE: good

MORTALITIES 48 HOURS PRIOR TO
TO USE IN TESTING: 0

DATE USED IN LAB: 3/11/14

AVERAGE FISH WEIGHT: 0.006 gm

LOADING LIMITS: 0.65 gm/liter @ 20°C, 0.40 gm/liter @ 25°C

Approximately 1000 fish per 10 liters limit if held overnight for acclimation without filtration @ 20°C for fish with a mean weight of 0.006 gm.

Approximately 650 fish per 10 liters limit if held overnight for acclimation without filtration @ 25°C for fish with a mean weight of 0.006 gm.

200 ml test solution volume = 0.013 gm mean fish weight limit @ 20°C; 0.008 @ 25°C

250 ml test solution volume = 0.016 gm mean fish weight limit @ 20°C; 0.010 @ 25°C

ACCLIMATION WATER QUALITY:

Temp.: 19.5 °C

pH: 7.9

Ammonia: 0 mg/l NH₃-N

DO: 8.1 mg/l

Alkalinity: 50 mg/l

Hardness: 91 mg/l

READINGS RECORDED BY: [Signature]

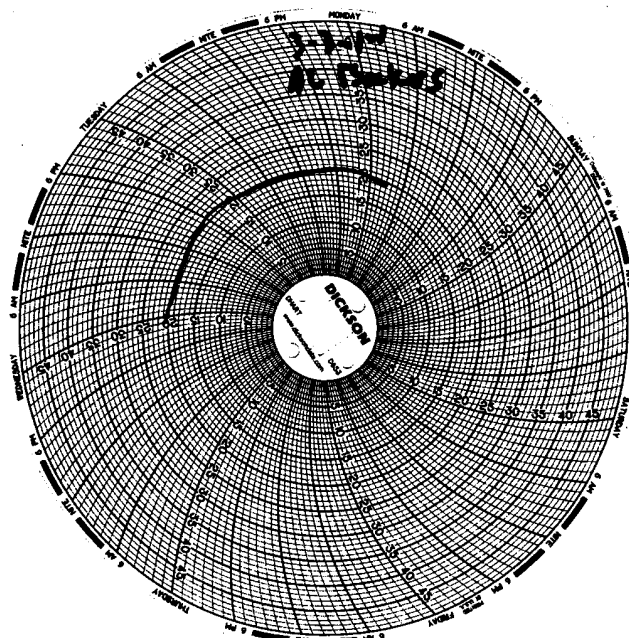
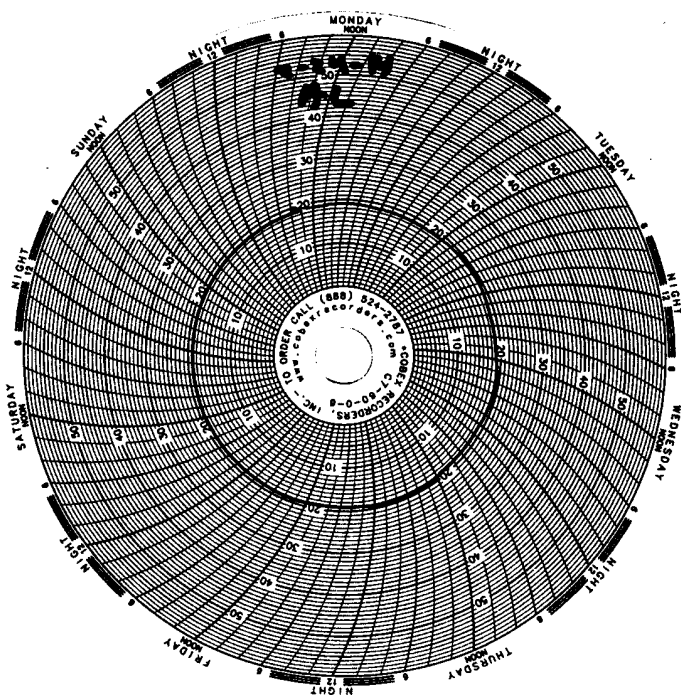
DATE: 3-1-14

Test Temperature Chart

Test No: *RT-140301*

Date Tested: *03/01/14 to 03/05/14*

Acceptable Range: *20 +/- 1°C*



CERIODAPHNIA SURVIVAL AND REPRODUCTION TEST

- ***Test and Results Summary***
- ***Data Summary and Statistical Analyses***
- ***Raw Test Data: Water Quality & Test Organism Measurements***

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-140301

Date Tested: 03/01/14 to 03/08/14

TEST SUMMARY

Test type: Daily static-renewal.
 Species: *Ceriodaphnia dubia*.
 Age: < 24 hrs; all released within 8 hrs.
 Test vessel size: 30 ml.
 Number of test organisms per vessel: 1.
 Temperature: 25 +/- 1°C.
 Dilution water: Mod. hard reconstituted (MHRW).
 Reference Toxicant: Sodium chloride (NaCl).

Endpoints: Survival and Reproduction.
 Source: In-laboratory culture.
 Food: .1 ml YTC, algae per day.
 Test solution volume: 20 ml.
 Number of replicates: 10.
 Photoperiod: 16/8 hrs. light/dark cycle.
 Test duration: 7 days.
 Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		24.4	
0.25 g/l	100%		24.9	
0.5 g/l	100%		21.0	
1.0 g/l	90%		12.5	*
2.0 g/l	80%		1.8	*
4.0 g/l	0%	*	0	**

* Statistically significantly less than control at P = 0.05 level
 ** Reproduction data from concentrations greater than survival NOEC are excluded from statistical analysis.

CHRONIC TOXICITY

Survival LC50	2.2 g/l
Reproduction IC25	0.65 g/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (24.4 young)
≥60% surviving controls had 3 broods	Pass (100% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 17.0%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 48.8%)
Concentration response relationship acceptable	Pass (Response curve normal)

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 3/1/2014 14:30 Test ID: RT140301c Sample ID: REF-Ref Toxicant
 End Date: 3/8/2014 14:45 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 3/1/2014 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia

Comments:

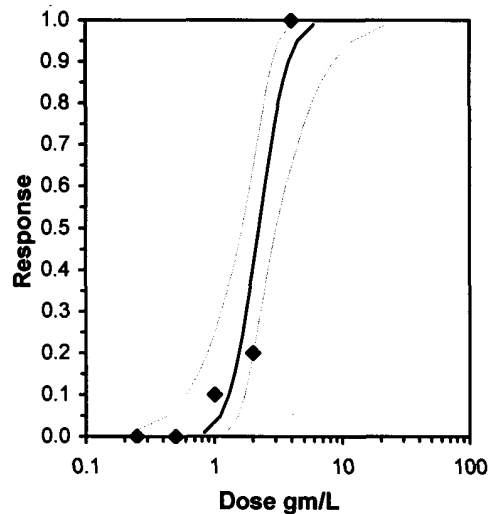
Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000
2	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	0.9000	0.9000	1	9	10	10	0.5000	0.0500	1	10
2	0.8000	0.8000	2	8	10	10	0.2368	0.0500	2	10
4	0.0000	0.0000	10	0	10	10			10	10

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs D-Control				

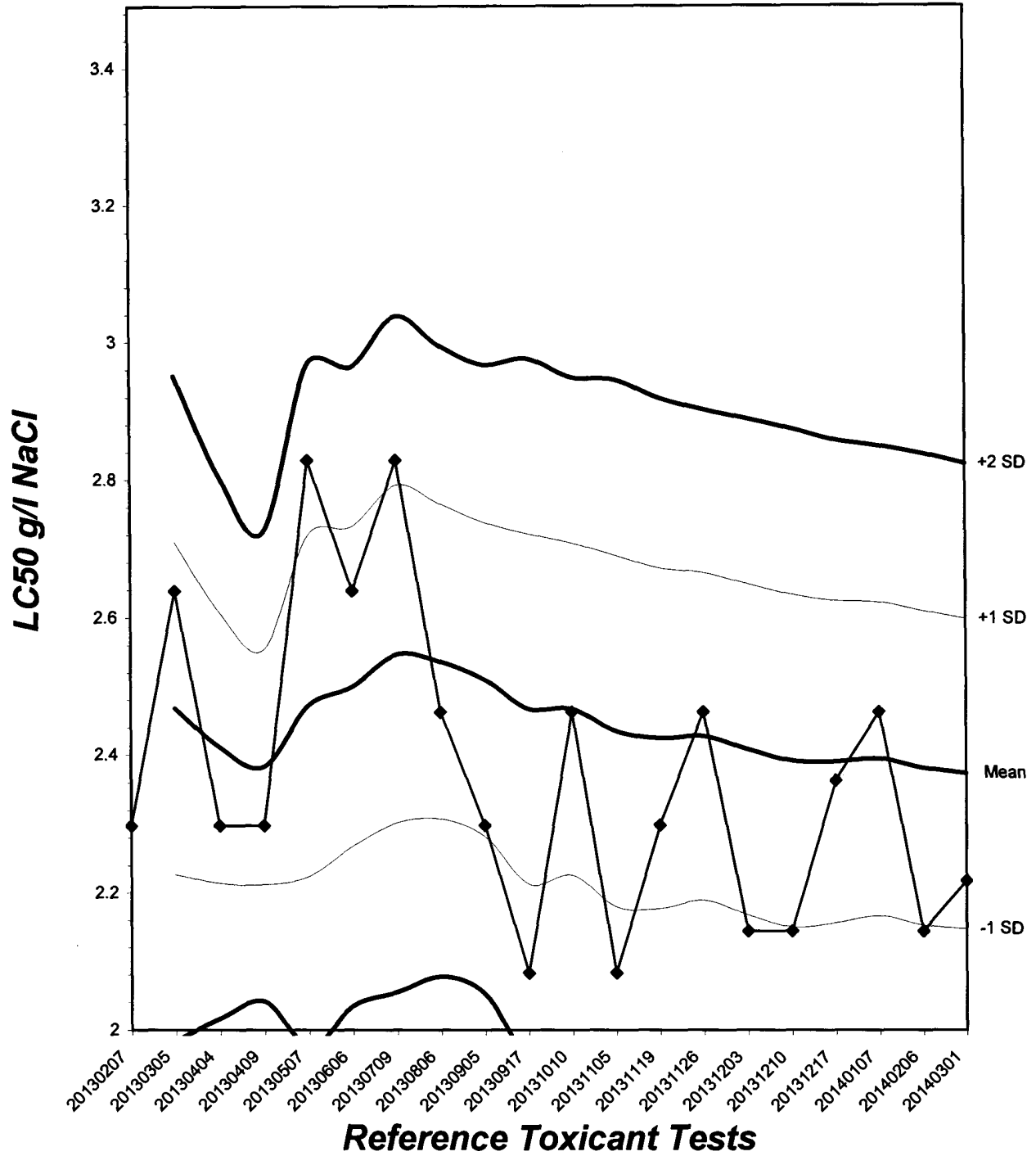
Parameter	Value	SE	95% Fiducial Limits		Maximum Likelihood-Probit						
			Control	Chi-Sq	Critical	P-value	Mu	Sigma	Iter		
Slope	5.45608	1.55772	2.40296	8.5092	0	4.3269	7.81472	0.23	0.3458	0.18328	6
Intercept	3.1133	0.60976	1.91817	4.30843							

Point	Probits	gm/L	95% Fiducial Limits	
EC01	2.674	0.83066	0.22973	1.24325
EC05	3.355	1.10746	0.43213	1.52706
EC10	3.718	1.29096	0.60071	1.71668
EC15	3.964	1.43166	0.74619	1.86774
EC20	4.158	1.55433	0.88237	2.0067
EC25	4.326	1.66792	1.01408	2.14416
EC40	4.747	1.99234	1.39806	2.60948
EC50	5.000	2.21716	1.64834	3.02161
EC60	5.253	2.46736	1.89637	3.58565
EC75	5.674	2.94727	2.29007	4.9819
EC80	5.842	3.16266	2.44219	5.73664
EC85	6.036	3.43366	2.61952	6.79487
EC90	6.282	3.80788	2.84588	8.45277
EC95	6.645	4.43884	3.19497	11.7661
EC99	7.326	5.918	3.9194	22.1604



Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 9.51



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 3/1/2014 14:30 Test ID: RT140301c Sample ID: REF-Ref Toxicant
 End Date: 3/8/2014 14:45 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 3/1/2014 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	23.000	28.000	23.000	24.000	25.000	27.000	22.000	22.000	25.000	25.000
0.25	24.000	24.000	26.000	27.000	23.000	24.000	29.000	24.000	23.000	25.000
0.5	24.000	20.000	26.000	27.000	21.000	28.000	21.000	10.000	10.000	23.000
1	17.000	8.000	18.000	11.000	17.000	18.000	18.000	10.000	0.000	8.000
2	0.000	2.000	0.000	2.000	3.000	3.000	2.000	2.000	2.000	2.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

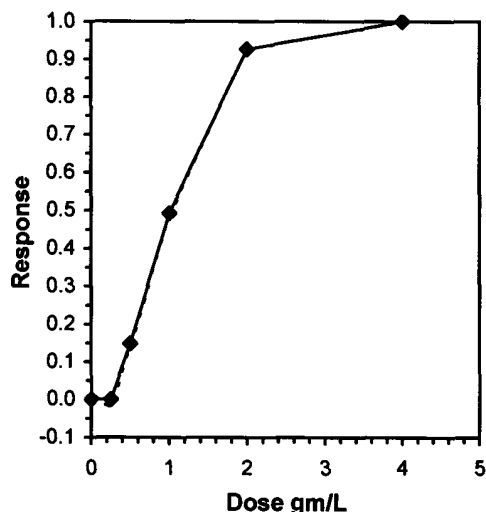
Conc-gm/L	Transform: Untransformed							Rank Sum	1-Tailed Critical	Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N			Mean	N-Mean
D-Control	24.400	1.0000	24.400	22.000	28.000	8.242	10			24.650	1.0000
0.25	24.900	1.0205	24.900	23.000	29.000	7.679	10	112.00	76.00	24.650	1.0000
0.5	21.000	0.8607	21.000	10.000	28.000	30.367	10	88.50	76.00	21.000	0.8519
*1	12.500	0.5123	12.500	0.000	18.000	48.917	10	55.00	76.00	12.500	0.5071
*2	1.800	0.0738	1.800	0.000	3.000	57.378	10	55.00	76.00	1.800	0.0730
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)	0.89154	0.947	-1.1118	2.53918
Bartlett's Test indicates unequal variances (p = 2.78E-07)	36.0813	13.2767		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	0.5	1	0.70711	
Treatments vs D-Control				

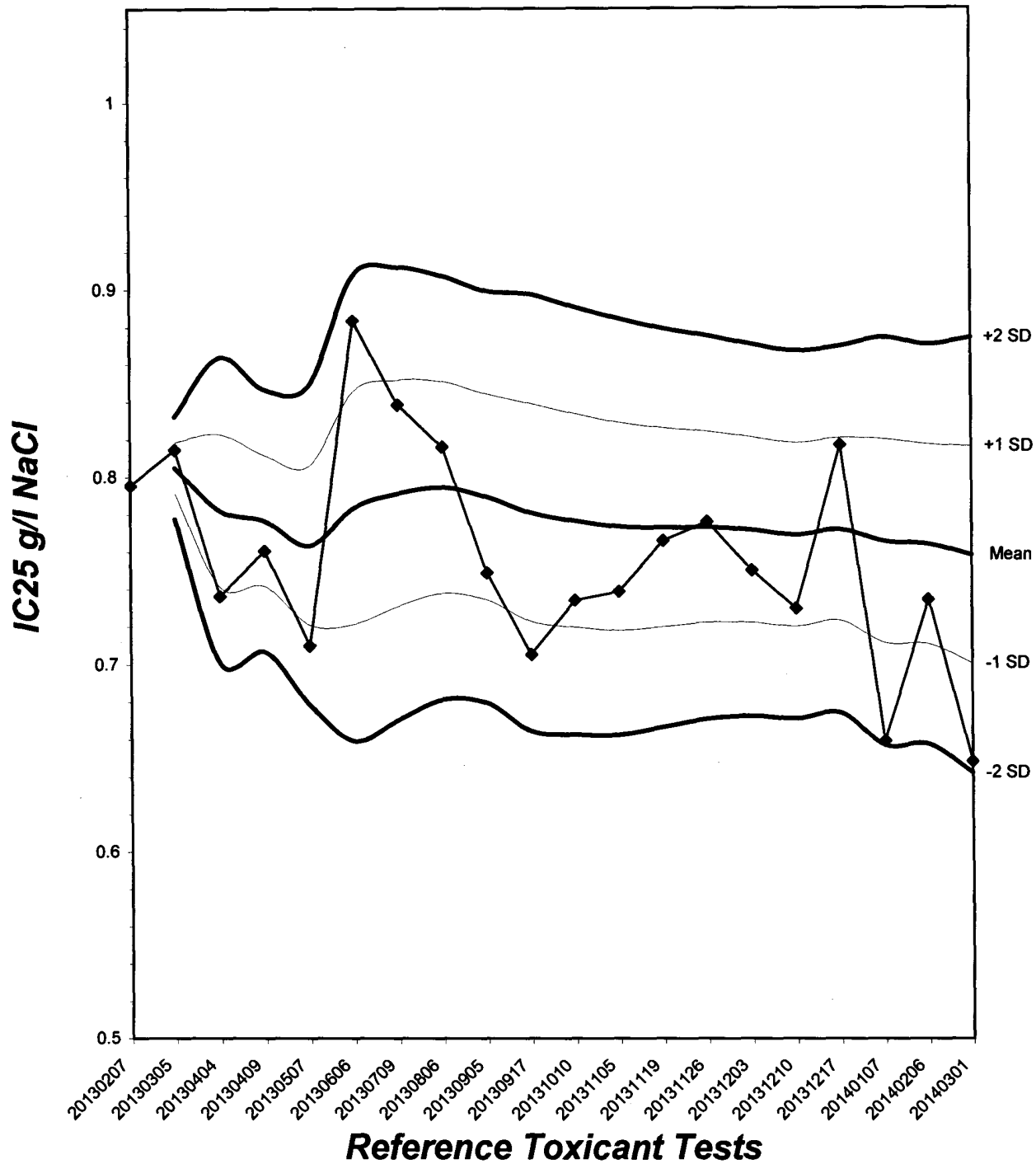
Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL	Skew
IC05	0.3344	0.0654	0.2687 0.5260	1.5114
IC10	0.4188	0.0777	0.3248 0.5791	0.5633
IC15	0.5028	0.0825	0.3651 0.6503	0.1708
IC20	0.5753	0.0892	0.4086 0.7125	-0.0646
IC25	0.6478	0.0955	0.4483 0.7916	-0.2974
IC40	0.8653	0.1050	0.7070 1.0953	0.0763
IC50	1.0164	0.1171	0.8473 1.2664	0.1866



Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 7.67



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 3/1/2014 14:30 Test ID: RT140301c Sample ID: REF-Ref Toxicant
 End Date: 3/8/2014 14:45 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 3/1/2014 Protocol: FWCH-EPA-821-R-02-013 Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	23.000	28.000	23.000	24.000	25.000	27.000	22.000	22.000	25.000	25.000
0.25	24.000	24.000	26.000	27.000	23.000	24.000	29.000	24.000	23.000	25.000
0.5	24.000	20.000	26.000	27.000	21.000	28.000	21.000	10.000	10.000	23.000
1	17.000	8.000	18.000	11.000	17.000	18.000	18.000	10.000	0.000	8.000
2	0.000	2.000	0.000	2.000	3.000	3.000	2.000	2.000	2.000	2.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-gm/L	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed	
			Mean	Min	Max	CV%	Critical			MSD	
D-Control	24.400	1.0000	24.400	22.000	28.000	8.242	10				
0.25	24.900	1.0205	24.900	23.000	29.000	7.679	10	-0.268	2.223	4.143	
0.5	21.000	0.8607	21.000	10.000	28.000	30.367	10	1.824	2.223	4.143	
*1	12.500	0.5123	12.500	0.000	18.000	48.917	10	6.386	2.223	4.143	
*2	1.800	0.0738	1.800	0.000	3.000	57.378	10	12.127	2.223	4.143	
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				

Auxiliary Tests		Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.05)		0.89154	0.947	-1.1118	2.53918						
Bartlett's Test indicates unequal variances (p = 2.78E-07)		36.0813	13.2767								
Hypothesis Test (1-tail, 0.05)		NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test		0.5	1	0.70711		4.14333	0.16981	961.07	17.3644	8.3E-17	4, 45
Treatments vs D-Control											

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-140301

Start Date: 03/01/2014

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials
		A	B	C	D	E	F	G	H	I	J			
Control	1	0	0	0	0	0	0	0	0	0	0	0	10	R
	2	0	0	0	0	0	0	0	0	0	0	0	10	R
	3	0	0	0	0	3	0	0	0	0	3	6	10	R
	4	3	4	3	2	0	5	3	3	4	0	27	10	R
	5	0	0	0	10	8	0	9	7	0	6	40	10	R
	6	6	8	8	0	14	8	0	0	8	16	68	10	R
	7	14	16	12	12	0	14	10	12	13	0	103	10	R
	Total	23	28	23	24	25	27	22	22	25	25	244	10	R
0.25 g/l	1	0	0	0	0	0	0	0	0	0	0	10	R	
	2	0	0	0	0	0	0	0	0	0	0	10	R	
	3	0	0	0	0	3	2	0	0	2	0	7	10	R
	4	3	3	4	5	0	0	4	4	0	3	26	10	R
	5	0	0	0	0	6	7	10	8	7	0	38	10	R
	6	7	8	10	8	14	15	0	12	14	7	95	10	R
	7	14	13	12	4	0	0	15	0	0	15	83	10	R
	Total	24	24	26	27	23	24	29	24	23	25	239	10	R
0.5 g/l	1	0	0	0	0	0	0	0	0	0	0	10	R	
	2	0	0	0	0	0	0	0	0	0	0	10	R	
	3	0	0	0	0	3	0	0	0	0	3	10	R	
	4	3	4	3	3	0	4	3	3	2	3	28	10	R
	5	0	0	0	0	6	0	0	0	0	0	6	10	R
	6	7	6	9	9	12	9	6	7	8	7	80	10	R
	7	14	10	14	15	0	15	12	0	0	13	93	10	R
	Total	24	20	26	27	21	28	21	10	10	23	210	10	R

Circled fourth brood not used in statistical analysis.
 7th day only used if <60% of the surviving control females have produced their third brood.

CERIODAPHNIA DUBIA CHRONIC BIOASSAY
Reference Toxicant - NaCl
Reproduction and Survival Raw Data Sheet



QA/QC No.: RT-140301

Start Date:03/01/2014

Sample	Day	Number of Young Produced										Total Live Young	No. Live Adults	Analyst Initials	
		A	B	C	D	E	F	G	H	I	J				
1.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	0	10	R
	2	0	0	0	0	0	0	0	0	0	0	0	0	10	R
	3	0	0	0	0	2	0	0	0	0	0	0	2	10	R
	4	2	2	3	0	0	3	3	0	0	2	0	15	10	R
	5	0	0	7	4	6	0	7	4	X	0	0	28	9	R
	6	5	6	0	7	0	5	0	6	-	6	0	35	9	R
	7	10	0	8	0	9	10	8	0	-	0	0	45	9	R
	Total	17	8	18	11	17	18	18	10	0	8	0	125	9	R
2.0 g/l	1	0	0	0	0	0	0	0	0	0	0	0	10	R	
	2	0	0	0	0	0	0	0	0	0	0	0	10	R	
	3	0	0	0	0	0	0	0	0	0	0	0	10	R	
	4	X	0	0	0	0	0	0	0	0	0	0	9	R	
	5	-	2	0	0	3	0	0	2	0	0	7	9	R	
	6	-	X	0	2	0	0	2	0	2	0	6	8	R	
	7	-	-	0	0	0	3	0	0	0	2	5	8	R	
	Total	0	2	0	2	3	3	2	2	2	2	18	8	R	
4.0 g/l	1	X	X	X	X	X	X	X	X	X	X	0	0	R	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	
	5	-	-	-	-	-	-	-	-	-	-	-	-	-	
	6	-	-	-	-	-	-	-	-	-	-	-	-	-	
	7	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	R	

Circled fourth brood not used in statistical analysis.
 7th day only used if <60% of the surviving control females have produced their third brood.

CERIODAPHNIA DUBIA CHRONIC BIOASSAY

Reference Toxicant - NaCl Water Chemistries Raw Data Sheet



QA/QC No.: RT-140301

Start Date: 03/01/2014

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Analyst Initials:		7	8	7	7	7	7	7	7	7	7	7	7	7	7
Time of Readings:		1430	1445	1445	1430	1430	1430	1430	1440	1440	1440	1440	1440	1440	1445
Control	DO	8.6	8.3	8.7	8.0	8.7	8.1	8.1	8.9	8.2	8.1	8.7	8.1	8.3	8.0
	pH	8.0	7.9	8.0	8.0	8.0	8.1	8.1	8.0	8.1	8.1	8.1	8.0	7.9	8.0
	Temp	24.7	24.8	24.6	24.8	24.7	25.0	24.7	25.0	25.0	25.1	25.0	25.0	25.0	24.7
0.25 g/l	DO	8.5	8.4	8.3	8.7	8.7	8.1	8.1	8.8	8.0	8.0	8.0	8.2	8.0	8.7
	pH	8.0	7.9	8.0	8.0	7.9	8.0	8.0	8.0	8.0	8.1	7.9	7.9	8.0	8.0
	Temp	24.6	24.8	24.6	24.7	24.7	25.0	24.7	25.0	25.0	25.1	25.1	25.0	25.0	24.7
0.5 g/l	DO	8.5	8.4	8.3	8.8	8.2	8.3	8.2	8.0	8.2	8.1	8.0	8.1	8.0	8.7
	pH	8.0	8.0	8.0	8.0	8.0	8.1	8.0	8.0	8.0	8.0	7.9	8.0	8.0	8.0
	Temp	24.6	24.9	24.7	24.8	24.7	25.1	24.7	25.0	25.0	25.1	25.1	25.0	25.0	24.8
1.0 g/l	DO	8.7	8.3	8.3	8.9	8.1	8.7	8.2	8.1	8.3	8.1	7.8	8.1	8.1	8.6
	pH	8.0	8.0	8.0	8.0	8.0	8.1	8.0	8.0	8.0	8.0	7.9	8.0	8.0	8.0
	Temp	24.6	24.7	24.6	24.7	24.7	25.0	24.9	25.0	25.0	25.1	25.1	25.0	24.9	24.7
2.0 g/l	DO	8.4	8.3	8.1	8.0	8.1	8.1	8.4	8.1	8.4	8.3	8.0	8.0	8.4	8.6
	pH	8.0	8.0	8.0	8.1	8.0	8.1	8.1	8.0	8.0	8.0	8.0	8.0	8.0	8.1
	Temp	24.6	24.8	24.6	24.7	24.7	25.0	25.0	24.9	25.0	25.0	25.1	25.0	25.1	24.8
4.0 g/l	DO	8.5	8.2	-	-	-	-	-	-	-	-	-	-	-	-
	pH	8.0	8.0	-	-	-	-	-	-	-	-	-	-	-	-
	Temp	24.7	25.0	-	-	-	-	-	-	-	-	-	-	-	-

Dissolved Oxygen (DO) readings are in mg/l O₂; Temperature (Temp) readings are in °C.

Additional Parameters	Control			High Concentration		
	Day 1	Day 3	Day 5	Day 1	Day 3	Day 5
Conductivity (µS)	275	283	293	5281	2961	3014
Alkalinity (mg/l CaCO ₃)	55	56	57	56	55	58
Hardness (mg/l CaCO ₃)	91	93	91	92	91	90

Source of Neonates

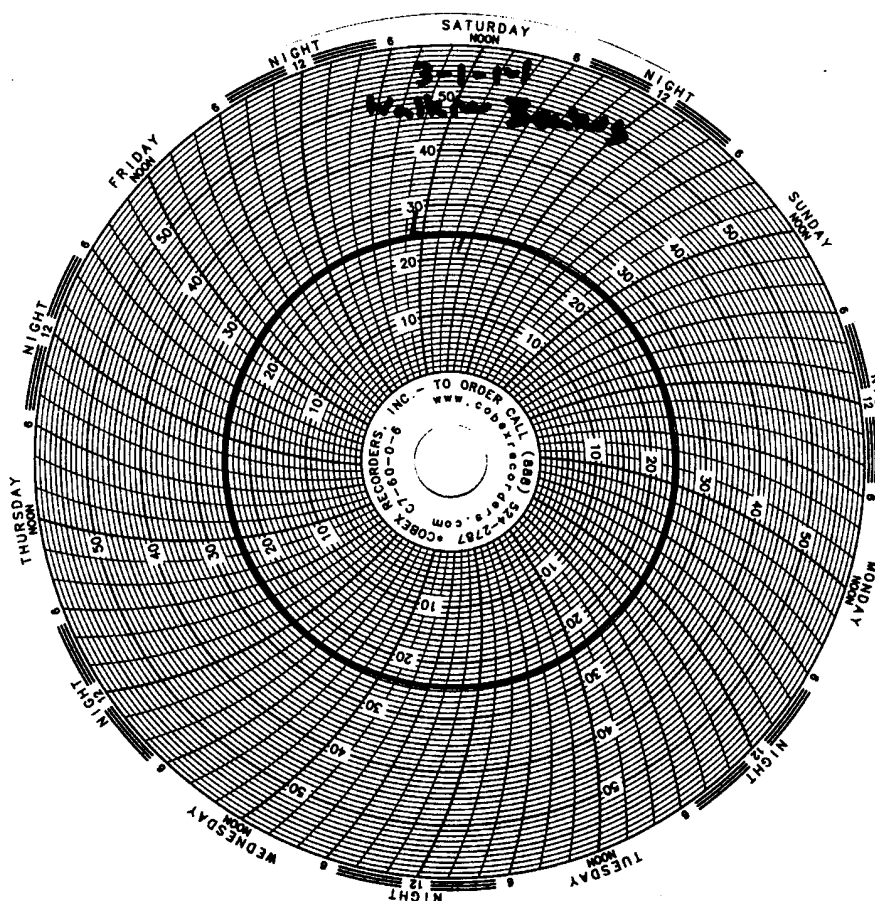
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1A	2A	3A	1B	3B	2E	3E	1F	1H	2H

Test Temperature Chart

Test No: **RT-140301**

Date Tested: **03/01/14 to 03/08/14**

Acceptable Range: **25 +/- 1°C**



H4C040429 Analytical Report 1
Sample Receipt Documentation 16

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 440-71553-1

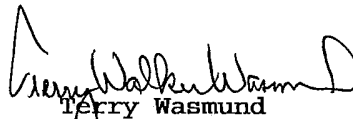
Boeing SSFL Outfalls

Lot #: H4C040429

Debby Wilson

TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817

TESTAMERICA LABORATORIES, INC.


Terry Wasmund
Project Manager

March 18, 2014



ANALYTICAL METHODS SUMMARY

H4C040429

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Dioxins/Furans, HRGC/HRMS	EPA-5 1613B

References :

EPA-5 "Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution, HRGC/HRMS, Revision B", EPA, OCTOBER 1994

SAMPLE SUMMARY

H4C040429

WO #	SAMPLE#	CLIENT	SAMPLE ID	SAMPLED DATE	SAMP TIME
M257G	001	OUTFALL	010_201311	02/28/14	12:00

NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.



PROJECT NARRATIVE H4C040429

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Comment:

The total estimated detection limits (EDLs) were manually changed to the lowest EDL reported within that homolog group.

The following flags are used to qualify results for chlorinated dioxin and furan results:

J – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is “the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point”. The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report, the ML is qualitatively defined as described above, and quantitatively defined as follows:

Minimum Level: The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.

Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

PROJECT NARRATIVE H4C040429

E – The reported result is an estimate. The amount reported is above the Upper Calibration Level (UCL) described below. The quantitative definition of the UCL is listed below:

Upper Calibration Level: The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Example: The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this example, all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

B – The analyte is present in the associated method blank at a detectable level. For this analysis, there is no method specified reporting level other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of ≥ 2.5 to 1. Therefore, the presence of any reportable amount of the analyte in the blank will result in a B qualifier on all associated samples.

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. These may include one or more of the following:

- Ion abundance ratios must be within specified limits ($\pm 15\%$ of theoretical ion abundance ratio).
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- 2,3,7,8-TCDF result is reported from the non-isomer specific Rtx-5 column.
- Polychlorinated dibenzofuran purity. An interference may be present on the indicated polychlorinated dibenzofuran when a polychlorinated diphenyl ether peak is present and maximizes within ± 3 seconds of the dibenzofuran candidate.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer.

PROJECT NARRATIVE H4C040429

X – Other. See explanation in narrative.

Laboratory studies supporting risk assessment and Total Maximum Daily Load (TMDL) evaluations, frequently use qualified data reported as low as the Method Detection Limit (MDL), or the Estimated Detection Limit (EDL). Several of EPA's isotope dilution methods employ the EDL.^{1,2,3} The EDL is based on a direct measurement of the signal-to-noise (S/N) ratio acquired during sample analysis. This S/N measurement is used to calculate the concentration in the sample corresponding to the minimum intensity of the smallest quantifiable peak. The EDL reflects the amount of the particular analyte which would be required to cause a positive result for the particular analysis. Because the S/N obtained covaries with recovery, instrument sensitivity and sample-specific cleanup efficacy, the EDL is a more valid measure of the sensitivity of the entire analytical process for the specific sample than is an MDL run periodically on a reference matrix.

The EDL is typically calculated according to the following equation:

$$\text{Estimated Detection Limit} = \frac{N \times 2.5 \times Q_{is}}{H_{is} \times RRF \times W \times S}$$

Where:

- N = peak to peak noise of quantitation ion signal in the region of the ion chromatogram where the compound of interest is expected to elute
- H_{is} = peak height of quantitation ion for appropriate internal standard
- Q_{is} = ng of internal standard added to sample
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

(The area of the internal standard is sometimes used instead of height, along with an area-to-height conversion factor.)

This method of estimating the detection limit differs from the MDL in that it does not carry the requirement that the sample be statistically distinguished as being from a contaminated population. As results approach the EDL, the risk of false positives and the analytical uncertainty increase significantly. However, a low false positive well below the ML or MDL is often closer to the true value than an assumption that the target analyte is present at the detection or reporting limits. For relatively clean samples, MDL studies may give an elevated estimate of the detection limit. Additionally, on contaminated samples, the MDL may give a falsely low estimate of the detection limit.

$$\text{Analyte Concentration} = \frac{A_s \times Q_{is}}{A_{is} \times RRF \times W \times S}$$

Where:

- A_s = Sum of areas of the target peaks

PROJECT NARRATIVE H4C040429

Qis	=	ng of internal standard added to sample
Ais	=	Sum of areas of the internal standard peaks
RRF	=	mean relative response factor of compound obtained during initial calibration
W	=	amount of sample extracted (grams or liters)
S	=	percent solids (optional, if results are requested to be reported on dry weight basis)

In sample data, peaks must have an intensity of ≥ 2.5 times the height of the background noise in order to be considered. Careful examination of the two equations above reveals that for the concentration of the smallest peak detectable (per the EDL equation) to exactly equal the smallest peaks that are calculated, requires that the average height to area ratio obtained during the calibration must equal the area to height ratio for every peak obtained near 2.5 times the noise. When the area to height ratio on a peak in a sample is less than the average obtained during calibration, the calculated result will correspond to a peak that would have been less than 2.5 times the noise on the calibration. This is the result of normal variability. Because the source methods for the EDL (SW-846 8290 and 8280A) do not provide for censoring of results by any other magnitude standard than being 2.5 times the noise, the laboratory does not censor at the calculated EDL. Hence, detections may be reported below the estimated detection limits.

Footnotes:

1. Code of Federal Regulations, Part 136, Chapter 1, Appendix 1, October 1994: Method 1613 Tetra- Through Octa-Chlorinated Dioxins and Furans by Isotope Dilution High Resolution Gas Chromatography/High Resolution Mass Spectrometry.
2. U.S. EPA. Test Methods for Evaluating Solid Waste, Volume II, SW-846, Update III, December 1996. Method 8280A: The Analysis of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/Low Resolution Mass Spectrometry.
3. U.S. EPA. Test Methods for Evaluating Solid Waste, SW-846. Third Edition. March 1995 Method 8290: Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	L-A-B	DoD ELAP		L2311
TestAmerica Knoxville	Arkansas DEQ	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana DOHH	State Program	6	LA110001
TestAmerica Knoxville	Louisiana DEQ	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina DENR	State Program	4	64
TestAmerica Knoxville	North Carolina DHHS	State Program	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	Federal	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	NELAC	3	460176
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia DEP	State Program	3	345
TestAmerica Knoxville	West Virginia DHHR	State Program	3	9955C

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Sample Data Summary

TestAmerica Irvine
Sample ID: OUTFALL 010_201311
Trace Level Organic Compounds

Lot - Sample #....: H4C040429 - 001	Work Order #....: M257G1AA	Matrix....: WG
Date Sampled....: 02/28/14	Date Received....: 03/04/14	Dilution Factor: 1
Prep Date....: 03/06/14	Analysis Date....: 03/17/14	
Prep Batch #: 4065015		
Initial Wgt/Vol : 1049 mL	Instrument ID....: M2A	Method: EPA-5 1613B
Analyst ID....: Kathryn B. Lay		

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		0.00000953	0.00000358	ug/L
Total TCDD	ND		0.00000953	0.00000358	ug/L
1,2,3,7,8-PeCDD	ND		0.0000477	0.00000224	ug/L
Total PeCDD	ND		0.0000477	0.00000224	ug/L
1,2,3,4,7,8-HxCDD	ND		0.0000477	0.00000178	ug/L
1,2,3,6,7,8-HxCDD	0.00000386	Q J	0.0000477	0.00000186	ug/L
1,2,3,7,8,9-HxCDD	ND		0.0000477	0.00000169	ug/L
Total HxCDD	0.0000160	J Q	0.0000477	0.00000169	ug/L
1,2,3,4,6,7,8-HpCDD	0.0000719		0.0000477	0.00000267	ug/L
Total HpCDD	0.000168		0.0000477	0.00000267	ug/L
OCDD	0.000764	B	0.0000953	0.00000364	ug/L
2,3,7,8-TCDF	ND		0.00000953	0.00000243	ug/L
Total TCDF	ND		0.00000953	0.00000243	ug/L
1,2,3,7,8-PeCDF	ND		0.0000477	0.00000178	ug/L
2,3,4,7,8-PeCDF	ND		0.0000477	0.00000156	ug/L
Total PeCDF	ND		0.0000477	0.00000156	ug/L
1,2,3,4,7,8-HxCDF	ND		0.0000477	0.00000114	ug/L
1,2,3,6,7,8-HxCDF	ND		0.0000477	0.00000113	ug/L
2,3,4,6,7,8-HxCDF	ND		0.0000477	0.00000108	ug/L
1,2,3,7,8,9-HxCDF	ND		0.0000477	0.00000115	ug/L
Total HxCDF	0.00000993	J Q	0.0000477	0.00000108	ug/L
1,2,3,4,6,7,8-HpCDF	0.0000147	J	0.0000477	0.00000190	ug/L
1,2,3,4,7,8,9-HpCDF	ND		0.0000477	0.00000234	ug/L
Total HpCDF	0.0000325	J	0.0000477	0.00000190	ug/L
OCDF	0.0000435	J	0.0000953	0.00000255	ug/L

TestAmerica Irvine
Sample ID: OUTFALL 010_201311
Trace Level Organic Compounds

Lot - Sample #....:	H4C040429 - 001	Work Order #....:	M257G1AA	Matrix....:	WG
Date Sampled....:	02/28/14	Date Received....:	03/04/14	Dilution Factor:	1
Prep Date....:	03/06/14	Analysis Date....:	03/17/14		
Prep Batch #:	4065015				
Initial Wgt/Vol :	1049 mL	Instrument ID....:	M2A	Method:	EPA-5 1613B
Analyst ID....:	Kathryn B. Lay				

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	85	25 - 164
13C-1,2,3,7,8-PeCDD	89	25 - 181
13C-1,2,3,4,7,8-HxCDD	82	32 - 141
13C-1,2,3,6,7,8-HxCDD	85	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	81	23 - 140
13C-OCDD	76	17 - 157
13C-2,3,7,8-TCDF	74	24 - 169
13C-1,2,3,7,8-PeCDF	83	24 - 185
13C-2,3,4,7,8-PeCDF	73	21 - 178
13C-1,2,3,4,7,8-HxCDF	74	26 - 152
13C-1,2,3,6,7,8-HxCDF	72	26 - 123
13C-2,3,4,6,7,8-HxCDF	78	28 - 136
13C-1,2,3,7,8,9-HxCDF	93	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	77	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	82	26 - 138
13C-OCDF	74	17 - 157

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	92	35 - 197

QUALIFIERS

- B Method blank contamination. The associated method blank contains the target analyte at a reportable level.
 J Estimated Result.
 Q Estimated maximum possible concentration (EMPC).

Method Blank Report
Trace Level Organic Compounds

Lot - Sample #....: H4C060000 - 015B Work Order #....: M26QE1AA Matrix....: WATER
 Dilution Factor: 1
 Prep Date....: 03/06/14 Analysis Date....: 03/14/14
 Prep Batch #: 4065015
 Initial Wgt/Vol : 1000 mL Instrument ID....: M2A Method: EPA-5 1613B
 Analyst ID....: Patricia(Trish) M. Parsly

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND	0.0000100	0.00000470	ug/L
Total TCDD	ND	0.0000100	0.00000470	ug/L
1,2,3,7,8-PeCDD	ND	0.0000500	0.00000226	ug/L
Total PeCDD	ND	0.0000500	0.00000226	ug/L
1,2,3,4,7,8-HxCDD	ND	0.0000500	0.00000167	ug/L
1,2,3,6,7,8-HxCDD	ND	0.0000500	0.00000194	ug/L
1,2,3,7,8,9-HxCDD	ND	0.0000500	0.00000167	ug/L
Total HxCDD	ND	0.0000500	0.00000167	ug/L
1,2,3,4,6,7,8-HpCDD	ND	0.0000500	0.00000300	ug/L
Total HpCDD	ND	0.0000500	0.00000300	ug/L
OCDD	0.00000722 Q J	0.000100	0.00000221	ug/L
2,3,7,8-TCDF	ND	0.0000100	0.00000345	ug/L
Total TCDF	ND	0.0000100	0.00000345	ug/L
1,2,3,7,8-PeCDF	ND	0.0000500	0.00000211	ug/L
2,3,4,7,8-PeCDF	ND	0.0000500	0.00000189	ug/L
Total PeCDF	ND	0.0000500	0.00000189	ug/L
1,2,3,4,7,8-HxCDF	ND	0.0000500	0.000000940	ug/L
1,2,3,6,7,8-HxCDF	ND	0.0000500	0.000000910	ug/L
2,3,4,6,7,8-HxCDF	ND	0.0000500	0.000000870	ug/L
1,2,3,7,8,9-HxCDF	ND	0.0000500	0.000000980	ug/L
Total HxCDF	ND	0.0000500	0.000000870	ug/L
1,2,3,4,6,7,8-HpCDF	ND	0.0000500	0.00000156	ug/L
1,2,3,4,7,8,9-HpCDF	ND	0.0000500	0.00000224	ug/L
Total HpCDF	ND	0.0000500	0.00000156	ug/L
OCDF	ND	0.000100	0.00000287	ug/L

Method Blank Report
Trace Level Organic Compounds

Lot - Sample #....: H4C060000 - 015B Work Order #....: M26QE1AA Matrix....: WATER
 Dilution Factor: 1
 Prep Date....: 03/06/14 Analysis Date....: 03/14/14
 Prep Batch #: 4065015
 Initial Wgt/Vol: 1000 mL Instrument ID....: M2A Method: EPA-5 1613B
 Analyst ID....: Patricia(Trish) M. Parsly

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	85	25 - 164
13C-1,2,3,7,8-PeCDD	96	25 - 181
13C-1,2,3,4,7,8-HxCDD	93	32 - 141
13C-1,2,3,6,7,8-HxCDD	89	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	87	23 - 140
13C-OCDD	82	17 - 157
13C-2,3,7,8-TCDF	81	24 - 169
13C-1,2,3,7,8-PeCDF	90	24 - 185
13C-2,3,4,7,8-PeCDF	79	21 - 178
13C-1,2,3,4,7,8-HxCDF	81	26 - 152
13C-1,2,3,6,7,8-HxCDF	79	26 - 123
13C-2,3,4,6,7,8-HxCDF	81	28 - 136
13C-1,2,3,7,8,9-HxCDF	90	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	82	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	77	26 - 138
13C-OCDF	77	17 - 157
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	100	35 - 197

QUALIFIERS

- J Estimated Result.
 Q Estimated maximum possible concentration (EMPC).

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...: H4C040429 Work Order # ...: M26QE1AC-LCS Matrix: WATER
 LCS Lot-Sample#: H4C060000 - 015
 Prep Date: 03/06/14 Analysis Date ..: 03/15/14
 Prep Batch # ...: 4065015
 Dilution Factor : 1
 Analyst ID.....: Melissa A. Davidson Instrument ID..: M2A Method.....: EPA-5 1613B
 Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RECOVERY LIMITS
2,3,7,8-TCDD	0.0002	0.0001	ug/L	97	(67 - 158)
1,2,3,7,8-PeCDD	0.0010	0.0009	ug/L	99	(70 - 142)
1,2,3,4,7,8-HxCDD	0.0010	0.0009	ug/L	93	(70 - 164)
1,2,3,6,7,8-HxCDD	0.0010	0.0009	ug/L	96	(76 - 134)
1,2,3,7,8,9-HxCDD	0.0010	0.0009	ug/L	94	(64 - 162)
1,2,3,4,6,7,8-HpCDD	0.0010	0.0009	ug/L	91	(70 - 140)
OCDD	0.0020	0.0018	ug/L	92 B	(78 - 144)
2,3,7,8-TCDF	0.0002	0.0002	ug/L	102	(75 - 158)
1,2,3,7,8-PeCDF	0.0010	0.0009	ug/L	93	(80 - 134)
2,3,4,7,8-PeCDF	0.0010	0.0009	ug/L	93	(68 - 160)
1,2,3,4,7,8-HxCDF	0.0010	0.0009	ug/L	93	(72 - 134)
1,2,3,6,7,8-HxCDF	0.0010	0.0009	ug/L	94	(84 - 130)
2,3,4,6,7,8-HxCDF	0.0010	0.0009	ug/L	95	(70 - 156)
1,2,3,7,8,9-HxCDF	0.0010	0.0009	ug/L	95	(78 - 130)
1,2,3,4,6,7,8-HpCDF	0.0010	0.0009	ug/L	92	(82 - 122)
1,2,3,4,7,8,9-HpCDF	0.0010	0.0009	ug/L	91	(78 - 138)
OCDF	0.0020	0.0018	ug/L	92	(63 - 170)

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	86	(20 - 175)
13C-1,2,3,7,8-PeCDD	101	(21 - 227)
13C-1,2,3,4,7,8-HxCDD	92	(21 - 193)
13C-1,2,3,6,7,8-HxCDD	84	(25 - 163)
13C-1,2,3,4,6,7,8-HpCDD	95	(26 - 166)
13C-OCDD	97	(13 - 199)
13C-2,3,7,8-TCDF	84	(22 - 152)
13C-1,2,3,7,8-PeCDF	96	(21 - 192)
13C-2,3,4,7,8-PeCDF	89	(13 - 328)
13C-1,2,3,4,7,8-HxCDF	83	(19 - 202)
13C-1,2,3,6,7,8-HxCDF	82	(21 - 159)
13C-2,3,4,6,7,8-HxCDF	84	(22 - 176)
13C-1,2,3,7,8,9-HxCDF	86	(17 - 205)
13C-1,2,3,4,6,7,8-HpCDF	86	(21 - 158)
13C-1,2,3,4,7,8,9-HpCDF	80	(20 - 186)
13C-OCDF	86	(13 - 199)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	103	(31 - 191)

LABORATORY CONTROL SAMPLE DATA REPORT**Trace Level Organic Compounds****Notes:**

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

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Sample Receipt Documentation

TestAmerica Irvine
 17461 Derian Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

H4C040429



Client Information (Sub Contract Lab)		Lab P.M.: Wilson, Debby S		Carrier Tracking No(s):	
Client Contact: Shipping/Receiving		E-Mail: debby.wilson@testamericainc.com		Page: 1 of 1	
Company: TestAmerica Laboratories, Inc.		Address: 5815 Middlebrook Pike, Knoxville TN, 37921		Job #: 440-71553-1	
Phone: 865-291-3000 (Tel) 865-584-4315 (Fax)		E-mail:		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 H - Ascorbic Acid U - Acetone J - DI Water K - EDTA L - EDA Other:	
Project Name: Boeing SSFL outfalls		Project #: 44009879		Analysis Requested	
Site:		SSOW#:		Total Number of Containers	
Due Date Requested: 3/12/2014		TAT Requested (days):		Special Instructions/Note: See QAS Boeing_w/lu to zero. ug/L	
PO #:		WO #:		SUB (1613 dioxin) / 1613 dioxin	
Field Filtered Sample (Yes or No)		Matrix (Water, Solid, or Tissue, As-At)		Perform MS/MSD (Yes or No)	
Sample Date		Sample Type (C=comp, G=grab)		X PH=7 RC-MD	
Sample Date: 2/28/14		Sample Time: 12:00 Pacific		Matrix: Water	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time	
Outfall 010_201311 (440-71553-1)		2/28/14		12:00 Pacific	
Possible Hazard Identification		Unconfirmed		Deliverable Requested: I, II, III, IV, Other (specify)	
Empty Kit Relinquished by:		Date:		Special Instructions/QC Requirements:	
Relinquished by: <i>[Signature]</i>		Date: 3/3/14 1200		Return To Client <input type="checkbox"/> Archive For Months	
Relinquished by: <i>[Signature]</i>		Date: 3/4/14 1030		Method of Shipment:	
Relinquished by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:	
Custody Seals Intact: A Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	



TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: H4C040429

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)				<input type="checkbox"/> 1a Do not match COC <input type="checkbox"/> 1b Incomplete information <input type="checkbox"/> 1c Marking smeared <input type="checkbox"/> 1d Label torn <input type="checkbox"/> 1e No label <input type="checkbox"/> 1f COC not received <input type="checkbox"/> 1g Other:	
2. Is the cooler temperature within limits? (> freezing temp. of water to 6°C, VOST: 10°C) Thermometer ID: <u>SC60</u>	/			<input type="checkbox"/> 2a Temp Blank = _____ <input type="checkbox"/> 2b Cooler Temp = _____ <input type="checkbox"/> 2c Cooling initiated for recently collected samples, ice present.	
3. Were samples received with correct chemical preservative (excluding Encore)?			/	<input type="checkbox"/> 3a See box 3A for pH Preservation <input type="checkbox"/> 3b Other:	
4. Were custody seals present/intact on cooler and/or containers?	/			<input type="checkbox"/> 4a Not present <input type="checkbox"/> 4b Not intact <input type="checkbox"/> 4c Other:	
5. Were all of the samples listed on the COC received?	/			<input type="checkbox"/> 5a Samples received-not on COC <input type="checkbox"/> 5b Samples not received-on COC	
6. Were all of the sample containers received intact?	/			<input type="checkbox"/> 6a Leaking <input type="checkbox"/> 6b Broken	
7. Were VOA samples received without headspace?	/		/	<input type="checkbox"/> 7a Headspace (VOA only)	
8. Were samples received in appropriate containers?	/			<input type="checkbox"/> 8a Improper container	
9. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number: <u>3240 2016/06</u>	/			<input type="checkbox"/> 9a Could not be determined due to matrix interference	
10. Were samples received within holding time?	/			<input type="checkbox"/> 10a Holding time expired	
11. For rad samples, was sample activity info. provided?			/	<input type="checkbox"/> Incomplete information	
12. For 1613B water samples is pH<9?	/			If no, was pH adjusted to pH 7 - 9 with sulfuric acid? <input type="checkbox"/> 13a Leaking <input type="checkbox"/> 13b Other:	pH test strip lot number: <u>HC211982</u>
13. Are the shipping containers intact?	/			<input type="checkbox"/> 14a Not relinquished	Box 3A: pH Preservation Box 9A: Residual Chlorine
14. Was COC relinquished? (Signed/Dated/Timed)	/			<input type="checkbox"/> 15a Incomplete information	Preservative: _____
15. Are tests/parameters listed for each sample?	/			<input type="checkbox"/> 15a Incomplete information	Lot Number: _____
16. Is the matrix of the samples noted?	/			<input type="checkbox"/> 15a Incomplete information	Exp Date: _____
17. Is the date/time of sample collection noted?	/			<input type="checkbox"/> 15a Incomplete information	Analyst: _____
18. Is the client and project name/# identified?	/			<input type="checkbox"/> 15a Incomplete information	Date: _____
19. Was the sampler identified on the COC?	/			<input type="checkbox"/> 19a Other	Time: _____

Quote #: 90493 PM Instructions: _____

Sample Receiving Associate: [Signature] Date: 3/9/14

QA026R27.doc, I23013



CHAIN OF CUSTODY FORM

Client Name/Address:
 Hatley & Aldrich, Inc.
 9040 Friars Road Suite 220
 San Diego, CA 92108-5860

Project:
 Boeing-SSFL NPDES
 Annual and Routine Outfall 010
 GRAB
 Stormwater at Building 203

Test America Contact: Debby Wilson

Phone Number:
 619.285.7132, 958.337.4061 (cell)
 Field Manager: Jeff Bannan
 818.350.7340, 818.414.5608 (cell)

Project Manager: Nancy Gardiner

Sampler:

Sample Description	Sample Matrix	Container Type	# of Can.	Sample ID	Sampling Date/Time	Preservative	Bottle #	Oil & Grease (1681-HEM)	VOCs 624, Xylenes + PP	VOCs 624 +A+A+2C+VE	Cr(VI) (218.6)	Fecal coliform (SM6221)	E. coli (SM9221)	Acute Toxicity	MST-Bacterioidales, Human	ANALYSIS REQUIRED	Field readings: (Log in and include in report Temp and pH, include units) Time of readings DO PH Temp. 15.10 °F	Comments
Outfall 010	W	1L Amber	2	Outfall 010_201311	Grab	HCl	1A, 1B	X	X	X	X	X	X	X	X			
Outfall 010	W	VOAS	3	Outfall 010_201311	Grab	HCl	2A, 2B, 2C	X	X	X	X	X	X	X	X			
Outfall 010	W	VOAS	3	Outfall 010_201311	Grab	None	3A, 3B, 3C	X	X	X	X	X	X	X	X			
Tip Blanks	W	VOAS	3	TB-201311	Grab	HCl	4A, 4B, 4C	X	X	X	X	X	X	X	X			
Tip Blanks	W	VOAS	3	TB-201311	Grab	None	5A, 5B, 5C	X	X	X	X	X	X	X	X			
Outfall 010	W	800 mL Poly	1	Outfall 010_201311	Grab	None	6	X	X	X	X	X	X	X	X			
Outfall 010	W	125 mL Poly	1	Outfall 010_201311	Grab	None	7	X	X	X	X	X	X	X	X			
Outfall 010	W	125 mL Poly	1	Outfall 010_201311	Grab	None	8	X	X	X	X	X	X	X	X			
Outfall 010	W	1 Gal Cube	1	Outfall 010_201311	Grab	None	9	X	X	X	X	X	X	X	X			
Outfall 010	W	125mL Poly	1	Outfall 010_201311	Grab	None	13	X	X	X	X	X	X	X	X			

These Samples are the Grab Portion of Outfall 010 for this storm event. Composite samples will follow and are to be added to this work order.

Legend: R = Routine, A = Annual

Received By: *[Signature]* Date/Time: 5/14/14 1:00

Received By: *[Signature]* Date/Time: 5/14/14 1:00

Turn-around time (Check):
 24 Hour _____ 72 Hour _____ 10 Day _____
 48 Hour _____ 5 Day _____
 Sample integrity (Check):
 On ice *DATE* *ST*

Reinforced By: _____ Orientation: _____
 Date/Time: _____
 Data Requirements (Check):
 All Level IV _____ NPDES Level IV _____

Please revise Sample IDs on pages 1 and 2 to:

Outfall 010_20140328 - Grab
 TR-20140328
 ZF 3-4-14



440-71553-REV

Client Name/Address:
 Haley & Aldrich, Inc.
 8040 Friars Road Suite 220
 San Diego, CA 92108-5880

Project:
 Boeing-SFTL NPDES
 Annual and Routine Outfall 010
 COMPOSITE
 Stormwater at Building 203

Test America Contact: Debby Wilson

Phone Number:
 619.285.7132, 658.337.4051 (cell)
 Field Manager: Jeff Bannan
 818.350.7340, 818.414.8808 (cell)

Project Manager: Nancy Gardner
 Sampler:

Sample Description	Sample Matrix	Container Type	# of cans	Sample ID	Sampling Year/Date	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Ti	TCOD (and all congeners)	Cr, SO ₄ , NO ₂ , NO ₃ -N	TDS	TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Ti	Gross Alpha (900.0), Gross Beta (900.0), Tritium (T-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 913.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Chronic Toxicity	Cyanide	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, B, V, Tl, Fe, Al, + PP, Hardness as CaCO ₃	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, B, V, Tl, Fe, Al, + PP, Hardness as CaCO ₃	F, Perchlorate	Pesticides/PCBs, Chlorypyrifos, Diazinon + PP	SVOCs (825) + PP	Comments	
Outfall 010	W	1L Poly	1	Outfall 010_201311	2013/11/14	None	2A	X									X						
Outfall 010	W	1L Amber	2	Outfall 010_201311	2013/11/14	None	3A, 3B		X														
Outfall 010	W	600 mL Poly	2	Outfall 010_201311	2013/11/14	None	4A, 4B			X													
Outfall 010	W	600 mL Poly	1	Outfall 010_201311	2013/11/14	None	5				X												
Outfall 010	W	1L Poly	1	Outfall 010_201311	2013/11/14	None	6					X											
Outfall 010	W	1.5 Gall Data	1	Outfall 010_201311	2013/11/14	None	7A							X									
Outfall 010	W	600 mL Amber	1	Outfall 010_201311	2013/11/14	None	7B								X								
Outfall 010	W	1 Gall Poly	1	Outfall 010_201311	2013/11/14	None	8																
Outfall 010	W	500 mL Poly	1	Outfall 010_201311	2013/11/14	NICK	9																
Outfall 010	W	1L Amber	2	Outfall 010_201311	2013/11/14	None	14A, 14B																
Outfall 010	W	1L Amber	2	Outfall 010_201311	2013/11/14	None	14A, 14B																
Outfall 010	W	1L Poly	1	Outfall 010_201311	2013/11/14	None	5					X											

COC Page 2 of 2 list the Composite Samples for Outfall 010 for this storm event.
 Legend: R = Routine, A = Annual

Received by: [Signature] Date/Time: 11/14/2013

Received by: [Signature] Date/Time: 2/28/14 18:00

Received by: [Signature] Date/Time: 6-8/6-7 (SQ)

12 Hour: _____ 10 Day: _____
 24 Hour: _____ 30 Day: _____
 48 Hour: _____ 90 Day: _____

Sample Integrity: (Check) On for: _____


Date Requirements (Check) At Level IV: _____

NPDES Limit: _____

440-71553-REV

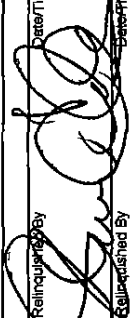
CHAIN OF CUSTODY FORM

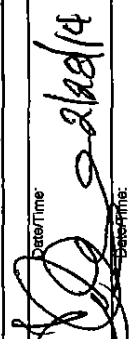
440-71553


Client Name/Address: Haley & Aldrich, Inc. 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SSFL NPDES Annual and Routine Outfall 010 GRAB Stormwater at Building 203			ANALYSIS REQUIRED										Field readings: (Log in and include in report Temp and pH. Include units) Time of readings: 1300 DO 7.85 pH 7.32 pH Unit Temp 15.10 °F
Test America Contact: Debby Wilson		Project Manager: Nancy Gardiner Phone Number: 619.285.7132, 858.337.4061(cell) Field Manager: Jeff Bannon 818.350.7340, 818.414.5608(cell)			MST-Bacteroidales, Human										 440-71553 Chain of Custody
Sample Description	Sample Matrix	Container Type	# of Cont.	Sample I.D.	Sample Date/Time	Preservative	Bottle #	VOCs 624 + A + A + 2CVE	VOCs 624, Xylenes + PP	Cr (M) (218.6)	Fecal coliform (SM821)	E. coli (SM9221)	Aquatic Toxicity	Comments	
Outfall 010	W	1L Amber	2	Outfall 010_201311	Grab	HCl	1A, 1B	X							
Outfall 010	W	VOAs	3	Outfall 010_201311	Grab	HCl	2A, 2B, 2C		X						
Outfall 010	W	VOAs	3	Outfall 010_201311	Grab	None	3A, 3B, 3C								
Trip Blanks	W	VOAs	3	TB-201311		HCl	4A, 4B, 4C		X						
Trip Blanks	W	VOAs	3	TB-201311		None	5A, 5B, 5C			X					
Outfall 010	W	900 mL Poly	1	Outfall 010_201311	Grab	None	6								
Outfall 010	W	125 mL Poly	1	Outfall 010_201311	Grab	Na2S2O3	7			X					
Outfall 010	W	125 mL Poly	1	Outfall 010_201311	Grab	Na2S2O3	8				X				
Outfall 010	W	1 Gall Cube	1	Outfall 010_201311	Grab	None	9					X			
Outfall 010	W	125mL Poly	1	Outfall 010_201311	Grab	None	13						X	Deliver to lab ASAP	

These Samples are the Grab Portion of Outfall 010 for this storm event. Composite samples will follow and are to be added to this work order.

Legend: R = Routine, A = Annual

Relinquished By:  Date/Time: 2/28/14 1000

Requested By:  Date/Time: 2/28/14 1800

Received By:  Date/Time: 2/28/14 1800

Turn-around time (Check):
 24 Hour: _____ 72 Hour: _____ 10 Day: _____
 48 Hour: _____ 5 Day: _____ Normal: _____
 Sample Integrity (Check):
 Intact: _____ On Ice: 2-216-7 ST
 Data Requirements (Check):
 All Level IV: _____ NPDES Level IV: _____



440-71553

Client Name/Address: Haley & Aldrich, Inc. 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boiling-SSFL NPDES Annual and Routine Outfall 010 COMPOSITE Stormwater at Building 203		Project Manager: Nancy Gardiner Sampler:		Phone Number: 619.285.7132, 858.337.4061 (cell) Field Manager: Jeff Bannon 818.350.7340, 818.414.5608 (cell)	
Sample Description	Sample Matrix	Container Type	# of Cont.	Sample I.D.	Sample I.D.	Preservative	Bottle #
Outfall 010	W	1L Poly	1	Outfall 010_201311	Comp	HNO ₃	2A
Outfall 010	W	1L Amber	2	Outfall 010_201311	Comp	None	3A, 3B
Outfall 010	W	500 mL Poly	2	Outfall 010_201311	Comp	None	4A, 4B
Outfall 010	W	500 mL Poly	1	Outfall 010_201311	Comp	None	5
Outfall 010	W	1L Poly	1	Outfall 010_201311	Comp	None	6
Outfall 010	W	25 Gal Cites	1	Outfall 010_201311	Comp	None	7A
Outfall 010	W	500 mL Amber	1	Outfall 010_201311	Comp	None	7B
Outfall 010	W	1 Gal Poly	1	Outfall 010_201311	Comp	None	8
Outfall 010	W	500 mL Poly	1	Outfall 010_201311	Comp	NaOH	9
Outfall 010	W	1L Amber	2	Outfall 010_201311	Comp	None	14A, 14B
Outfall 010	W	1L Amber	2	Outfall 010_201311	Comp	None	16A, 16B
Outfall 010	W	1L Poly	1	Outfall 010_201311	Comp	None	5

COC Page 2 of 2 list the Composite Samples for Outfall 010 for this storm event.
 These must be added to the same work order for COC Page 1 of 2 for Outfall 010 for the same event.

Relinquished By	Date/Time	Received By	Date/Time
	2/28/14 1800		2/28/14 1800
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Legend: R = Routine, A = Annual

Turnaround time (Check):
 24 Hour: _____
 48 Hour: _____
 72 Hour: _____
 5 Day: _____
 10 Day: _____
 Normal: _____

Sample Integrity: (Check)
 Intact: _____
 On Ice: _____

Date: 2-8-14

NPDES Level IV: _____
 All Level IV: _____
 Data Requirements (Check)
 No Level IV: _____

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-71553-1

Login Number: 71553

List Number: 1

Creator: Chavez, Elizabeth

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-71553-1

Login Number: 71553

List Number: 1

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

List Creation: 03/04/14 11:55 AM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1, 3.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-71553-1

Login Number: 71553

List Number: 2

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

List Creation: 03/04/14 11:56 AM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1, 3.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	
440-71553-1	Outfall010_20140228_Grab	72.3	
440-71553-3	BLK	104	
440-71553-3 DU	BLK	105	
LCS 160-108343/2-A	Lab Control Sample	106	
MB 160-108343/1-A	Method Blank	107	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
440-71553-1	Outfall010_20140228_Grab	72.3	84.7
440-71553-3	BLK	104	88.0
440-71553-3 DU	BLK	105	89.2
LCS 160-108344/2-A	Lab Control Sample	106	86.3
MB 160-108344/1-A	Method Blank	107	86.3
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			

Method: 905 - Strontium-90 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Sr (C) (40-110)	Y (40-110)
440-71553-1	Outfall010_20140228_Grab	80.9	87.1
440-71553-3	BLK	88.3	91.2
440-71553-3 DU	BLK	88.5	93.6
LCS 160-108916/2-A	Lab Control Sample	92.4	86.7
MB 160-108916/1-A	Method Blank	91.1	90.4
Tracer/Carrier Legend			
Sr (C) = Sr Carrier			
Y = Y Carrier			

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	U-232 (30-110)	
440-71432-P-1-G DU	Duplicate	87.1	
LCS 160-109757/2-A	Lab Control Sample	80.6	
MB 160-109757/1-A	Method Blank	74.9	

TestAmerica Irvine

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfall 10 Annual

TestAmerica Job ID: 440-71553-1

Tracer/Carrier Legend

U-232 = Uranium-232

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-71421-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Haley & Aldrich Boeing SSFL Stormwater
 Contract Task Order: 1272.003H.01 001
 Sample Delivery Group: 440-71421-1
 Project Manager: K. Miller
 Matrix: Water
 QC Level: IV
 No. of Samples: 1
 No. of Reanalyses/Dilutions: 0
 Laboratory: TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSimi-20140228	440-71421-1	N/A	Water	2/28/2014 11:00:00 AM	1613B, SM2340, SM2540D, SM9221E, SM9221F

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice within the control limits of 4°C ±2°C. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved, if applicable. The COC was appropriately signed and dated by field and laboratory personnel.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 1613B—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: April 4, 2014

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0)*, *USEPA Method 1613B*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (2011)*.

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.
- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.
 - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.
 - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.
- Calibration: Calibration criteria were met.
 - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs $\leq 20\%$ for the 15 native compounds (calibration by isotope dilution) and $\leq 35\%$ for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613B control limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of the analytical sequence. The VER was acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613B. The ion abundance ratios and relative retention times were within the method control limits.
- Blanks: The method blank had a detect below the reporting limit for OCDD at 0.0000072 $\mu\text{g/L}$; however, the concentration of OCDD in the associated sample significantly exceeded the method blank concentration and required no qualification. The method blank had no other detects above the estimated detection limit (EDL).

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria listed in Table 6 of Method 1613B.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: This SDG had no identified field duplicate samples.
- Internal Standards Performance: The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613B. As 2,3,7,8-TCDF was not detected in the sample, confirmation analysis was unnecessary.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613B.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any sample detects and a representative number of blank spike concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Any detects between the EDL and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

Isomer 1,2,3,6,7,8-HxCDF was reported as an EMPC in the sample. The result was qualified as an estimated nondetect, "UJ," at the level of the EMPC. Totals HxCDF, PeCDF, and TCDF were also flagged by the laboratory as containing one or more EMPC peaks. The results for the totals with EMPCs were qualified as estimated, "J."

B. EPA METHOD 200.7—Metals

Reviewed By: P. Meeks
Date Reviewed: April 1, 2014

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Method 200.7, Standard Method SM2340B*, and the *National Functional Guidelines for Inorganic Data Review* (2010).

- Holding Times: The analytical holding time, six months, was met.

- Calibration: Calibration criteria were met. The initial and continuing calibration recoveries were within 90-110%. CRDL/CRI recoveries were within the control limits of 70-130%.
- Blanks: Method blanks and CCBs had no detects affecting sample results.
- Interference Check Samples: Recoveries were within the control limits of 80-120%.
- Blank Spikes and Laboratory Control Samples: Recoveries were within 80-120%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG; however, no summary forms reporting the results were provided by the laboratory.
- Serial Dilution: No serial dilution analyses were performed.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-”; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

C. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: March 26, 2014

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *Standard Method for the Examination of Water and Wastewater Methods 2540D, 9221E, and 9221F*, and the *National Functional Guidelines for Inorganic Data Review (2010)*.

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared within six hours of collection, no qualifications were required. TSS was analyzed within seven days of collection.
- Calibration: The TSS balance logs were acceptable. The control results were acceptable.
- Blanks: Not applicable to these methods.
- Blank Spikes and Laboratory Control Samples: TSS was recovered within the control limits of 85-115%. LCS samples are not applicable to biological methods.
- Laboratory Duplicates: A laboratory duplicate analysis was performed for e. coli and fecal coliform. The RPDs were 0%.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these methods.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-“; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 440714211

Analysis Method E1613B

Sample Name ArroyoSimi-20140228 **Matrix Type:** WG **Result Type:** TRG

Sample Date: 2/28/2014 11:00:00 AM **Validation Level:** 3

Lab Sample Name: 440-71421-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	0.0000819	0.00009610.0		ug/L	J	J	DNQ
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000881	0.00009610.0		ug/L	B		
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	0.0000380	0.00004800.0		ug/L	J	J	DNQ
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	0.000103	0.00004800.0		ug/L			
1,2,3,4,7,8-Heptachlorodibenzofuran (HpCDF)	55673-89-7		0.00004800.0		ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9		0.00004800.0		ug/L	U	U	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	39227-28-6		0.00004800.0		ug/L	U	U	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	0.00000958	0.00004800.0		ug/L	QJ	UJ	*III
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	57653-85-7		0.00004800.0		ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9		0.00004800.0		ug/L	U	U	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	19408-74-3	0.00000520	0.00004800.0		ug/L	J	J	DNQ
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6		0.00004800.0		ug/L	U	U	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4		0.00004800.0		ug/L	U	U	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5		0.00004800.0		ug/L	U	U	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4		0.00004800.0		ug/L	U	U	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	51207-31-9		0.00000960.0		ug/L	U	U	
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6		0.00000960.0		ug/L	U	U	
Total Heptachlorodibenzofuran (HpCDF)	38998-75-3	0.0000800	0.00004800.0		ug/L	J	J	DNQ
Total Heptachlorodibenzo-p-dioxin (HpCDD)	37871-00-4	0.000225	0.00004800.0		ug/L			

Analysis Method *E1613B*

Total Hexachlorodibenzofuran (HxCDF)	55684-94-1	0.0000930	0.00004800.0	ug/L	JQ	J	DNQ, *III
Total Hexachlorodibenzo-p-dioxin (HxCDD)	34465-46-8	0.0000242	0.00004800.0	ug/L	J	J	DNQ
Total Pentachlorodibenzofuran (PeCDF)	30402-15-4	0.0000370	0.00004800.0	ug/L	QJ	J	DNQ, *III
Total Pentachlorodibenzo-p-dioxin (PeCDD)	36088-22-9		0.00004800.0	ug/L	U	U	
Total Tetrachlorodibenzofuran (TCDF)	55722-27-5	0.0000288	0.00000960.0	ug/L	Q	J	*III
Total Tetrachlorodibenzo-p-dioxin (TCDD)	41903-57-5		0.00000960.0	ug/L	U	U	

Analysis Method *SM2340***Sample Name** ArroyoSimi-20140228 **Matrix Type:** WG **Result Type:** TRG**Sample Date:** 2/28/2014 11:00:00 AM **Validation Level:** 3**Lab Sample Name:** 440-71421-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness as CaCO3	HARDNESSCA CO3	210	0.33	0.17	mg/L			

Analysis Method *SM2540D***Sample Name** ArroyoSimi-20140228 **Matrix Type:** WG **Result Type:** TRG**Sample Date:** 2/28/2014 11:00:00 AM **Validation Level:** 3**Lab Sample Name:** 440-71421-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids (TSS)	TSS	460	25	13	mg/L			

Analysis Method *SM9221E***Sample Name** ArroyoSimi-20140228 **Matrix Type:** WG **Result Type:** TRG**Sample Date:** 2/28/2014 11:00:00 AM **Validation Level:** 3**Lab Sample Name:** 440-71421-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	COLIFORMFEC AL	1600	1.8	0	mpn/100 >=			

Analysis Method *SM9221F*

Sample Name ArroyoSimi-20140228 **Matrix Type:** WG **Result Type:** TRG

Sample Date: 2/28/2014 11:00:00 AM **Validation Level:** 3

Lab Sample Name: 440-71421-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	ECOLI	1600	1.8	0	mpn/100	>=		

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-71421-1

Client Project/Site: Boeing SSFL outfalls Arroyo

Revision: 1

For:

Haley & Aldrich, Inc.

9040 Friars Rd.

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

3/18/2014 2:58:26 PM

Debby Wilson, Manager of Project Management

(949)261-1022

debby.wilson@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13

14



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	7
Lab Chronicle	8
QC Sample Results	9
QC Association Summary	14
Definitions/Glossary	16
Certification Summary	17
Subcontract Data	19
Chain of Custody	38
Receipt Checklists	39

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-71421-1	Arroyo Simi-20140228	Water	02/28/14 11:00	02/28/14 13:34

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

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Job ID: 440-71421-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-71421-1

Comments

Receipt

The sample was received on 2/28/2014 1:34 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3° C.

GC/MS Semi VOA

Method(s) 525.2: Internal standard responses (Acenaphthene-d10, Phenanthrene-d10 and Chrysene-d12) were outside of acceptance limits for the following sample(s): Arroyo Simi-201402 (440-71421-1). The sample shows evidence of matrix interference. Re-extraction showed similar internal standard recoveries. Matrix interference is therefore confirmed. A high sample bias is implied. The sample was reported based on ND results for all target analytes. No bias detected.

Method(s) 525.2: Surrogate (Triphenylphosphate) recovery for the following sample(s) was outside the upper control limit: Arroyo Simi-201402 (440-71421-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 525.2: The surrogate (Perylene-d12) recovery for the batch laboratory control spike (LCS) was below acceptance limit: (LCS 440-165842/2-A). The associated samples were reported based on individual surrogate recoveries falling within acceptance limits. The sample target analytes are associated with surrogates for which the recoveries are within acceptance limits. No bias detected in the associated samples.

Method(s) 525.2: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 165842.

No other analytical or quality issues were noted.

GC Semi VOA

Method(s) 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 166337 and 167011. See Blank Spike and Blank Spike Duplicate. (LCS 440-166337/6-A) (LCS 440-166337/2-A)

Method(s) 608: The closing continuing calibration verification (CCV) standard associated with batch 166771 failed to meet acceptance limits on both columns used for the analysis. The associated samples were re-analyzed following a successful CCV and produced similar results, indicating that the sample matrix is adversely affecting the columns and causing the failures. (CCV 440-166771/36), Arroyo Simi-201402 (440-71421-1)

No other analytical or quality issues were noted.

Metals

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

General Chemistry

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

Biology

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

Dioxin

Analytical notes included in the attached pdf report from TestAmerica Knoxville.

Organic Prep

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

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Client Sample ID: Arroyo Simi-20140228

Lab Sample ID: 440-71421-1

Date Collected: 02/28/14 11:00

Matrix: Water

Date Received: 02/28/14 13:34

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND	GR	0.96	0.077	ug/L		02/28/14 17:56	03/01/14 00:03	1
Diazinon	ND	GR	0.24	0.096	ug/L		02/28/14 17:56	03/01/14 00:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,3-Dimethyl-2-nitrobenzene	98	GR	70 - 130				02/28/14 17:56	03/01/14 00:03	1
Perylene-d12	87	GR	70 - 130				02/28/14 17:56	03/01/14 00:03	1
Triphenylphosphate	149	GR LH	70 - 130				02/28/14 17:56	03/01/14 00:03	1

Method: 608 - Organochlorine Pesticides in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.096	0.077	ug/L		03/04/14 06:40	03/06/14 00:09	1
Dieldrin	ND		0.0048	0.0019	ug/L		03/04/14 06:40	03/06/14 00:09	1
Toxaphene	ND		0.48	0.24	ug/L		03/04/14 06:40	03/06/14 00:09	1
4,4'-DDD	ND		0.0048	0.0038	ug/L		03/04/14 06:40	03/06/14 00:09	1
4,4'-DDE	ND		0.0048	0.0029	ug/L		03/04/14 06:40	03/06/14 00:09	1
4,4'-DDT	ND		0.0096	0.0038	ug/L		03/04/14 06:40	03/06/14 00:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	61		35 - 115				03/04/14 06:40	03/06/14 00:09	1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.48	0.24	ug/L		03/04/14 06:40	03/06/14 17:30	1
Aroclor 1221	ND		0.48	0.24	ug/L		03/04/14 06:40	03/06/14 17:30	1
Aroclor 1232	ND		0.48	0.24	ug/L		03/04/14 06:40	03/06/14 17:30	1
Aroclor 1242	ND		0.48	0.24	ug/L		03/04/14 06:40	03/06/14 17:30	1
Aroclor 1248	ND		0.48	0.24	ug/L		03/04/14 06:40	03/06/14 17:30	1
Aroclor 1254	ND		0.48	0.24	ug/L		03/04/14 06:40	03/06/14 17:30	1
Aroclor 1260	ND		0.48	0.24	ug/L		03/04/14 06:40	03/06/14 17:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	88		45 - 120				03/04/14 06:40	03/06/14 17:30	1

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B)

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000096	0.00000472	ug/L		03/06/14 10:00	03/15/14 14:17	1
Total TCDD	ND		0.0000096	0.00000472	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,7,8-PeCDD	ND		0.0000480	0.00000277	ug/L		03/06/14 10:00	03/15/14 14:17	1
Total PeCDD	ND		0.0000480	0.00000277	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,4,7,8-HxCDD	ND		0.0000480	0.00000213	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,6,7,8-HxCDD	ND		0.0000480	0.00000238	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,7,8,9-HxCDD	0.00000520	J	0.0000480	0.00000209	ug/L		03/06/14 10:00	03/15/14 14:17	1
Total HxCDD	0.0000242	J	0.0000480	0.00000209	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,4,6,7,8-HpCDD	0.000103		0.0000480	0.00000383	ug/L		03/06/14 10:00	03/15/14 14:17	1
Total HpCDD	0.000225		0.0000480	0.00000383	ug/L		03/06/14 10:00	03/15/14 14:17	1
OCDD	0.000881	B	0.0000961	0.00000323	ug/L		03/06/14 10:00	03/15/14 14:17	1
2,3,7,8-TCDF	ND		0.0000096	0.00000359	ug/L		03/06/14 10:00	03/15/14 14:17	1

TestAmerica Irvine

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Client Sample ID: Arroyo Simi-20140228

Lab Sample ID: 440-71421-1

Date Collected: 02/28/14 11:00

Matrix: Water

Date Received: 02/28/14 13:34

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

Analyte	Result	Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	0.0000288	Q	0.0000096	0.00000359	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,7,8-PeCDF	ND		0.0000480	0.00000258	ug/L		03/06/14 10:00	03/15/14 14:17	1
2,3,4,7,8-PeCDF	ND		0.0000480	0.00000212	ug/L		03/06/14 10:00	03/15/14 14:17	1
Total PeCDF	0.0000370	Q J	0.0000480	0.00000212	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,4,7,8-HxCDF	ND		0.0000480	0.00000166	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,6,7,8-HxCDF	0.00000958	Q J	0.0000480	0.00000156	ug/L		03/06/14 10:00	03/15/14 14:17	1
2,3,4,6,7,8-HxCDF	ND		0.0000480	0.00000144	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,7,8,9-HxCDF	ND		0.0000480	0.00000190	ug/L		03/06/14 10:00	03/15/14 14:17	1
Total HxCDF	0.0000930	J Q	0.0000480	0.00000144	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,4,6,7,8-HpCDF	0.0000380	J	0.0000480	0.00000211	ug/L		03/06/14 10:00	03/15/14 14:17	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000480	0.00000298	ug/L		03/06/14 10:00	03/15/14 14:17	1
Total HpCDF	0.0000800	J	0.0000480	0.00000211	ug/L		03/06/14 10:00	03/15/14 14:17	1
OCDF	0.0000819	J	0.0000961	0.00000311	ug/L		03/06/14 10:00	03/15/14 14:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	97		35 - 197	03/06/14 10:00	03/15/14 14:17	1

Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	82		25 - 164	03/06/14 10:00	03/15/14 14:17	1
13C-1,2,3,7,8-PeCDD	85		25 - 181	03/06/14 10:00	03/15/14 14:17	1
13C-1,2,3,4,7,8-HxCDD	81		32 - 141	03/06/14 10:00	03/15/14 14:17	1
13C-1,2,3,6,7,8-HxCDD	82		28 - 130	03/06/14 10:00	03/15/14 14:17	1
13C-1,2,3,4,6,7,8-HpCDD	80		23 - 140	03/06/14 10:00	03/15/14 14:17	1
13C-OCDD	77		17 - 157	03/06/14 10:00	03/15/14 14:17	1
13C-2,3,7,8-TCDF	75		24 - 169	03/06/14 10:00	03/15/14 14:17	1
13C-1,2,3,7,8-PeCDF	79		24 - 185	03/06/14 10:00	03/15/14 14:17	1
13C-2,3,4,7,8-PeCDF	76		21 - 178	03/06/14 10:00	03/15/14 14:17	1
13C-1,2,3,4,7,8-HxCDF	76		26 - 152	03/06/14 10:00	03/15/14 14:17	1
13C-1,2,3,6,7,8-HxCDF	76		26 - 123	03/06/14 10:00	03/15/14 14:17	1
13C-2,3,4,6,7,8-HxCDF	80		28 - 136	03/06/14 10:00	03/15/14 14:17	1
13C-1,2,3,7,8,9-HxCDF	79		29 - 147	03/06/14 10:00	03/15/14 14:17	1
13C-1,2,3,4,6,7,8-HpCDF	73		28 - 143	03/06/14 10:00	03/15/14 14:17	1
13C-1,2,3,4,7,8,9-HpCDF	69		26 - 138	03/06/14 10:00	03/15/14 14:17	1
13C-OCDF	76		17 - 157	03/06/14 10:00	03/15/14 14:17	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	210		0.33	0.17	mg/L			03/12/14 13:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	460		25	13	mg/L			03/05/14 19:06	1

Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	>=1600		1.8	1.8	MPN/100mL			02/28/14 14:46	1

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	>=1600		1.8	1.8	MPN/100mL			02/28/14 14:46	1

TestAmerica Irvine

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Method	Method Description	Protocol	Laboratory
525.2	Semivolatile Organic Compounds (GC/MS)	EPA	TAL IRV
608	Organochlorine Pesticides in Water	40CFR136A	TAL IRV
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL IRV
1613B	Dioxins/Furans, HRGC/HRMS (1613B)	EPA-5	TAL KNX
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	TAL IRV
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL IRV
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

EPA-5 = EPA-5

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

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

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Client Sample ID: Arroyo Simi-20140228

Lab Sample ID: 440-71421-1

Date Collected: 02/28/14 11:00

Matrix: Water

Date Received: 02/28/14 13:34

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	525.2			1040 mL	1 mL	165842	02/28/14 17:56	EE	TAL IRV
Total/NA	Analysis	525.2		1	1040 mL	1 mL	165889	03/01/14 00:03	CP	TAL IRV
Total/NA	Prep	608			1040 mL	2 mL	166337	03/04/14 06:40	AC	TAL IRV
Total/NA	Analysis	608		1	1040 mL	2 mL	166771	03/06/14 00:09	KS	TAL IRV
Total/NA	Prep	608			1040 mL	2 mL	166337	03/04/14 06:40	AC	TAL IRV
Total/NA	Analysis	608		1	1040 mL	2 mL	167229	03/06/14 17:30	JM	TAL IRV
Total	Prep	1613			1041 mL	20 uL	4065015_P	03/06/14 10:00		TAL KNX
Total	Analysis	1613B		1			4065015	03/15/14 14:17	MAD	TAL KNX
Total Recoverable	Analysis	SM 2340B		1			168561	03/12/14 13:01	DP	TAL IRV
Total/NA	Analysis	SM 2540D		1	40 mL	1000 mL	166930	03/05/14 19:06	XL	TAL IRV
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	166533		KN1	TAL IRV
							(Start)	02/28/14 14:46		
							(End)	03/02/14 13:28		
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	166535		KN1	TAL IRV
							(Start)	02/28/14 14:46		
							(End)	03/02/14 13:28		

Laboratory References:

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

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-165842/1-A
Matrix: Water
Analysis Batch: 167239

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 165842

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		1.0	0.080	ug/L		02/28/14 17:56	03/07/14 03:23	1
Diazinon	ND		0.25	0.10	ug/L		02/28/14 17:56	03/07/14 03:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,3-Dimethyl-2-nitrobenzene	103		70 - 130	02/28/14 17:56	03/07/14 03:23	1
Perylene-d12	86		70 - 130	02/28/14 17:56	03/07/14 03:23	1
Triphenylphosphate	114		70 - 130	02/28/14 17:56	03/07/14 03:23	1

Lab Sample ID: LCS 440-165842/2-A
Matrix: Water
Analysis Batch: 167239

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 165842

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chlorpyrifos	5.00	5.35		ug/L		107	70 - 130
Diazinon	5.00	4.05		ug/L		81	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,3-Dimethyl-2-nitrobenzene	96		70 - 130
Perylene-d12	34	LG	70 - 130
Triphenylphosphate	114		70 - 130

Lab Sample ID: LCSD 440-165842/3-A
Matrix: Water
Analysis Batch: 167239

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 165842

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Chlorpyrifos	5.00	5.62		ug/L		112	70 - 130	5	30
Diazinon	5.00	3.99		ug/L		80	70 - 130	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,3-Dimethyl-2-nitrobenzene	96		70 - 130
Perylene-d12	98		70 - 130
Triphenylphosphate	117		70 - 130

Method: 608 - Organochlorine Pesticides in Water

Lab Sample ID: MB 440-166337/1-A
Matrix: Water
Analysis Batch: 166771

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 166337

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.10	0.080	ug/L		03/04/14 06:40	03/05/14 16:46	1
Dieldrin	ND		0.0050	0.0020	ug/L		03/04/14 06:40	03/05/14 16:46	1
Toxaphene	ND		0.50	0.25	ug/L		03/04/14 06:40	03/05/14 16:46	1
4,4'-DDD	ND		0.0050	0.0040	ug/L		03/04/14 06:40	03/05/14 16:46	1
4,4'-DDE	ND		0.0050	0.0030	ug/L		03/04/14 06:40	03/05/14 16:46	1
4,4'-DDT	ND		0.010	0.0040	ug/L		03/04/14 06:40	03/05/14 16:46	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Method: 608 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: MB 440-166337/1-A
Matrix: Water
Analysis Batch: 166771

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 166337

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Tetrachloro-m-xylene	73		35 - 115	03/04/14 06:40	03/05/14 16:46	1

Lab Sample ID: LCS 440-166337/2-A
Matrix: Water
Analysis Batch: 166771

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 166337

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	RPD
Dieldrin	0.250	0.187		ug/L		75	55 - 115	
4,4'-DDD	0.250	0.188		ug/L		75	55 - 120	
4,4'-DDE	0.250	0.180		ug/L		72	50 - 120	
4,4'-DDT	0.250	0.206		ug/L		83	55 - 120	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	70		35 - 115

Lab Sample ID: LCSD 440-166337/3-A
Matrix: Water
Analysis Batch: 166771

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 166337

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	
							Limits	RPD	RPD	Limit
Dieldrin	0.250	0.177		ug/L		71	55 - 115	5	30	
4,4'-DDD	0.250	0.182		ug/L		73	55 - 120	3	30	
4,4'-DDE	0.250	0.172		ug/L		69	50 - 120	5	30	
4,4'-DDT	0.250	0.203		ug/L		81	55 - 120	1	30	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	54		35 - 115

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 440-166337/1-A
Matrix: Water
Analysis Batch: 167229

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 166337

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aroclor 1016	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1221	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1232	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1242	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1248	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1254	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1
Aroclor 1260	ND		0.50	0.25	ug/L		03/04/14 06:40	03/06/14 16:10	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl (Surr)	107		45 - 120	03/04/14 06:40	03/06/14 16:10	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Lab Sample ID: LCS 440-166337/6-A

Matrix: Water

Analysis Batch: 167229

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 166337

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	2.00	1.70		ug/L		85	50 - 115
Aroclor 1260	2.00	1.85		ug/L		93	60 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	112		45 - 120

Lab Sample ID: LCSD 440-166337/7-A

Matrix: Water

Analysis Batch: 167229

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 166337

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	2.00	1.75		ug/L		88	50 - 115	3	30
Aroclor 1260	2.00	1.85		ug/L		93	60 - 120	0	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	111		45 - 120

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B)

Lab Sample ID: H4C06000015B

Matrix: Water

Analysis Batch: 4065015

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 4065015_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000100	0.00000470	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total TCDD	ND		0.0000100	0.00000470	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,7,8-PeCDD	ND		0.0000500	0.00000226	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total PeCDD	ND		0.0000500	0.00000226	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,4,7,8-HxCDD	ND		0.0000500	0.00000167	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,6,7,8-HxCDD	ND		0.0000500	0.00000194	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,7,8,9-HxCDD	ND		0.0000500	0.00000167	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total HxCDD	ND		0.0000500	0.00000167	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,4,6,7,8-HpCDD	ND		0.0000500	0.00000300	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total HpCDD	ND		0.0000500	0.00000300	ug/L		03/06/14 10:00	03/14/14 23:44	1
OCDD	0.00000722	Q J	0.000100	0.00000221	ug/L		03/06/14 10:00	03/14/14 23:44	1
2,3,7,8-TCDF	ND		0.0000100	0.00000345	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total TCDF	ND		0.0000100	0.00000345	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,7,8-PeCDF	ND		0.0000500	0.00000211	ug/L		03/06/14 10:00	03/14/14 23:44	1
2,3,4,7,8-PeCDF	ND		0.0000500	0.00000189	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total PeCDF	ND		0.0000500	0.00000189	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,4,7,8-HxCDF	ND		0.0000500	0.000000940	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,6,7,8-HxCDF	ND		0.0000500	0.000000910	ug/L		03/06/14 10:00	03/14/14 23:44	1
2,3,4,6,7,8-HxCDF	ND		0.0000500	0.000000870	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,7,8,9-HxCDF	ND		0.0000500	0.000000980	ug/L		03/06/14 10:00	03/14/14 23:44	1
Total HxCDF	ND		0.0000500	0.000000870	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,4,6,7,8-HpCDF	ND		0.0000500	0.00000156	ug/L		03/06/14 10:00	03/14/14 23:44	1
1,2,3,4,7,8,9-HpCDF	ND		0.0000500	0.00000224	ug/L		03/06/14 10:00	03/14/14 23:44	1

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

Lab Sample ID: H4C06000015B

Matrix: Water

Analysis Batch: 4065015

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 4065015_P

Analyte	MB Result	MB Qualifier	ML	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDF	ND		0.0000500	0.00000185	ug/L		03/06/14 10:00	03/14/14 23:44	1
OCDF	ND		0.000100	0.00000287	ug/L		03/06/14 10:00	03/14/14 23:44	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	100		35 - 197				03/06/14 10:00	03/14/14 23:44	1
Internal Standard	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	85		25 - 164				03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,7,8-PeCDD	96		25 - 181				03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,4,7,8-HxCDD	93		32 - 141				03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,6,7,8-HxCDD	89		28 - 130				03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,4,6,7,8-HpCDD	87		23 - 140				03/06/14 10:00	03/14/14 23:44	1
13C-OCDD	82		17 - 157				03/06/14 10:00	03/14/14 23:44	1
13C-2,3,7,8-TCDF	81		24 - 169				03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,7,8-PeCDF	90		24 - 185				03/06/14 10:00	03/14/14 23:44	1
13C-2,3,4,7,8-PeCDF	79		21 - 178				03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,4,7,8-HxCDF	81		26 - 152				03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,6,7,8-HxCDF	79		26 - 123				03/06/14 10:00	03/14/14 23:44	1
13C-2,3,4,6,7,8-HxCDF	81		28 - 136				03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,7,8,9-HxCDF	90		29 - 147				03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,4,6,7,8-HpCDF	82		28 - 143				03/06/14 10:00	03/14/14 23:44	1
13C-1,2,3,4,7,8,9-HpCDF	77		26 - 138				03/06/14 10:00	03/14/14 23:44	1
13C-OCDF	77		17 - 157				03/06/14 10:00	03/14/14 23:44	1

Lab Sample ID: H4C06000015C

Matrix: Water

Analysis Batch: 4065015

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 4065015_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	0.000200	0.000195		ug/L		97	67 - 158
1,2,3,7,8-PeCDD	0.00100	0.000993		ug/L		99	70 - 142
1,2,3,4,7,8-HxCDD	0.00100	0.000933		ug/L		93	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000955		ug/L		96	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000941		ug/L		94	64 - 162
1,2,3,4,6,7,8-HpCDD	0.00100	0.000911		ug/L		91	70 - 140
OCDD	0.00200	0.00184	B	ug/L		92	78 - 144
2,3,7,8-TCDF	0.000200	0.000203		ug/L		102	75 - 158
1,2,3,7,8-PeCDF	0.00100	0.000934		ug/L		93	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000934		ug/L		93	68 - 160
1,2,3,4,7,8-HxCDF	0.00100	0.000929		ug/L		93	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000945		ug/L		94	84 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000947		ug/L		95	70 - 156
1,2,3,7,8,9-HxCDF	0.00100	0.000955		ug/L		95	78 - 130
1,2,3,4,6,7,8-HpCDF	0.00100	0.000916		ug/L		92	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000907		ug/L		91	78 - 138
OCDF	0.00200	0.00184		ug/L		92	63 - 170

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Method: 1613B - Dioxins/Furans, HRGC/HRMS (1613B) (Continued)

Lab Sample ID: H4C06000015C
Matrix: Water
Analysis Batch: 4065015

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 4065015_P

Surrogate	LCS		Limits
	%Recovery	Qualifier	
37Cl4-2,3,7,8-TCDD	103		31 - 191

Internal Standard	LCS		Limits
	%Recovery	Qualifier	
13C-2,3,7,8-TCDD	86		20 - 175
13C-1,2,3,7,8-PeCDD	101		21 - 227
13C-1,2,3,4,7,8-HxCDD	92		21 - 193
13C-1,2,3,6,7,8-HxCDD	84		25 - 163
13C-1,2,3,4,6,7,8-HpCDD	95		26 - 166
13C-OCDD	97		13 - 199
13C-2,3,7,8-TCDF	84		22 - 152
13C-1,2,3,7,8-PeCDF	96		21 - 192
13C-2,3,4,7,8-PeCDF	89		13 - 328
13C-1,2,3,4,7,8-HxCDF	83		19 - 202
13C-1,2,3,6,7,8-HxCDF	82		21 - 159
13C-2,3,4,6,7,8-HxCDF	84		22 - 176
13C-1,2,3,7,8,9-HxCDF	86		17 - 205
13C-1,2,3,4,6,7,8-HpCDF	86		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	80		20 - 186
13C-OCDF	86		13 - 199

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 440-166930/2
Matrix: Water
Analysis Batch: 166930

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

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Suspended Solids	ND		1.0	0.50	mg/L			03/05/14 19:06	1

Lab Sample ID: LCS 440-166930/1
Matrix: Water
Analysis Batch: 166930

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

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Total Suspended Solids	1000	1060		mg/L		106	85 - 115

Lab Sample ID: 440-71690-B-4 DU
Matrix: Water
Analysis Batch: 166930

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample		DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Total Suspended Solids	1100		1220		mg/L		9	10

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

GC/MS Semi VOA

Prep Batch: 165842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total/NA	Water	525.2	
LCS 440-165842/2-A	Lab Control Sample	Total/NA	Water	525.2	
LCS 440-165842/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MB 440-165842/1-A	Method Blank	Total/NA	Water	525.2	

Analysis Batch: 165889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total/NA	Water	525.2	165842

Analysis Batch: 167239

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-165842/2-A	Lab Control Sample	Total/NA	Water	525.2	165842
LCS 440-165842/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	165842
MB 440-165842/1-A	Method Blank	Total/NA	Water	525.2	165842

GC Semi VOA

Prep Batch: 166337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total/NA	Water	608	
LCS 440-166337/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-166337/6-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-166337/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCS 440-166337/7-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-166337/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 166771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total/NA	Water	608	166337
LCS 440-166337/2-A	Lab Control Sample	Total/NA	Water	608	166337
LCS 440-166337/3-A	Lab Control Sample Dup	Total/NA	Water	608	166337
MB 440-166337/1-A	Method Blank	Total/NA	Water	608	166337

Analysis Batch: 167229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total/NA	Water	608	166337
LCS 440-166337/6-A	Lab Control Sample	Total/NA	Water	608	166337
LCS 440-166337/7-A	Lab Control Sample Dup	Total/NA	Water	608	166337
MB 440-166337/1-A	Method Blank	Total/NA	Water	608	166337

Specialty Organics

Analysis Batch: 4065015

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total	Water	1613B	
H4C060000015B	Method Blank	Total	Water	1613B	
H4C060000015C	Lab Control Sample	Total	Water	1613B	

TestAmerica Irvine

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Specialty Organics (Continued)

Prep Batch: 4065015_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total	Water	1613	
H4C060000015B	Method Blank	Total	Water	1613	
H4C060000015C	Lab Control Sample	Total	Water	1613	

Metals

Analysis Batch: 168561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total Recoverable	Water	SM 2340B	

General Chemistry

Analysis Batch: 166930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total/NA	Water	SM 2540D	
440-71690-B-4 DU	Duplicate	Total/NA	Water	SM 2540D	
LCS 440-166930/1	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-166930/2	Method Blank	Total/NA	Water	SM 2540D	

Biology

Analysis Batch: 166533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total/NA	Water	SM 9221E	

Analysis Batch: 166535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-71421-1	Arroyo Simi-20140228	Total/NA	Water	SM 9221F	

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
GR	Internal Standard out of range
LH	Surrogate Recoveries were higher than QC limits
LG	LG=Surrogate recovery below the acceptance limits

DIOXIN

Qualifier	Qualifier Description
J	Estimated result. Result is less than the reporting limit.
Q	Estimated maximum possible concentration (EMPC).
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Certification Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-14
Arizona	State Program	9	AZ0671	10-13-14
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-14 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-14
New Mexico	State Program	6	N/A	01-31-14 *
Northern Mariana Islands	State Program	9	MP0002	01-31-14 *
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-15

Laboratory: TestAmerica Knoxville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0688	06-17-14
California	State Program	9	2423	06-30-14
Colorado	State Program	8	N/A	02-28-15
Connecticut	State Program	1	PH-0223	09-30-15
Florida	NELAP	4	E87177	06-30-14
Georgia	State Program	4	906	06-13-14
Hawaii	State Program	9	N/A	04-13-14
Iowa	State Program	7	375	08-01-14
Kansas	NELAP	7	E-10349	10-31-14
Kentucky (DW)	State Program	4	90101	12-31-14
L-A-B	DoD ELAP		L2311	02-13-16
Louisiana	NELAP	6	83979	06-30-14
Louisiana	NELAP	6	LA110001	12-31-14
Maryland	State Program	3	277	03-31-14
Michigan	State Program	5	9933	04-13-14
Nevada	State Program	9	TN00009	07-31-14
New Jersey	NELAP	2	TN001	06-30-14
New York	NELAP	2	10781	04-01-14
North Carolina DENR	State Program	4	64	12-31-14
North Carolina DHHS	State Program	4	21705	07-31-14
Ohio VAP	State Program	5	CL0059	03-26-15
Oklahoma	State Program	6	9415	08-31-14
Pennsylvania	NELAP	3	68-00576	12-31-14
South Carolina	State Program	4	84001	06-30-14
Tennessee	State Program	4	2014	04-13-14
Texas	NELAP	6	T104704380-TX	08-31-14
USDA	Federal		P330-13-00260	08-29-16
Utah	NELAP	8	QUAN3	07-31-14
Virginia	NELAP	3	460176	09-14-14
Virginia	State Program	3	165	06-30-14
Washington	State Program	10	C593	01-19-15
West Virginia DEP	State Program	3	345	04-30-14
West Virginia DHHR	State Program	3	9955C	12-31-14

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Irvine

Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Arroyo

TestAmerica Job ID: 440-71421-1

Laboratory: TestAmerica Knoxville (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Wisconsin	State Program	5	998044300	08-31-14

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

H4C040415 Analytical Report 1
Sample Receipt Documentation 16

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



THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 440-71421-1

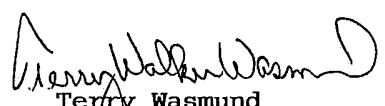
Boeing SSFL Outfalls Arroyo

Lot #: H4C040415

Debby Wilson

TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817

TESTAMERICA LABORATORIES, INC.


Terry Wasmund
Project Manager

March 17, 2014



ANALYTICAL METHODS SUMMARY

H4C040415

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Dioxins/Furans, HRGC/HRMS	EPA-5 1613B

References:

EPA-5 "Method 1613: Tetra- through Octa- Chlorinated Dioxins and Furans by Isotope Dilution, HRGC/HRMS, Revision B", EPA, OCTOBER 1994

SAMPLE SUMMARY

H4C040415

WO #	SAMPLE#	CLIENT	SAMPLE ID	SAMPLED DATE	SAMP TIME
M254P	001	ARROYO	SIMI-201402	02/28/14	11:00

NOTE (S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE H4C040415

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Comment:

The total estimated detection limits (EDLs) were manually changed to the lowest EDL reported within that homolog group.

The following flags are used to qualify results for chlorinated dioxin and furan results:

J – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is “the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point”. The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report, the ML is qualitatively defined as described above, and quantitatively defined as follows:

Minimum Level: The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.

Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

PROJECT NARRATIVE H4C040415

E – The reported result is an estimate. The amount reported is above the Upper Calibration Level (UCL) described below. The quantitative definition of the UCL is listed below:

Upper Calibration Level: The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Example: The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this example, all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

B – The analyte is present in the associated method blank at a detectable level. For this analysis, there is no method specified reporting level other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of ≥ 2.5 to 1. Therefore, the presence of any reportable amount of the analyte in the blank will result in a B qualifier on all associated samples.

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. These may include one or more of the following:

- Ion abundance ratios must be within specified limits ($\pm 15\%$ of theoretical ion abundance ratio).
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- 2,3,7,8-TCDF result is reported from the non-isomer specific Rtx-5 column.
- Polychlorinated dibenzofuran purity. An interference may be present on the indicated polychlorinated dibenzofuran when a polychlorinated diphenyl ether peak is present and maximizes within ± 3 seconds of the dibenzofuran candidate.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer.

PROJECT NARRATIVE H4C040415

X – Other. See explanation in narrative.

Laboratory studies supporting risk assessment and Total Maximum Daily Load (TMDL) evaluations, frequently use qualified data reported as low as the Method Detection Limit (MDL), or the Estimated Detection Limit (EDL). Several of EPA's isotope dilution methods employ the EDL.^{1,2,3} The EDL is based on a direct measurement of the signal-to-noise (S/N) ratio acquired during sample analysis. This S/N measurement is used to calculate the concentration in the sample corresponding to the minimum intensity of the smallest quantifiable peak. The EDL reflects the amount of the particular analyte which would be required to cause a positive result for the particular analysis. Because the S/N obtained covaries with recovery, instrument sensitivity and sample-specific cleanup efficacy, the EDL is a more valid measure of the sensitivity of the entire analytical process for the specific sample than is an MDL run periodically on a reference matrix.

The EDL is typically calculated according to the following equation:

$$\text{Estimated Detection Limit} = \frac{N \times 2.5 \times Q_{is}}{H_{is} \times RRF \times W \times S}$$

Where:

- N = peak to peak noise of quantitation ion signal in the region of the ion chromatogram where the compound of interest is expected to elute
- H_{is} = peak height of quantitation ion for appropriate internal standard
- Q_{is} = ng of internal standard added to sample
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

(The area of the internal standard is sometimes used instead of height, along with an area-to-height conversion factor.)

This method of estimating the detection limit differs from the MDL in that it does not carry the requirement that the sample be statistically distinguished as being from a contaminated population. As results approach the EDL, the risk of false positives and the analytical uncertainty increase significantly. However, a low false positive well below the ML or MDL is often closer to the true value than an assumption that the target analyte is present at the detection or reporting limits. For relatively clean samples, MDL studies may give an elevated estimate of the detection limit. Additionally, on contaminated samples, the MDL may give a falsely low estimate of the detection limit.

$$\text{Analyte Concentration} = \frac{A_s \times Q_{is}}{A_{is} \times RRF \times W \times S}$$

Where:

- A_s = Sum of areas of the target peaks

PROJECT NARRATIVE H4C040415

Q _{is}	=	ng of internal standard added to sample
A _{is}	=	Sum of areas of the internal standard peaks
RRF	=	mean relative response factor of compound obtained during initial calibration
W	=	amount of sample extracted (grams or liters)
S	=	percent solids (optional, if results are requested to be reported on dry weight basis)

In sample data, peaks must have an intensity of ≥ 2.5 times the height of the background noise in order to be considered. Careful examination of the two equations above reveals that for the concentration of the smallest peak detectable (per the EDL equation) to exactly equal the smallest peaks that are calculated, requires that the average height to area ratio obtained during the calibration must equal the area to height ratio for every peak obtained near 2.5 times the noise. When the area to height ratio on a peak in a sample is less than the average obtained during calibration, the calculated result will correspond to a peak that would have been less than 2.5 times the noise on the calibration. This is the result of normal variability. Because the source methods for the EDL (SW-846 8290 and 8280A) do not provide for censoring of results by any other magnitude standard than being 2.5 times the noise, the laboratory does not censor at the calculated EDL. Hence, detections may be reported below the estimated detection limits.

Footnotes:

1. Code of Federal Regulations, Part 136, Chapter 1, Appendix 1, October 1994: Method 1613 Tetra- Through Octa-Chlorinated Dioxins and Furans by Isotope Dilution High Resolution Gas Chromatography/High Resolution Mass Spectrometry.
2. U.S. EPA. Test Methods for Evaluating Solid Waste, Volume II, SW-846, Update III, December 1996. Method 8280A: The Analysis of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/Low Resolution Mass Spectrometry.
3. U.S. EPA. Test Methods for Evaluating Solid Waste, SW-846. Third Edition. March 1995 Method 8290: Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

CERTIFICATION SUMMARY

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Knoxville	L-A-B	DoD ELAP		L2311
TestAmerica Knoxville	Arkansas DEQ	State Program	6	88-0688
TestAmerica Knoxville	California	State Program	9	2423
TestAmerica Knoxville	Colorado	State Program	8	N/A
TestAmerica Knoxville	Connecticut	State Program	1	PH-0223
TestAmerica Knoxville	Florida	NELAC	4	E87177
TestAmerica Knoxville	Georgia	State Program	4	906
TestAmerica Knoxville	Hawaii	State Program	9	N/A
TestAmerica Knoxville	Indiana	State Program	5	C-TN-02
TestAmerica Knoxville	Iowa	State Program	7	375
TestAmerica Knoxville	Kansas	NELAC	7	E-10349
TestAmerica Knoxville	Kentucky	State Program	4	90101
TestAmerica Knoxville	Louisiana DOHH	State Program	6	LA110001
TestAmerica Knoxville	Louisiana DEQ	NELAC	6	83979
TestAmerica Knoxville	Maryland	State Program	3	277
TestAmerica Knoxville	Michigan	State Program	5	9933
TestAmerica Knoxville	Minnesota	NELAC	5	047-999-429
TestAmerica Knoxville	Nevada	State Program	9	TN00009
TestAmerica Knoxville	New Jersey	NELAC	2	TN001
TestAmerica Knoxville	New York	NELAC	2	10781
TestAmerica Knoxville	North Carolina DENR	State Program	4	64
TestAmerica Knoxville	North Carolina DHHS	State Program	4	21705
TestAmerica Knoxville	Ohio	OVAP	5	CL0059
TestAmerica Knoxville	Oklahoma	State Program	6	9415
TestAmerica Knoxville	Pennsylvania	NELAC	3	68-00576
TestAmerica Knoxville	South Carolina	State Program	4	84001
TestAmerica Knoxville	Tennessee	State Program	4	2014
TestAmerica Knoxville	Texas	NELAC	6	T104704380-TX
TestAmerica Knoxville	Federal	USDA		P330-11-00035
TestAmerica Knoxville	Utah	NELAC	8	QUAN3
TestAmerica Knoxville	Virginia	NELAC	3	460176
TestAmerica Knoxville	Virginia	State Program	3	165
TestAmerica Knoxville	Washington	State Program	10	C593
TestAmerica Knoxville	West Virginia DEP	State Program	3	345
TestAmerica Knoxville	West Virginia DHHR	State Program	3	9955C

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

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

Sample Data Summary

TestAmerica Irvine
Sample ID: ARROYO SIMI-201402
Trace Level Organic Compounds

Lot - Sample #....: H4C040415 - 001	Work Order #....: M254P1AA	Matrix....: WG
Date Sampled....: 02/28/14	Date Received....: 03/04/14	Dilution Factor: 1
Prep Date....: 03/06/14	Analysis Date....: 03/15/14	
Prep Batch #: 4065015		
Initial Wgt/Vol : 1041 mL	Instrument ID....: M2A	Method: EPA-5 1613B
Analyst ID....: Melissa A. Davidson		

PARAMETER	RESULT		MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND		0.00000960	0.00000472	ug/L
Total TCDD	ND		0.00000960	0.00000472	ug/L
1,2,3,7,8-PeCDD	ND		0.0000480	0.00000277	ug/L
Total PeCDD	ND		0.0000480	0.00000277	ug/L
1,2,3,4,7,8-HxCDD	ND		0.0000480	0.00000213	ug/L
1,2,3,6,7,8-HxCDD	ND		0.0000480	0.00000238	ug/L
1,2,3,7,8,9-HxCDD	0.00000520	J	0.0000480	0.00000209	ug/L
Total HxCDD	0.0000242	J	0.0000480	0.00000209	ug/L
1,2,3,4,6,7,8-HpCDD	0.000103		0.0000480	0.00000383	ug/L
Total HpCDD	0.000225		0.0000480	0.00000383	ug/L
OCDD	0.000881	B	0.0000961	0.00000323	ug/L
2,3,7,8-TCDF	ND		0.00000960	0.00000359	ug/L
Total TCDF	0.0000288	Q	0.00000960	0.00000359	ug/L
1,2,3,7,8-PeCDF	ND		0.0000480	0.00000258	ug/L
2,3,4,7,8-PeCDF	ND		0.0000480	0.00000212	ug/L
Total PeCDF	0.0000370	Q J	0.0000480	0.00000212	ug/L
1,2,3,4,7,8-HxCDF	ND		0.0000480	0.00000166	ug/L
1,2,3,6,7,8-HxCDF	0.00000958	Q J	0.0000480	0.00000156	ug/L
2,3,4,6,7,8-HxCDF	ND		0.0000480	0.00000144	ug/L
1,2,3,7,8,9-HxCDF	ND		0.0000480	0.00000190	ug/L
Total HxCDF	0.0000930	J Q	0.0000480	0.00000144	ug/L
1,2,3,4,6,7,8-HpCDF	0.0000380	J	0.0000480	0.00000211	ug/L
1,2,3,4,7,8,9-HpCDF	ND		0.0000480	0.00000298	ug/L
Total HpCDF	0.0000800	J	0.0000480	0.00000211	ug/L
OCDF	0.0000819	J	0.0000961	0.00000311	ug/L

TestAmerica Irvine
 Sample ID: ARROYO SIMI-201402
 Trace Level Organic Compounds

Lot - Sample #....:	H4C040415 - 001	Work Order #....:	M254P1AA	Matrix....:	WG
Date Sampled....:	02/28/14	Date Received....:	03/04/14	Dilution Factor:	1
Prep Date....:	03/06/14	Analysis Date....:	03/15/14		
Prep Batch #:	4065015				
Initial Wgt/Vol :	1041 mL	Instrument ID....:	M2A	Method:	EPA-5 1613B
Analyst ID....:	Melissa A. Davidson				

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	82	25 - 164
13C-1,2,3,7,8-PeCDD	85	25 - 181
13C-1,2,3,4,7,8-HxCDD	81	32 - 141
13C-1,2,3,6,7,8-HxCDD	82	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	80	23 - 140
13C-OCDD	77	17 - 157
13C-2,3,7,8-TCDF	75	24 - 169
13C-1,2,3,7,8-PeCDF	79	24 - 185
13C-2,3,4,7,8-PeCDF	76	21 - 178
13C-1,2,3,4,7,8-HxCDF	76	26 - 152
13C-1,2,3,6,7,8-HxCDF	76	26 - 123
13C-2,3,4,6,7,8-HxCDF	80	28 - 136
13C-1,2,3,7,8,9-HxCDF	79	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	73	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	69	26 - 138
13C-OCDF	76	17 - 157
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	97	35 - 197

QUALIFIERS

- B Method blank contamination. The associated method blank contains the target analyte at a reportable level.
 J Estimated Result.
 Q Estimated maximum possible concentration (EMPC).

Method Blank Report
Trace Level Organic Compounds

Lot - Sample #....: H4C060000 - 015B Work Order #....: M26QE1AA Matrix....: WATER
 Dilution Factor: 1
 Prep Date....: 03/06/14 Analysis Date....: 03/14/14
 Prep Batch #: 4065015
 Initial Wgt/Vol : 1000 mL Instrument ID....: M2A Method: EPA-5 1613B
 Analyst ID....: Patricia(Trish) M. Parsly

PARAMETER	RESULT	MINIMUM LEVEL	ESTIMATED DETECTION LIMIT	UNITS
2,3,7,8-TCDD	ND	0.0000100	0.00000470	ug/L
Total TCDD	ND	0.0000100	0.00000470	ug/L
1,2,3,7,8-PeCDD	ND	0.0000500	0.00000226	ug/L
Total PeCDD	ND	0.0000500	0.00000226	ug/L
1,2,3,4,7,8-HxCDD	ND	0.0000500	0.00000167	ug/L
1,2,3,6,7,8-HxCDD	ND	0.0000500	0.00000194	ug/L
1,2,3,7,8,9-HxCDD	ND	0.0000500	0.00000167	ug/L
Total HxCDD	ND	0.0000500	0.00000167	ug/L
1,2,3,4,6,7,8-HpCDD	ND	0.0000500	0.00000300	ug/L
Total HpCDD	ND	0.0000500	0.00000300	ug/L
OCDD	0.00000722 Q J	0.000100	0.00000221	ug/L
2,3,7,8-TCDF	ND	0.0000100	0.00000345	ug/L
Total TCDF	ND	0.0000100	0.00000345	ug/L
1,2,3,7,8-PeCDF	ND	0.0000500	0.00000211	ug/L
2,3,4,7,8-PeCDF	ND	0.0000500	0.00000189	ug/L
Total PeCDF	ND	0.0000500	0.00000189	ug/L
1,2,3,4,7,8-HxCDF	ND	0.0000500	0.000000940	ug/L
1,2,3,6,7,8-HxCDF	ND	0.0000500	0.000000910	ug/L
2,3,4,6,7,8-HxCDF	ND	0.0000500	0.000000870	ug/L
1,2,3,7,8,9-HxCDF	ND	0.0000500	0.000000980	ug/L
Total HxCDF	ND	0.0000500	0.000000870	ug/L
1,2,3,4,6,7,8-HpCDF	ND	0.0000500	0.00000156	ug/L
1,2,3,4,7,8,9-HpCDF	ND	0.0000500	0.00000224	ug/L
Total HpCDF	ND	0.0000500	0.00000185	ug/L
OCDF	ND	0.000100	0.00000287	ug/L

Method Blank Report
Trace Level Organic Compounds

Lot - Sample #....: H4C060000 - 015B **Work Order #....:** M26QE1AA **Matrix....:** WATER
Dilution Factor: 1
Prep Date....: 03/06/14 **Analysis Date....:** 03/14/14
Prep Batch #: 4065015
Initial Wgt/Vol : 1000 mL **Instrument ID....:** M2A **Method:** EPA-5 1613B
Analyst ID....: Patricia(Trish) M. Parsly

<u>INTERNAL STANDARDS</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
13C-2,3,7,8-TCDD	85	25 - 164
13C-1,2,3,7,8-PeCDD	96	25 - 181
13C-1,2,3,4,7,8-HxCDD	93	32 - 141
13C-1,2,3,6,7,8-HxCDD	89	28 - 130
13C-1,2,3,4,6,7,8-HpCDD	87	23 - 140
13C-OCDD	82	17 - 157
13C-2,3,7,8-TCDF	81	24 - 169
13C-1,2,3,7,8-PeCDF	90	24 - 185
13C-2,3,4,7,8-PeCDF	79	21 - 178
13C-1,2,3,4,7,8-HxCDF	81	26 - 152
13C-1,2,3,6,7,8-HxCDF	79	26 - 123
13C-2,3,4,6,7,8-HxCDF	81	28 - 136
13C-1,2,3,7,8,9-HxCDF	90	29 - 147
13C-1,2,3,4,6,7,8-HpCDF	82	28 - 143
13C-1,2,3,4,7,8,9-HpCDF	77	26 - 138
13C-OCDF	77	17 - 157

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
37Cl4-2,3,7,8-TCDD	100	35 - 197

QUALIFIERS

- J Estimated Result.
 Q Estimated maximum possible concentration (EMPC).

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot # ...: H4C040415 Work Order # ...: M26QE1AC-LCS Matrix: WATER
 LCS Lot-Sample# : H4C060000 - 015
 Prep Date: 03/06/14 Analysis Date ..: 03/15/14
 Prep Batch # ...: 4065015
 Dilution Factor : 1
 Analyst ID.....: Melissa A. Davidson Instrument ID.: M2A Method.....: EPA-5 1613B
 Initial Wgt/Vol: 1000 mL

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RECOVERY LIMITS
2,3,7,8-TCDD	0.0002	0.0001	ug/L	97	(67 - 158)
1,2,3,7,8-PeCDD	0.0010	0.0009	ug/L	99	(70 - 142)
1,2,3,4,7,8-HxCDD	0.0010	0.0009	ug/L	93	(70 - 164)
1,2,3,6,7,8-HxCDD	0.0010	0.0009	ug/L	96	(76 - 134)
1,2,3,7,8,9-HxCDD	0.0010	0.0009	ug/L	94	(64 - 162)
1,2,3,4,6,7,8-HpCDD	0.0010	0.0009	ug/L	91	(70 - 140)
OCDD	0.0020	0.0018	ug/L	92 B	(78 - 144)
2,3,7,8-TCDF	0.0002	0.0002	ug/L	102	(75 - 158)
1,2,3,7,8-PeCDF	0.0010	0.0009	ug/L	93	(80 - 134)
2,3,4,7,8-PeCDF	0.0010	0.0009	ug/L	93	(68 - 160)
1,2,3,4,7,8-HxCDF	0.0010	0.0009	ug/L	93	(72 - 134)
1,2,3,6,7,8-HxCDF	0.0010	0.0009	ug/L	94	(84 - 130)
2,3,4,6,7,8-HxCDF	0.0010	0.0009	ug/L	95	(70 - 156)
1,2,3,7,8,9-HxCDF	0.0010	0.0009	ug/L	95	(78 - 130)
1,2,3,4,6,7,8-HpCDF	0.0010	0.0009	ug/L	92	(82 - 122)
1,2,3,4,7,8,9-HpCDF	0.0010	0.0009	ug/L	91	(78 - 138)
OCDF	0.0020	0.0018	ug/L	92	(63 - 170)

INTERNAL STANDARD	PERCENT RECOVERY	RECOVERY LIMITS
13C-2,3,7,8-TCDD	86	(20 - 175)
13C-1,2,3,7,8-PeCDD	101	(21 - 227)
13C-1,2,3,4,7,8-HxCDD	92	(21 - 193)
13C-1,2,3,6,7,8-HxCDD	84	(25 - 163)
13C-1,2,3,4,6,7,8-HpCDD	95	(26 - 166)
13C-OCDD	97	(13 - 199)
13C-2,3,7,8-TCDF	84	(22 - 152)
13C-1,2,3,7,8-PeCDF	96	(21 - 192)
13C-2,3,4,7,8-PeCDF	89	(13 - 328)
13C-1,2,3,4,7,8-HxCDF	83	(19 - 202)
13C-1,2,3,6,7,8-HxCDF	82	(21 - 159)
13C-2,3,4,6,7,8-HxCDF	84	(22 - 176)
13C-1,2,3,7,8,9-HxCDF	86	(17 - 205)
13C-1,2,3,4,6,7,8-HpCDF	86	(21 - 158)
13C-1,2,3,4,7,8,9-HpCDF	80	(20 - 186)
13C-OCDF	86	(13 - 199)

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
37Cl4-2,3,7,8-TCDD	103	(31 - 191)

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Notes:

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

Bold print denotes control parameters

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

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

Sample Receipt Documentation

TestAmerica Irvine
 17461 Derian Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

HYC040415

Chain of Custody Record



Client Information (Sub Contract Lab) Client Contact: Wilson, Debby S Shipping/Receiving: debby.wilson@testamericainc.com Company: TestAmerica Laboratories, Inc. Address: 5815 Middlebrook Pike, Knoxville, TN, 37921 Phone: 865-291-3000(Tel) 865-584-4315(Fax) Email: Project Name: Boeing SSFL outfalls Arroyo Site:		Lab Pw: Wilson, Debby S E-Mail: debby.wilson@testamericainc.com Carrier Tracking No(s): COC No: 440-30150.1 Page: Page 1 of 1 Job #: 440-71421-1	
Due Date Requested: 3/12/2014 TAT Requested (days): PO #: WO #: Project #: 44009879 SSOW#:		Analysis Requested Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - H2SO4 S - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)	
Sample Identification - Client ID (Lab ID) Arroyo Simi-201402 (440-71421-1)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) Sample Type (C=Comp, G=grab) Preservation Code: Water Sample Time: 11:00 Pacific Sample Date: 2/28/14 Date: 3/14/14 17:00 Date/Time: 3/14/14 10:30 Date/Time:	
Possible Hazard Identification Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/Note: See OAS_Boeing_wlu to zero. ug/L PH=6 RC=ND AEC @ 2.9, 1.7, 0.9, 0.7, 1.0, 0.6c CUSTODY STRAPS INTACT 6 COOLERS RA 3/4/14 FED EX # 542643213998	
Empty Kit Relinquished by: Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:	
Custody Seals Intact: A Yes, A No		Received by: [Signature] Received by: [Signature] Received by:	

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

Lot Number: 14C04041S

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Do sample container labels match COC? (IDs, Dates, Times)	/			<input type="checkbox"/> 1a Do not match COC <input type="checkbox"/> 1b Incomplete information <input type="checkbox"/> 1c Marking smeared <input type="checkbox"/> 1d Label torn <input type="checkbox"/> 1e No label <input type="checkbox"/> 1f COC not received <input type="checkbox"/> 1g Other:	
2. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : <u>1660</u>	/			<input type="checkbox"/> 2a Temp Blank = _____ <input type="checkbox"/> 2b Cooler Temp = _____ <input type="checkbox"/> 2c Cooling initiated for recently collected samples, ice present.	
3. Were samples received with correct chemical preservative (excluding Encore)?	/		/	<input type="checkbox"/> 3a See box 3A for pH Preservation <input type="checkbox"/> 3b Other:	
4. Were custody seals present/intact on cooler and/or containers?	/			<input type="checkbox"/> 4a Not present <input type="checkbox"/> 4b Not intact <input type="checkbox"/> 4c Other:	
5. Were all of the samples listed on the COC received?	/			<input type="checkbox"/> 5a Samples received-not on COC <input type="checkbox"/> 5b Samples not received-on COC	
6. Were all of the sample containers received intact?	/			<input type="checkbox"/> 6a Leaking <input type="checkbox"/> 6b Broken	
7. Were VOA samples received without headspace?	/		/	<input type="checkbox"/> 7a Headspace (VOA only)	
8. Were samples received in appropriate containers?	/			<input type="checkbox"/> 8a Improper container	
9. Did you check for residual chlorine, if necessary? Chlorine test strip lot number: <u>3240 2016/06</u>	/			<input type="checkbox"/> 9a Could not be determined due to matrix interference	
10. Were samples received within holding time?	/			<input type="checkbox"/> 10a Holding time expired	
11. For rad samples, was sample activity info. provided?	/		/	<input type="checkbox"/> Incomplete information	
12. For 1613B water samples is pH<9?	/			If no, was pH adjusted to pH 7 - 9 with sulfuric acid?	pH test strip lot number: <u>HC39 1982</u>
13. Are the shipping containers intact?	/			<input type="checkbox"/> 13a Leaking <input type="checkbox"/> 13b Other:	Box 3A: pH Preservation Box 9A: Residual Chlorine
14. Was COC relinquished? (Signed/Dated/Timed)	/			<input type="checkbox"/> 14a Not relinquished	Preservative: _____
15. Are tests/parameters listed for each sample?	/			<input type="checkbox"/> 15a Incomplete information	Lot Number: _____
16. Is the matrix of the samples noted?	/			<input type="checkbox"/> 15a Incomplete information	Exp Date: _____
17. Is the date/time of sample collection noted?	/			<input type="checkbox"/> 15a Incomplete information	Analyst: _____
18. Is the client and project name/# identified?	/			<input type="checkbox"/> 15a Incomplete information	Date: _____
19. Was the sampler identified on the COC?	/			<input type="checkbox"/> 19a Other	Time: _____

Quote #: 51493 PM Instructions: NA

Sample Receiving Associate: [Signature] Date: 3/4/14



Client Name/Address: Haley & Aldrich, Inc. 9040 Friars Road Suite 220 San Diego, CA 92108-5860			Project: Boeing-SSFL NPDES Annual Arroyo Simi-Frontier Park			ANALYSIS REQUIRED			Field readings: (Log in and include in report Temp and pH. Include units) Time of readings: <u>11:15</u> DO <u>7.77</u> <u>mg/L</u> pH <u>7.24</u> <u>pH unit</u> Temp <u>14.45</u> <u>°C</u> Velocity <u>5 FT</u> <u>/sec</u> <u>ft/sec</u> <u>820 + NTU</u>						
Test America Contact: Debby Wilson			Phone Number: 619.285.7132, 858.337.4061 (cell)			Fecal coliform (SM9221)			E. coli (SM9221)			TCDD (and all congeners)			
Project Manager: Nancy Gardiner			Fax Number: 818.350.7340, 818.414.5608 (cell)			TSS									
Sampler: A Goldberger						Chlordane, Dieldrin, Toxaphene (608), 4,4-DDD, 4,4-DDE, 4,4- Chlorpyrifos, Diazinon (525.2)									
						PCBs (608)									
						Hardness as CaCO ₃			X						
Sample Description	Sample Matrix	Container Type	# of Cont.	Sample I.D.	Sampling Date/Time	Preservative	Bottle #								
Arroyo Simi	W	1L Poly	1	ArroyoSimi-201402	2-28-14 1100	HNO ₃	1								
Arroyo Simi	W	1L Amber	2	ArroyoSimi-201402		None	2A, 2B	X							
Arroyo Simi	W	1L Amber	2	ArroyoSimi-201402		HCl	3A, 3B		X						
Arroyo Simi	W	1L Amber	2	ArroyoSimi-201402		None	4A, 4B		X						
Arroyo Simi	W	1L Poly	1	ArroyoSimi-201402		None	5A			X					
Arroyo Simi	W	125mL Poly	1	ArroyoSimi-201402		Na2S2O3	6A				X				
Arroyo Simi	W	125mL Poly	1	ArroyoSimi-201402		Na2S2O3	7A					X			
Arroyo Simi	W	1L Amber	2	ArroyoSimi-201402		None	8A, 8B								
Relinquished By: [Signature]								Date/Time: 2/25/14	1103	Relinquished By: Shelley B					Date/Time: 02/25/14
Relinquished By: [Signature]								Date/Time: 02/28/14	1B34	Relinquished By: [Signature]					Date/Time: 02/28/14
Relinquished By: [Signature]								Date/Time:		Relinquished By: [Signature]					Date/Time:
Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____								Sample Integrity: (check) <u>3.4/3.3</u> Intact _____ On Ice: _____							
Data Requirements: (check) No Level IV _____ All Level IV _____ NPDES Level IV _____								-0-54							

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-71421-1

Login Number: 71421

List Number: 1

Creator: Wilson, Debby S

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-72794-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order: 1272.003H.01 001
Sample Delivery Group: 440-72794-1
Project Manager: K. Miller
Matrix: Water
QC Level: IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Laboratory: TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Name	Sample	Sub-Lab Sample Name	Matrix	Collection	Method
Arroyo Simi-20140310	440-72794-1		N/A	Water	3/10/2014 12:30:00 PM	SM9221E, SM9221F

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice. The sample was transported directly from the field via courier and was received at the laboratory slightly above the control limits of 4°C ±2°C, at 8.6°C; however, as the sample did not have sufficient time to cool in transit, no qualifications were deemed necessary. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved. The COC was appropriately signed and dated by field and laboratory personnel.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: March 26, 2014

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *Standard Method for the Examination of Water and Wastewater Method 9221E and 9221F*, and the *National Functional Guidelines for Inorganic Data Review (2004)*.

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared within eight hours of collection, no qualifications were required.
- Calibration: The control results were acceptable.
- Blanks: Not applicable to this method.
- Blank Spikes and Laboratory Control Samples: Not applicable to this method.
- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to this method.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-”; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 440727941

Analysis Method *SM9221E*

Sample Name Arroyo Simi-20140310 **Matrix Type:** WG **Result Type:** TRG

Sample Date: 3/10/2014 12:30:00 PM **Validation Level:** 3

Lab Sample Name: 440-72794-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	COLIFORMFEC AL	240	1.8	0	mpn/100			

Analysis Method *SM9221F*

Sample Name Arroyo Simi-20140310 **Matrix Type:** WG **Result Type:** TRG

Sample Date: 3/10/2014 12:30:00 PM **Validation Level:** 3

Lab Sample Name: 440-72794-2

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	ECOLI	170	1.8	0	mpn/100			

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-72794-1

Client Project/Site: Boeing SSFL outfalls Annual Arroyo Bacti

For:

Haley & Aldrich, Inc.

9040 Friars Rd.

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

3/16/2014 8:21:08 AM

Debby Wilson, Manager of Project Management

(949)261-1022

debby.wilson@testamericainc.com

LINKS

Review your project
results through

Total Access

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	6
Lab Chronicle	7
QC Association Summary	8
Definitions/Glossary	9
Certification Summary	10
Chain of Custody	11
Receipt Checklists	12

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Annual Arroyo Bacti

TestAmerica Job ID: 440-72794-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-72794-1	Arroyo Simi-20140310	Water	03/10/14 12:30	03/10/14 14:40
440-72794-2	Arroyo Simi-20140310	Water	03/10/14 12:35	03/10/14 14:40

1

2

3

4

5

6

7

8

9

10

11

12

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Annual Arroyo Bacti

TestAmerica Job ID: 440-72794-1

Job ID: 440-72794-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-72794-1

Comments

No additional comments.

Receipt

The samples were received on 3/10/2014 2:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 8.6° C.

Biology

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

1

2

3

4

5

6

7

8

9

10

11

12

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Annual Arroyo Bacti

TestAmerica Job ID: 440-72794-1

Client Sample ID: Arroyo Simi-20140310

Lab Sample ID: 440-72794-1

Date Collected: 03/10/14 12:30

Matrix: Water

Date Received: 03/10/14 14:40

Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	240		1.8	1.8	MPN/100mL			03/10/14 15:39	1

Client Sample ID: Arroyo Simi-20140310

Lab Sample ID: 440-72794-2

Date Collected: 03/10/14 12:35

Matrix: Water

Date Received: 03/10/14 14:40

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	170		1.8	1.8	MPN/100mL			03/10/14 15:39	1

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Annual Arroyo Bacti

TestAmerica Job ID: 440-72794-1

Method	Method Description	Protocol	Laboratory
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

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



Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfalls Annual Arroyo Bacti

TestAmerica Job ID: 440-72794-1

Client Sample ID: Arroyo Simi-20140310

Lab Sample ID: 440-72794-1

Date Collected: 03/10/14 12:30

Matrix: Water

Date Received: 03/10/14 14:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	168553	(Start) 03/10/14 15:39 (End) 03/12/14 14:42	SK	TAL IRV

Client Sample ID: Arroyo Simi-20140310

Lab Sample ID: 440-72794-2

Date Collected: 03/10/14 12:35

Matrix: Water

Date Received: 03/10/14 14:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	168554	(Start) 03/10/14 15:39 (End) 03/13/14 13:00	SK	TAL IRV

Laboratory References:

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

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Annual Arroyo Bacti

TestAmerica Job ID: 440-72794-1

Biology

Analysis Batch: 168553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-72794-1	Arroyo Simi-20140310	Total/NA	Water	SM 9221E	

Analysis Batch: 168554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-72794-2	Arroyo Simi-20140310	Total/NA	Water	SM 9221F	

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

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Annual Arroyo Bacti

TestAmerica Job ID: 440-72794-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls Annual Arroyo Bacti

TestAmerica Job ID: 440-72794-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-14
Arizona	State Program	9	AZ0671	10-13-14
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-14 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-14
New Mexico	State Program	6	N/A	01-31-14 *
Northern Mariana Islands	State Program	9	MP0002	01-31-14 *
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-15

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Irvine

72794

CHAIN OF CUSTODY FORM

Test America Version 7/19/2010

Client Name/Address: Haley & Aldrich, Inc. 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SSFL NPDES Annual Arroyo Simi-Frontier Park		Field readings: (Log in and include in report Temp and pH. Include units) Time of readings <u>12:24</u> DO <u>8.65</u> mg/L pH <u>7.55</u> pH unit Temp <u>19.3</u> °C Velocity <u>0.0</u> ft/sec						
Test America Contact: Debby Wilson Project Manager: Nancy Gardiner Sampler: Neal Smith		Phone Number: 619.285.7132, 858.337.4061(cell) Field Manager: Jeff Bannon: 818.350.7340, 818.414.5608(cell)		Comments						
Sample Description Arroyo Simi	Sample Matrix W	Container Type 125mL Poly	# of Cont. 1	Sample I.D. ArroyoSimi- 201403	Preservative Na2S2O3	Sampling Date/Time 3/10 12:30	Bottle # 6A	Fecal coliform (SM9221) X E. coli (SM9221)	ANALYSIS REQUIRED	Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____ Sample Integrity: (check) Intact _____ On Ice: <input checked="" type="checkbox"/>
Arroyo Simi	W	125mL Poly	1	ArroyoSimi- 201403	Na2S2O3	3/10 12:35	7A	X		
Relinquished By: Neal Smith		Date/Time: 3/10/14 13:16		Relinquished By: SHARON NARI		Date/Time: 3/10/14 13:16		440-72794 Chain of Custody		NPDES Level IV
Relinquished By: Sharon NARI		Date/Time: 3/10/14 14:40		Relinquished By: In Bannin 3/10/14		Date/Time: 3/10/14 14:40		Data Requirements: (check) No Level IV _____ All Level IV _____		NPDES Level IV



Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-72794-1

Login Number: 72794

List Number: 1

Creator: Cruz, Lisandro D

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-73362-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order: 1272.003H.01 001
Sample Delivery Group: 440-73362-1
Project Manager: K. Miller
Matrix: Water
QC Level: IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Laboratory: TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSimi-20140314	440-73362-1	N/A	Water	3/14/2014 11:18:00 AM	SM9221E, SM9221F

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice. The sample was transported directly from the field via courier and was received at the laboratory slightly above the control limits of 4°C \pm 2°C, at 12.3°C; however, as the sample did not have sufficient time to cool, no qualifications were deemed necessary. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved. The COC was appropriately signed and dated by field and laboratory personnel. A correction made to the COC was initialed but not dated.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks
Date Reviewed: April 1, 2014

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *Standard Method for the Examination of Water and Wastewater Methods 9221E*, and *9221F*, and the *National Functional Guidelines for Inorganic Data Review (2004)*.

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared within eight hours of collection, no qualifications were required.
- Calibration: The control results were acceptable.
- Blanks: Not applicable to these methods.
- Blank Spikes and Laboratory Control Samples: LCS samples are not applicable to biological methods.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these methods.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-”; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

In addition to the undiluted results, the laboratory also reported a 10x dilution for fecal coliform and a 100x dilution for e coli in the electronic data deliverable. The reviewer rejected, “R,” the diluted results, both nondetects, in favor of the undiluted results reported in the laboratory data package.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
- Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 440733621

Analysis Method SM9221E

Sample Name ArroyoSimi-20140314 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 3/14/2014 11:18:00 AM **Validation Level:** 3

Lab Sample Name: 440-73362-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	COLIFORMFEC AL	23	1.8	0	mpn/100			
Fecal Coliform Bacteria	COLIFORMFEC AL	20	18	0	mpn/100		R	D

Analysis Method SM9221F

Sample Name ArroyoSimi-20140314 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 3/14/2014 11:18:00 AM **Validation Level:** 3

Lab Sample Name: 440-73362-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	ECOLI	23	1.8	0	mpn/100			
Escherichia coli	ECOLI		180	0	mpn/100	U	R	D

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-73362-1

Client Project/Site: Annual Aroyo Simi-Frontier Park

For:

Haley & Aldrich, Inc.

9040 Friars Rd.

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

3/25/2014 5:11:21 PM

Debby Wilson, Manager of Project Management

(949)261-1022

debby.wilson@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	6
Lab Chronicle	7
QC Association Summary	8
Definitions/Glossary	9
Certification Summary	10
Chain of Custody	11
Receipt Checklists	12

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Aroyo Simi-Frontier Park

TestAmerica Job ID: 440-73362-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-73362-1	ArroyoSimi-20140314	Water	03/14/14 11:18	03/14/14 18:00

1

2

3

4

5

6

7

8

9

10

11

12

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Annual Aroyo Simi-Frontier Park

TestAmerica Job ID: 440-73362-1

Job ID: 440-73362-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-73362-1

Comments

No additional comments.

Receipt

The sample was received on 3/14/2014 6:00 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 12.3° C.

Biology

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

1

2

3

4

5

6

7

8

9

10

11

12

Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Annual Aroyo Simi-Frontier Park

TestAmerica Job ID: 440-73362-1

Client Sample ID: ArroyoSimi-20140314

Lab Sample ID: 440-73362-1

Date Collected: 03/14/14 11:18

Matrix: Water

Date Received: 03/14/14 18:00

Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	23		1.8	1.8	MPN/100mL			03/14/14 18:29	1

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	23		1.8	1.8	MPN/100mL			03/14/14 18:29	1

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

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Aroyo Simi-Frontier Park

TestAmerica Job ID: 440-73362-1

Method	Method Description	Protocol	Laboratory
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

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

1

2

3

4

5

6

7

8

9

10

11

12

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Annual Aroyo Simi-Frontier Park

TestAmerica Job ID: 440-73362-1

Client Sample ID: ArroyoSimi-20140314

Lab Sample ID: 440-73362-1

Date Collected: 03/14/14 11:18

Matrix: Water

Date Received: 03/14/14 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	169924	(Start) 03/14/14 18:29 (End) 03/17/14 14:00	KN1	TAL IRV
Total/NA	Analysis	SM 9221E	DL	10	100 mL	100 mL	169924	(Start) 03/14/14 18:29 (End) 03/17/14 14:00	KN1	TAL IRV
Total/NA	Analysis	SM 9221E	DL2	100	100 mL	100 mL	169924	(Start) 03/14/14 18:29 (End) 03/17/14 14:00	KN1	TAL IRV
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	169925	(Start) 03/14/14 18:29 (End) 03/17/14 14:00	KN1	TAL IRV
Total/NA	Analysis	SM 9221F	DL	10	100 mL	100 mL	169925	(Start) 03/14/14 18:29 (End) 03/17/14 14:00	KN1	TAL IRV
Total/NA	Analysis	SM 9221F	DL2	100	100 mL	100 mL	169925	(Start) 03/14/14 18:29 (End) 03/17/14 14:00	KN1	TAL IRV

Laboratory References:

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

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Aroyo Simi-Frontier Park

TestAmerica Job ID: 440-73362-1

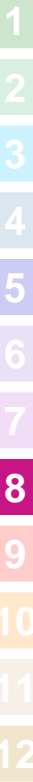
Biology

Analysis Batch: 169924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73362-1	ArroyoSimi-20140314	Total/NA	Water	SM 9221E	
440-73362-1 - DL	ArroyoSimi-20140314	Total/NA	Water	SM 9221E	
440-73362-1 - DL2	ArroyoSimi-20140314	Total/NA	Water	SM 9221E	

Analysis Batch: 169925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73362-1	ArroyoSimi-20140314	Total/NA	Water	SM 9221F	
440-73362-1 - DL	ArroyoSimi-20140314	Total/NA	Water	SM 9221F	
440-73362-1 - DL2	ArroyoSimi-20140314	Total/NA	Water	SM 9221F	



Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Aroyo Simi-Frontier Park

TestAmerica Job ID: 440-73362-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Aroyo Simi-Frontier Park

TestAmerica Job ID: 440-73362-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-14
Arizona	State Program	9	AZ0671	10-13-14
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-14 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-14
New Mexico	State Program	6	N/A	01-31-14 *
Northern Mariana Islands	State Program	9	MP0002	01-31-14 *
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-15

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Irvine

CHAIN OF CUSTODY FORM

Client Name/Address:
 Haley & Aldrich, Inc.
 9040 Friars Road Suite 220
 San Diego, CA 92108-5860

Project:
 Boeing-SSFL NPDES
 Annual Arroyo Simi-Frontier Park

Test America Contact: Debby Wilson
 Project Manager: Nancy Gardiner
 Sampler: **Daniel Smith**

Phone Number:
 619.285.7132, 858.337.4061(cell)
 Field Manager: Jeff Bannon:
 818.350.7340, 818.414.5608(cell)

Sample Description	Sample Matrix	Container Type	# of Cont.	Sample I.D.	Sampling Date/Time	Preservative	Bottle #	Fecal coliform (SM9221)	m. coli (SM9221)	Field readings: (Log in and include in report Temp and pH. Include units) Time of readings <u>1110</u> DO <u>10.06</u> mg/L pH <u>7.75</u> pH unit Temp <u>16.50</u> °C Velocity <u>0.0</u> ft/sec	Comments
Arroyo Simi	W	125mL Poly	1	ArroyoSimi-201403	3/14/14 11:10	Na2S2O3	6A	X			
Arroyo Simi	W	125mL Poly	1	ArroyoSimi-201403	3/14/14 11:10	Na2S2O3	7A	X			

Relinquished By: Daniel Smith Date/Time: 3/14/14 1300 Relinquished By: Tess Dunn Date/Time: 3/14/14

Relinquished By: Tess Dunn Date/Time: 3-14/14 6:00 AM Relinquished By: R. L. King Date/Time: 3.11.14

Relinquished By: _____ Date/Time: _____ Relinquished By: _____ Date/Time: _____

Turn around Time: (check) _____
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____

Sample Integrity: (check) _____
 Intact _____ On Ice:

Data Requirements: (check) _____
 No Level IV _____ All Level IV _____

NPDES Level IV _____

IR-59 12.4 °C - .0.1' = 12.3



440-73362 Chain of Custody

13. 3/15/14 1023



Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-73362-1

Login Number: 73362

List Number: 1

Creator: Soderblom, Tim

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	12.4/12.3
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-73590-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order: 1272.003H.01 001
Sample Delivery Group: 440-73590-1
Project Manager: K. Miller
Matrix: Water
QC Level: IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Laboratory: TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Name	Sample	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSlmi-20140319	440-73590-1		N/A	Water	3/19/2014 9:15:00 AM	SM9221E, SM9221F

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice. The sample was transported directly from the field via courier and was received at the laboratory within the control limits of 4°C \pm 2°C. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved. The COC was appropriately signed and dated by field and laboratory personnel.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: April 1, 2014

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *Standard Method for the Examination of Water and Wastewater Methods 9221E*, and *9221F*, and the *National Functional Guidelines for Inorganic Data Review (2004)*.

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared within eight hours of collection, no qualifications were required.
- Calibration: The control results were acceptable.
- Blanks: Not applicable to these methods.
- Blank Spikes and Laboratory Control Samples: LCS samples are applicable to biological methods.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these methods.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-”; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

In addition to the undiluted results, the laboratory also reported a 10x dilution for fecal coliform and a 100x dilution for e coli in the electronic data deliverable. The reviewer rejected, “R,” the diluted results, both nondetects, in favor of the undiluted results reported in the laboratory data package.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
- Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 440735901

Analysis Method SM9221E

Sample Name ArroyoSIImi-20140319 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 3/19/2014 9:15:00 AM **Validation Level:** 3

Lab Sample Name: 440-73590-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	COLIFORMFEC AL	540	1.8	0	mpn/100			
Fecal Coliform Bacteria	COLIFORMFEC AL	220	18	0	mpn/100		R	D

Analysis Method SM9221F

Sample Name ArroyoSIImi-20140319 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 3/19/2014 9:15:00 AM **Validation Level:** 3

Lab Sample Name: 440-73590-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	ECOLI	540	1.8	0	mpn/100			
Escherichia coli	ECOLI	400	180	0	mpn/100		R	D

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-73590-1

Client Project/Site: Annual Arroyo Simi-Frontier Park

For:

Haley & Aldrich, Inc.

9040 Friars Rd.

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

3/28/2014 2:09:42 PM

Debby Wilson, Manager of Project Management

(949)261-1022

debby.wilson@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

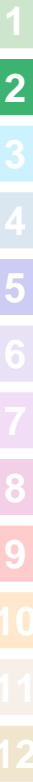


Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	6
Lab Chronicle	7
QC Association Summary	8
Definitions/Glossary	9
Certification Summary	10
Chain of Custody	11
Receipt Checklists	12

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-73590-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-73590-1	ArroyoSimi-20140319	Water	03/19/14 09:15	03/19/14 14:13

1

2

3

4

5

6

7

8

9

10

11

12

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Annual Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-73590-1

Job ID: 440-73590-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-73590-1

Comments

No additional comments.

Receipt

The samples were received on 3/19/2014 2:13 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2° C.

Biology

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

1

2

3

4

5

6

7

8

9

10

11

12

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Annual Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-73590-1

Client Sample ID: ArroyoSimi-20140319

Lab Sample ID: 440-73590-1

Date Collected: 03/19/14 09:15

Matrix: Water

Date Received: 03/19/14 14:13

Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	540		1.8	1.8	MPN/100mL			03/19/14 15:46	1

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	540		1.8	1.8	MPN/100mL			03/19/14 15:46	1

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

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-73590-1

Method	Method Description	Protocol	Laboratory
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

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



Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Annual Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-73590-1

Client Sample ID: ArroyoSimi-20140319

Lab Sample ID: 440-73590-1

Date Collected: 03/19/14 09:15

Matrix: Water

Date Received: 03/19/14 14:13

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	170312	(Start) 03/19/14 15:46 (End) 03/22/14 12:31	ST	TAL IRV
Total/NA	Analysis	SM 9221E	DL	10	100 mL	100 mL	170312	(Start) 03/19/14 15:46 (End) 03/22/14 12:31	ST	TAL IRV
Total/NA	Analysis	SM 9221E	DL2	100	100 mL	100 mL	170312	(Start) 03/19/14 15:46 (End) 03/22/14 12:31	ST	TAL IRV
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	170313	(Start) 03/19/14 15:46 (End) 03/22/14 12:31	ST	TAL IRV
Total/NA	Analysis	SM 9221F		10	100 mL	100 mL	170313	(Start) 03/19/14 15:46 (End) 03/22/14 12:31	ST	TAL IRV
Total/NA	Analysis	SM 9221F		100	100 mL	100 mL	170313	(Start) 03/19/14 15:46 (End) 03/22/14 12:31	ST	TAL IRV

Laboratory References:

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

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-73590-1

Biology

Analysis Batch: 170312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73590-1	ArroyoSimi-20140319	Total/NA	Water	SM 9221E	
440-73590-1 - DL	ArroyoSimi-20140319	Total/NA	Water	SM 9221E	
440-73590-1 - DL2	ArroyoSimi-20140319	Total/NA	Water	SM 9221E	

Analysis Batch: 170313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73590-1	ArroyoSimi-20140319	Total/NA	Water	SM 9221F	
440-73590-1	ArroyoSimi-20140319	Total/NA	Water	SM 9221F	
440-73590-1	ArroyoSimi-20140319	Total/NA	Water	SM 9221F	

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-73590-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-73590-1

Laboratory: TestAmerica Irvine

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

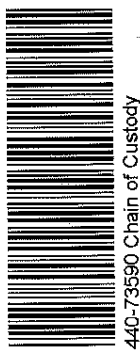
Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-14
Arizona	State Program	9	AZ0671	10-13-14
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-14 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-14
New Mexico	State Program	6	N/A	01-31-14 *
Northern Mariana Islands	State Program	9	MP0002	01-31-14 *
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-15

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Irvine

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich, Inc. 9040 Friars Road Suite 220 San Diego, CA 92108-5860			Project: Boeing-SSFL NPDES Annual Arroyo Simi-Frontier Park			ANALYSIS REQUIRED			Field readings: (Log in and include in report Temp and pH. Include units) Time of <u>8:01</u> readings DO <u>8.17</u> mg/L pH <u>6.10</u> pH unit Temp <u>13.80</u> °C Velocity <u>0.0</u> ft/sec Turbidity <u>7.5</u> ntu		
Test America Contact: Debby Wilson Project Manager: Nancy Gardiner Sampler: <u>Den Smith</u>			Phone Number: 619.285.7132, 858.337.4061 (cell) Field Manager: Jeff Bannon: 818.350.7340, 818.414.5608 (cell)			Fecal coliform (SM9221)			Comments		
Sample Description Arroyo Simi	Sample Matrix W	Container Type 125mL Poly	# of Cont. 1	Sample I.D. ArroyoSimi-201403	Sampling Date/Time <u>3/19/14</u> <u>0915</u>	Preservative Na2S2O3	Bottle # 6A	Fecal coliform (SM9221)	Comments		
Sample Description Arroyo Simi	Sample Matrix W	Container Type 125mL Poly	# of Cont. 1	Sample I.D. ArroyoSimi-201403	Sampling Date/Time <u>3/19/14</u> <u>0910</u>	Preservative Na2S2O3	Bottle # 7A	Fecal coliform (SM9221)	Comments		
Relinquished By <u>Shobika NABI</u> Date/Time: <u>03/19/14</u> 10:15									Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____		
Relinquished By <u>Shobika NABI</u> Date/Time: <u>3/19/14</u> 14:13									Sample Integrity: (check) Intact _____ On Ice: _____ Data Requirements: (check) No Level IV _____ All Level IV _____ NPDES Level IV _____		
Relinquished By <u>Olga Ornelas</u> Date/Time: <u>3/19/14</u> 14:13									NPDES Level IV _____		



3.3°C / 32°C IR-59

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-73590-1

Login Number: 73590

List Number: 1

Creator: Bernal, Janie M

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-73921-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order: 1272.003H.01 001
Sample Delivery Group: 440-73921-1
Project Manager: K. Miller
Matrix: Water
QC Level: IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Laboratory: TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Name	Sample	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSlmi-20140324	440-73921-1		N/A	Water	3/24/2014 8:20:00 AM	SM9221E, SM9221F

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice. The sample was transported directly from the field via courier and was received at the laboratory within the control limits of 4°C \pm 2°C, at 12.3°C; however, as the sample did not have sufficient time to cool in transit, no qualifications were deemed necessary. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved. The COC was appropriately signed and dated by field and laboratory personnel.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: April 1, 2014

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *Standard Method for the Examination of Water and Wastewater Methods 9221E*, and *9221F*, and the *National Functional Guidelines for Inorganic Data Review (2004)*.

- Holding Times: The e. coli and fecal coliform analytical holding times are listed as immediate. As the sample was prepared within eight hours of collection, no qualifications were required.
- Calibration: The control results were acceptable.
- Blanks: Not applicable to these methods.
- Blank Spikes and Laboratory Control Samples: LCS samples are not applicable to biological methods.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: Not applicable to these methods.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-”; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

In addition to the undiluted results, the laboratory also reported a 10x dilution for fecal coliform and a 100x dilution for e coli in the electronic data deliverable. The reviewer rejected, “R,” the diluted results, both nondetects, in favor of the undiluted results reported in the laboratory data package.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
- Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 440739211

Analysis Method SM9221E

Sample Name ArroyoSImi-20140324 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 3/24/2014 8:20:00 AM **Validation Level:** 3

Lab Sample Name: 440-73921-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Fecal Coliform Bacteria	COLIFORMFEC AL	170	1.8	0	mpn/100			
Fecal Coliform Bacteria	COLIFORMFEC AL	170	18	0	mpn/100		R	D

Analysis Method SM9221F

Sample Name ArroyoSImi-20140324 **Matrix Type:** WM **Result Type:** TRG

Sample Date: 3/24/2014 8:20:00 AM **Validation Level:** 3

Lab Sample Name: 440-73921-1

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Escherichia coli	ECOLI	170	1.8	0	mpn/100			
Escherichia coli	ECOLI	450	180	0	mpn/100		R	D

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-73921-1

Client Project/Site: Boeing SSFL outfalls

For:

Haley & Aldrich, Inc.

9040 Friars Rd.

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

3/28/2014 2:04:00 PM

Debby Wilson, Manager of Project Management

(949)261-1022

debby.wilson@testamericainc.com

LINKS

Review your project
results through

Total Access

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	6
Lab Chronicle	7
QC Association Summary	8
Definitions/Glossary	9
Certification Summary	10
Chain of Custody	11
Receipt Checklists	12

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-73921-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-73921-1	ArroyoSimi-20140324 (6A)	Water	03/24/14 08:20	03/24/14 13:24

1

2

3

4

5

6

7

8

9

10

11

12

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-73921-1

Job ID: 440-73921-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-73921-1

Comments

No additional comments.

Receipt

The samples were received on 3/24/2014 1:24 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.7° C.

Biology

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

1

2

3

4

5

6

7

8

9

10

11

12

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-73921-1

Client Sample ID: ArroyoSimi-20140324 (6A)

Lab Sample ID: 440-73921-1

Date Collected: 03/24/14 08:20

Matrix: Water

Date Received: 03/24/14 13:24

Method: SM 9221E - Coliforms, Fecal (Multiple-Tube Fermentation)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Coliform, Fecal	170		1.8	1.8	MPN/100mL			03/24/14 15:45	1

Method: SM 9221F - E.Coli (Multiple-Tube Fermentation; EC-MUG)

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Escherichia coli	170		1.8	1.8	MPN/100mL			03/24/14 15:45	1

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

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-73921-1

Method	Method Description	Protocol	Laboratory
SM 9221E	Coliforms, Fecal (Multiple-Tube Fermentation)	SM	TAL IRV
SM 9221F	E.Coli (Multiple-Tube Fermentation; EC-MUG)	SM	TAL IRV

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

Laboratory References:

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



Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-73921-1

Client Sample ID: ArroyoSimi-20140324 (6A)

Lab Sample ID: 440-73921-1

Date Collected: 03/24/14 08:20

Matrix: Water

Date Received: 03/24/14 13:24

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 9221E		1	100 mL	100 mL	171552	(Start) 03/24/14 15:45 (End) 03/27/14 11:30	ST	TAL IRV
Total/NA	Analysis	SM 9221E	DL	10	100 mL	100 mL	171552	(Start) 03/24/14 15:45 (End) 03/27/14 11:30	ST	TAL IRV
Total/NA	Analysis	SM 9221E	DL2	100	100 mL	100 mL	171552	(Start) 03/24/14 15:45 (End) 03/27/14 11:30	ST	TAL IRV
Total/NA	Analysis	SM 9221F		1	100 mL	100 mL	171553	(Start) 03/24/14 15:45 (End) 03/27/14 11:30	ST	TAL IRV
Total/NA	Analysis	SM 9221F	DL	10	100 mL	100 mL	171553	(Start) 03/24/14 15:45 (End) 03/27/14 11:30	ST	TAL IRV
Total/NA	Analysis	SM 9221F	DL2	100	100 mL	100 mL	171553	(Start) 03/24/14 15:45 (End) 03/27/14 11:30	ST	TAL IRV

Laboratory References:

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

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-73921-1

Biology

Analysis Batch: 171552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73921-1	ArroyoSimi-20140324 (6A)	Total/NA	Water	SM 9221E	
440-73921-1 - DL	ArroyoSimi-20140324 (6A)	Total/NA	Water	SM 9221E	
440-73921-1 - DL2	ArroyoSimi-20140324 (6A)	Total/NA	Water	SM 9221E	

Analysis Batch: 171553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73921-1	ArroyoSimi-20140324 (6A)	Total/NA	Water	SM 9221F	
440-73921-1 - DL	ArroyoSimi-20140324 (6A)	Total/NA	Water	SM 9221F	
440-73921-1 - DL2	ArroyoSimi-20140324 (6A)	Total/NA	Water	SM 9221F	

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-73921-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL outfalls

TestAmerica Job ID: 440-73921-1

Laboratory: TestAmerica Irvine

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


Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-14
Arizona	State Program	9	AZ0671	10-13-14
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-14 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-14
New Mexico	State Program	6	N/A	01-31-14 *
Northern Mariana Islands	State Program	9	MP0002	01-31-14 *
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-15

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Irvine

CHAIN OF CUSTODY FORM

Test America Version 7/19/2010

Client Name/Address: Haley & Aldrich, Inc. 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SSFL NPDES Annual Arroyo Simi-Frontier Park		Field readings: (Log in and include in report Temp and pH. Include units) Time of readings <u>0815</u> DO <u>5.95</u> mg/L pH <u>6.89</u> pH unit Temp <u>15.68</u> °C Velocity <u>0.15</u> ft/sec				
Test America Contact: Debby Wilson Project Manager: Nancy Gardiner Sampler:		Phone Number: 619.285.7132, 858.337.4061(cell) Field Manager: Jeff Bannon: 818.350.7340, 818.414.5608(cell)		ANALYSIS REQUIRED Fecal coliform (SM9221) <input checked="" type="checkbox"/> F. coli (SM9221) <input type="checkbox"/>				
Sample Description	Sample Matrix	Container Type	# of Cont.	Sample I.D.	Sampling Date/Time	Preservative	Bottle #	Comments
Arroyo Simi	W	125mL Poly	1	ArroyoSimi-20140324	3/24/14 08:15	Na2S2O3	6A	
Arroyo Simi	W	125mL Poly	1	ArroyoSimi-20140324	3/24/14 08:30	Na2S2O3	7A	
 440-73921 Chain of Custody								
Relinquished By: Daniel Smith		Date/Time: 3/24/14 11:54		Relinquished By: Shafiq NABI		Date/Time: 3/24/14 13:24		Turn around Time: (check) 24 Hours <input type="checkbox"/> 5 Days <input type="checkbox"/> 48 Hours <input type="checkbox"/> 10 Days <input type="checkbox"/> 72 Hours <input type="checkbox"/> Normal <input type="checkbox"/> Sample integrity: (check) Intact <input type="checkbox"/> On Ice <input type="checkbox"/> Data Requirements: (check) No Level IV <input type="checkbox"/> All Level IV <input type="checkbox"/> NPDES Level IV <input type="checkbox"/>

5.8/5.7 pc
FR-59



Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-73921-1

Login Number: 73921

List Number: 1

Creator: Bernal, Janie M

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



DATA VALIDATION REPORT

Haley & Aldrich Boeing SSFL Stormwater

SAMPLE DELIVERY GROUP: 440-73610-1

Prepared by

MEC^x
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Haley & Aldrich Boeing SSFL Stormwater
Contract Task Order: 1272.003H.01 001
Sample Delivery Group: 440-73610-1
Project Manager: K. Miller
Matrix: Water
QC Level: IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Laboratory: TestAmerica Irvine

Table 1. Sample Identification

Sample Name	Lab Name	Sample	Sub-Lab Sample Name	Matrix	Collection	Method
ArroyoSimi-SE-20140319	440-73610-1		N/A	Water	3/19/2014 9:41:00 AM	SM 4500 NH3 D

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory on ice, within the control limits of 4°C \pm 2°C. According to the laboratory sample receipt log for this SDG, the sample containers were received intact and properly preserved. The COC was appropriately signed and dated by field and laboratory personnel. Custody seals were intact.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: April 14, 2014

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *Standard Methods for the Examination of Water and Wastewater (2006) Method 4500 NH₃ D*, and the *National Functional Guidelines for Inorganic Data Review (2010)*.

- Holding Times: The 28-day analytical holding time was met.
- Calibration: Calibration criteria were met. The initial calibration r^2 value was ≥ 0.995 and the initial calibration verification standard recovery was within 90-110%.
- Blanks: The method blank and ICB had no detects.
- Blank Spikes and Laboratory Control Samples: The recovery was within the laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG. The recoveries and RPD were within the laboratory-established control limits.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-”; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms: 440736101

Analysis Method *SM4500H*

Sample Name

Matrix Type: SE

Result Type: TRG

Sample Date: 3/19/2014 9:39:00 AM

Validation Level: 3

Lab Sample Name: 440-73610-1

Analyte	Fraction	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Ammonia	N	7664-41-7	3.35	9.98	2.00	mg/kg	J,DX	J	DNQ

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-73610-1

Client Project/Site: Boeing SSFL NPDES Annual Sediment
Arroyo

Revision: 2

For:

Haley & Aldrich, Inc.

9040 Friars Rd.

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

4/11/2014 12:27:13 PM

Debby Wilson, Manager of Project Management

(949)261-1022

debby.wilson@testamericainc.com

LINKS

Review your project
results through

Total Access

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

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

I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.



Debby Wilson
Manager of Project Management
4/11/2014 12:27:13 PM



Table of Contents

Cover Page	1
Table of Contents	3
Sample Summary	4
Case Narrative	5
Client Sample Results	6
Method Summary	7
Lab Chronicle	8
QC Sample Results	9
QC Association Summary	13
Definitions/Glossary	15
Certification Summary	16
Subcontract Data	17
Chain of Custody	22
Receipt Checklists	23

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-73610-1	ArroyoSimi-SE-20140319	Solid	03/19/14 09:41	03/19/14 14:13

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

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

Job ID: 440-73610-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-73610-1

Comments

Revised report to reanalyze Ammonia to achieve a reporting limit of 10mg/Kg.

Receipt

The sample was received on 3/19/2014 2:13 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2° C.

GC Semi VOA

Method(s) 8082: The continuing calibration verification (CCV) associated with batch 170327 recovered above the upper control limit for 1260. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCV 440-170327/44), (CCVRT 440-170327/10), ArroyoSimi-SE-20140319 (440-73610-1).

No other analytical or quality issues were noted.

General Chemistry

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

Subcontract non-Sister

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

Organic Prep

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



Client Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

Client Sample ID: ArroyoSimi-SE-20140319

Lab Sample ID: 440-73610-1

Date Collected: 03/19/14 09:41

Matrix: Solid

Date Received: 03/19/14 14:13

Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0	1.5	ug/Kg		03/20/14 11:54	03/22/14 15:58	1
4,4'-DDE	ND		5.0	1.5	ug/Kg		03/20/14 11:54	03/22/14 15:58	1
4,4'-DDT	ND		5.0	1.5	ug/Kg		03/20/14 11:54	03/22/14 15:58	1
Chlordane (technical)	ND		50	10	ug/Kg		03/20/14 11:54	03/22/14 15:58	1
Dieldrin	ND		5.0	1.5	ug/Kg		03/20/14 11:54	03/22/14 15:58	1
Toxaphene	ND		200	50	ug/Kg		03/20/14 11:54	03/22/14 15:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	65		45 - 120	03/20/14 11:54	03/22/14 15:58	1
Tetrachloro-m-xylene	77	PI	35 - 115	03/20/14 11:54	03/22/14 15:58	1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 19:23	1
Aroclor 1221	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 19:23	1
Aroclor 1232	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 19:23	1
Aroclor 1242	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 19:23	1
Aroclor 1248	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 19:23	1
Aroclor 1254	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 19:23	1
Aroclor 1260	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 19:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	98		45 - 120	03/20/14 11:54	03/20/14 19:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		5000	2500	mg/Kg			03/26/14 08:14	1
Ammonia (as N)	3.35	J,DX	9.98	2.00	mg/Kg		04/10/14 15:09	04/10/14 15:24	1

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	TAL IRV
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL IRV
9060	Organic Carbon, Total (TOC)	SW846	TAL IRV
Moisture	Percent Moisture	EPA	TAL IRV
SM 4500 NH3 D	Ammonia	SM	TAL IRV
Particle Size	General Sub Contract Method	NONE	PTSL

Protocol References:

EPA = US Environmental Protection Agency

NONE = NONE

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

Laboratory References:

PTSL = PTS Laboratories, Inc, 8100 Secura Way, Santa Fe Springs, CA 90670

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

Lab Chronicle

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

Client Sample ID: ArroyoSimi-SE-20140319

Lab Sample ID: 440-73610-1

Date Collected: 03/19/14 09:41

Matrix: Solid

Date Received: 03/19/14 14:13

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.06 g	2 mL	170545	03/20/14 11:54	QCT	TAL IRV
Total/NA	Analysis	8081A		1	15.06 g	2 mL	171066	03/22/14 15:58	KS	TAL IRV
Total/NA	Prep	3546			15.06 g	2 mL	170545	03/20/14 11:54	QCT	TAL IRV
Total/NA	Analysis	8082		1	15.06 g	2 mL	170327	03/20/14 19:23	JM	TAL IRV
Total/NA	Analysis	9060		1	0.1085 g	0.1085 g	171790	03/26/14 08:14	YZ	TAL IRV
Total/NA	Analysis	Moisture		1			170340	03/19/14 17:31	SP	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			2.5046 g	50 mL	175206	04/10/14 15:09	DC	TAL IRV
Total/NA	Analysis	SM 4500 NH3 D		1	2.5046 g	50 mL	175214	04/10/14 15:24	DC	TAL IRV

Laboratory References:

PTSL = PTS Laboratories, Inc, 8100 Secura Way, Santa Fe Springs, CA 90670

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



QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

Method: 8081A - Organochlorine Pesticides (GC)

Lab Sample ID: MB 440-170545/1-A

Matrix: Solid

Analysis Batch: 171066

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 170545

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	ND		5.0	1.5	ug/Kg		03/20/14 11:54	03/22/14 14:59	1
4,4'-DDE	ND		5.0	1.5	ug/Kg		03/20/14 11:54	03/22/14 14:59	1
4,4'-DDT	ND		5.0	1.5	ug/Kg		03/20/14 11:54	03/22/14 14:59	1
Chlordane (technical)	ND		50	10	ug/Kg		03/20/14 11:54	03/22/14 14:59	1
Dieldrin	ND		5.0	1.5	ug/Kg		03/20/14 11:54	03/22/14 14:59	1
Toxaphene	ND		200	50	ug/Kg		03/20/14 11:54	03/22/14 14:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	93		45 - 120	03/20/14 11:54	03/22/14 14:59	1
Tetrachloro-m-xylene	68		35 - 115	03/20/14 11:54	03/22/14 14:59	1

Lab Sample ID: LCS 440-170545/2-A

Matrix: Solid

Analysis Batch: 171066

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 170545

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	13.3	9.75		ug/Kg		73	60 - 120
4,4'-DDE	13.3	9.03		ug/Kg		68	60 - 120
4,4'-DDT	13.3	9.85		ug/Kg		74	65 - 120
alpha-Chlordane	13.3	8.38		ug/Kg		63	50 - 115
gamma-Chlordane	13.3	8.26		ug/Kg		62	50 - 115
Dieldrin	13.3	9.02		ug/Kg		68	65 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	96		45 - 120
Tetrachloro-m-xylene	66		35 - 115

Lab Sample ID: 440-73610-1 MS

Matrix: Solid

Analysis Batch: 171066

Client Sample ID: ArroyoSimi-SE-20140319

Prep Type: Total/NA

Prep Batch: 170545

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
4,4'-DDD	ND		13.3	8.59		ug/Kg		65	40 - 130
4,4'-DDE	ND		13.3	8.24		ug/Kg		62	35 - 130
4,4'-DDT	ND		13.3	8.50		ug/Kg		64	35 - 130
alpha-Chlordane	ND		13.3	7.57		ug/Kg		57	50 - 115
gamma-Chlordane	ND		13.3	7.26	PI	ug/Kg		55	50 - 115
Dieldrin	ND		13.3	7.93		ug/Kg		60	40 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	70		45 - 120
Tetrachloro-m-xylene	72	PI	35 - 115

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 440-73610-1 MSD

Matrix: Solid

Analysis Batch: 171066

Client Sample ID: ArroyoSimi-SE-20140319

Prep Type: Total/NA

Prep Batch: 170545

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
4,4'-DDD	ND		13.3	9.90		ug/Kg		75	40 - 130	14	30
4,4'-DDE	ND		13.3	9.55		ug/Kg		72	35 - 130	15	30
4,4'-DDT	ND		13.3	9.61		ug/Kg		72	35 - 130	12	30
alpha-Chlordane	ND		13.3	8.71		ug/Kg		66	50 - 115	14	30
gamma-Chlordane	ND		13.3	8.16	PI	ug/Kg		61	50 - 115	12	30
Dieldrin	ND		13.3	9.08		ug/Kg		68	40 - 125	14	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	80		45 - 120
Tetrachloro-m-xylene	73	PI	35 - 115

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 440-170545/1-A

Matrix: Solid

Analysis Batch: 170327

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 170545

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 17:52	1
Aroclor 1221	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 17:52	1
Aroclor 1232	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 17:52	1
Aroclor 1242	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 17:52	1
Aroclor 1248	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 17:52	1
Aroclor 1254	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 17:52	1
Aroclor 1260	ND		50	17	ug/Kg		03/20/14 11:54	03/20/14 17:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	101		45 - 120	03/20/14 11:54	03/20/14 17:52	1

Lab Sample ID: LCS 440-170545/5-A

Matrix: Solid

Analysis Batch: 170327

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 170545

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aroclor 1016	66.7	73.6		ug/Kg		110	65 - 115
Aroclor 1260	66.7	74.4		ug/Kg		112	65 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl (Surr)	102		45 - 120

Lab Sample ID: 440-73610-1 MS

Matrix: Solid

Analysis Batch: 170327

Client Sample ID: ArroyoSimi-SE-20140319

Prep Type: Total/NA

Prep Batch: 170545

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Aroclor 1016	ND		66.5	62.4		ug/Kg		94	50 - 120
Aroclor 1260	ND		66.5	65.0		ug/Kg		98	50 - 125

TestAmerica Irvine

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 440-73610-1 MS
Matrix: Solid
Analysis Batch: 170327

Client Sample ID: ArroyoSimi-SE-20140319
Prep Type: Total/NA
Prep Batch: 170545

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl (Surr)	100		45 - 120

Lab Sample ID: 440-73610-1 MSD
Matrix: Solid
Analysis Batch: 170327

Client Sample ID: ArroyoSimi-SE-20140319
Prep Type: Total/NA
Prep Batch: 170545

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec.		RPD	Limit
				Result	Qualifier				Limits	RPD		
Aroclor 1016	ND		66.0	51.7		ug/Kg		78	50 - 120	19		30
Aroclor 1260	ND		66.0	66.9		ug/Kg		101	50 - 125	3		30

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl (Surr)	100		45 - 120

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 440-171790/6
Matrix: Solid
Analysis Batch: 171790

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Organic Carbon	ND		5000	2500	mg/Kg			03/26/14 08:08	1

Lab Sample ID: LCS 440-171790/5
Matrix: Solid
Analysis Batch: 171790

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec.	
		Result	Qualifier				Limits	RPD
Total Organic Carbon	10000	11000		mg/Kg		110	90 - 110	

Lab Sample ID: 440-73610-1 MS
Matrix: Solid
Analysis Batch: 171790

Client Sample ID: ArroyoSimi-SE-20140319
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec.	
				Result	Qualifier				Limits	RPD
Total Organic Carbon	ND		19000	19800		mg/Kg		104	70 - 130	

Lab Sample ID: 440-73610-1 MSD
Matrix: Solid
Analysis Batch: 171790

Client Sample ID: ArroyoSimi-SE-20140319
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec.		RPD	Limit
				Result	Qualifier				Limits	RPD		
Total Organic Carbon	ND		18800	20300		mg/Kg		108	70 - 130	3		30

QC Sample Results

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 440-175206/2-A
Matrix: Solid
Analysis Batch: 175214

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 175206

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		10.0	2.00	mg/Kg		04/10/14 15:09	04/10/14 15:23	1

Lab Sample ID: LCS 440-175206/1-A
Matrix: Solid
Analysis Batch: 175214

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 175206

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	50.0	51.31		mg/Kg		103	85 - 115

Lab Sample ID: 440-73610-1 MS
Matrix: Solid
Analysis Batch: 175214

Client Sample ID: ArroyoSimi-SE-20140319
Prep Type: Total/NA
Prep Batch: 175206

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	3.35	J,DX	50.0	51.28		mg/Kg		96	75 - 125

Lab Sample ID: 440-73610-1 MSD
Matrix: Solid
Analysis Batch: 175214

Client Sample ID: ArroyoSimi-SE-20140319
Prep Type: Total/NA
Prep Batch: 175206

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ammonia (as N)	3.35	J,DX	50.0	49.38		mg/Kg		92	75 - 125	4	15

QC Association Summary

Client: Haley & Aldrich, Inc.
 Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

GC Semi VOA

Analysis Batch: 170327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73610-1	ArroyoSimi-SE-20140319	Total/NA	Solid	8082	170545
440-73610-1 MS	ArroyoSimi-SE-20140319	Total/NA	Solid	8082	170545
440-73610-1 MSD	ArroyoSimi-SE-20140319	Total/NA	Solid	8082	170545
LCS 440-170545/5-A	Lab Control Sample	Total/NA	Solid	8082	170545
MB 440-170545/1-A	Method Blank	Total/NA	Solid	8082	170545

Prep Batch: 170545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73610-1	ArroyoSimi-SE-20140319	Total/NA	Solid	3546	
440-73610-1 MS	ArroyoSimi-SE-20140319	Total/NA	Solid	3546	
440-73610-1 MSD	ArroyoSimi-SE-20140319	Total/NA	Solid	3546	
440-73610-1 MSD	ArroyoSimi-SE-20140319	Total/NA	Solid	3546	
440-73610-1 MSD	ArroyoSimi-SE-20140319	Total/NA	Solid	3546	
LCS 440-170545/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 440-170545/5-A	Lab Control Sample	Total/NA	Solid	3546	
MB 440-170545/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 171066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73610-1	ArroyoSimi-SE-20140319	Total/NA	Solid	8081A	170545
440-73610-1 MS	ArroyoSimi-SE-20140319	Total/NA	Solid	8081A	170545
440-73610-1 MSD	ArroyoSimi-SE-20140319	Total/NA	Solid	8081A	170545
LCS 440-170545/2-A	Lab Control Sample	Total/NA	Solid	8081A	170545
MB 440-170545/1-A	Method Blank	Total/NA	Solid	8081A	170545

General Chemistry

Analysis Batch: 170340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73610-1	ArroyoSimi-SE-20140319	Total/NA	Solid	Moisture	
440-73610-1 DU	ArroyoSimi-SE-20140319	Total/NA	Solid	Moisture	

Analysis Batch: 171790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73610-1	ArroyoSimi-SE-20140319	Total/NA	Solid	9060	
440-73610-1 MS	ArroyoSimi-SE-20140319	Total/NA	Solid	9060	
440-73610-1 MSD	ArroyoSimi-SE-20140319	Total/NA	Solid	9060	
LCS 440-171790/5	Lab Control Sample	Total/NA	Solid	9060	
MB 440-171790/6	Method Blank	Total/NA	Solid	9060	

Prep Batch: 175206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73610-1	ArroyoSimi-SE-20140319	Total/NA	Solid	SM 4500 NH3 B	
440-73610-1 MS	ArroyoSimi-SE-20140319	Total/NA	Solid	SM 4500 NH3 B	
440-73610-1 MSD	ArroyoSimi-SE-20140319	Total/NA	Solid	SM 4500 NH3 B	
LCS 440-175206/1-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 B	
MB 440-175206/2-A	Method Blank	Total/NA	Solid	SM 4500 NH3 B	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

General Chemistry (Continued)

Analysis Batch: 175214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-73610-1	ArroyoSimi-SE-20140319	Total/NA	Solid	SM 4500 NH3 D	175206
440-73610-1 MS	ArroyoSimi-SE-20140319	Total/NA	Solid	SM 4500 NH3 D	175206
440-73610-1 MSD	ArroyoSimi-SE-20140319	Total/NA	Solid	SM 4500 NH3 D	175206
LCS 440-175206/1-A	Lab Control Sample	Total/NA	Solid	SM 4500 NH3 D	175206
MB 440-175206/2-A	Method Blank	Total/NA	Solid	SM 4500 NH3 D	175206

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

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

TestAmerica Job ID: 440-73610-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
PI	Primary and confirm results varied by > than 40% RPD

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Certification Summary

Client: Haley & Aldrich, Inc.

TestAmerica Job ID: 440-73610-1

Project/Site: Boeing SSFL NPDES Annual Sediment Arroyo

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-14
Arizona	State Program	9	AZ0671	10-13-14
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-14 *
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-14
New Mexico	State Program	6	N/A	01-31-14 *
Northern Mariana Islands	State Program	9	MP0002	01-31-14 *
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-15

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Irvine



8100 Secura Way • Santa Fe Springs, CA 90670
Telephone (562) 347-2500 • Fax (562) 907-3610

April 4, 2014

Debby Wilson
TestAmerica
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5817

Re: PTS File No: 44174
Physical Properties Data
Boeing SSFL NPDES Annual Sediment Arroyo; 440-73610-1

Dear Ms. Wilson:

Please find enclosed report for Physical Properties analyses conducted upon the sample received from your Boeing SSFL NPDES Annual Sediment Arroyo; 440-73610-1 project. All analyses were performed by applicable ASTM, EPA, or API methodologies. An electronic version of the report has previously been sent to your attention via the internet. The sample is currently in storage and will be retained for thirty days past completion of testing at no charge. Please note that the sample will be disposed of at that time. You may contact me regarding storage, disposal, or return of the sample.

PTS Laboratories Inc. appreciates the opportunity to be of service. If you have any questions or require additional information, please contact Morgan Richards at (562) 347-2509.

Sincerely,
PTS Laboratories, Inc.

Michael Mark Brady, P.G.
District Manager

Encl.

Project Name: Boeing SSFL NPDES Annual Sediment Arroyo
Project Number: 440-73610-1

PTS File No: 44174
Client: TestAmerica Irvine

TEST PROGRAM - 20140320

CORE ID	Depth ft.	Core Recovery ft.	Grain Size Analyses						Comments
		Plugs:	Grab						
Date Received: 20140320									
Arroyo Simi (440-73610-1)	N/A	N/A	X						
TOTALS:	1 jar		1						

Laboratory Test Program Notes

Contaminant identification: _____
 Standard TAT for basic analysis is 10 business days.

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

PARTICLE SIZE SUMMARY
 (METHODOLOGY: ASTM D422M)

PROJECT NAME: Boeing SSFL NPDES Annual Sediment Arroyo
 PROJECT NO: 440-73610-1

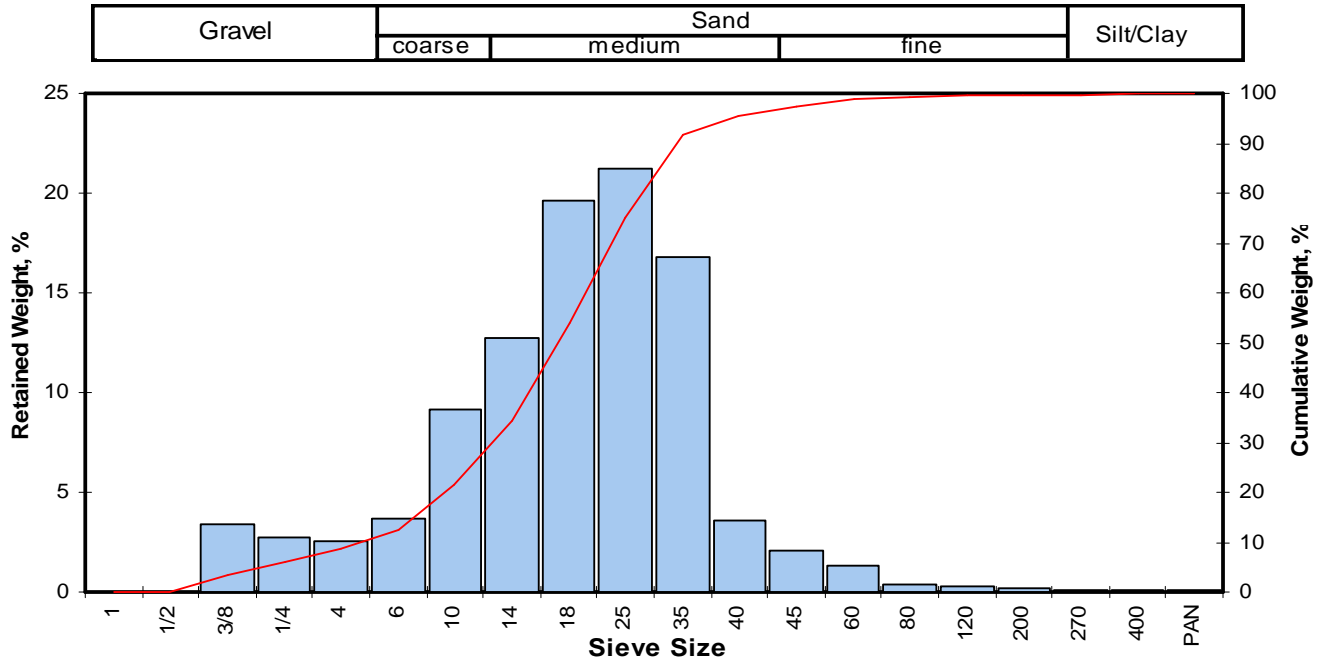
Sample ID	Depth, ft.	Mean Grain Size Description USCS/ASTM (1)	Median Grain Size, mm	Particle Size Distribution, wt. percent				
				Gravel	Sand Size			Silt/Clay
					Coarse	Medium	Fine	
Arroyo Simi (440-73610-1)	N/A	Medium sand	1.070	8.63	12.85	73.94	4.27	0.31



(1) Based on Mean from Trask

Client: TestAmerica Irvine
Project: Boeing SSFL NPDES Annual Sediment Arroyo
Project No: 440-73610-1

PTS File No: 44174
Sample ID: Arroyo Simi (440-73610-1)
Depth, ft: N/A



Opening		Phi of Screen	U.S. Sieve No.	Sample Weight grams	Incremental Weight, percent	Cumulative Weight, percent
Inches	Millimeters					
0.9844	25.002	-4.64	1	0.00	0.00	0.00
0.4922	12.501	-3.64	1/2	0.00	0.00	0.00
0.3740	9.500	-3.25	3/8	10.21	3.42	3.42
0.2500	6.351	-2.67	1/4	8.04	2.69	6.11
0.1873	4.757	-2.25	4	7.52	2.52	8.63
0.1324	3.364	-1.75	6	11.00	3.68	12.32
0.0787	2.000	-1.00	10	27.37	9.17	21.48
0.0557	1.414	-0.50	14	38.09	12.76	34.24
0.0394	1.000	0.00	18	58.47	19.59	53.83
0.0278	0.707	0.50	25	63.48	21.26	75.09
0.0197	0.500	1.00	35	50.03	16.76	91.85
0.0166	0.420	1.25	40	10.67	3.57	95.42
0.0139	0.354	1.50	45	6.14	2.06	97.48
0.0098	0.250	2.00	60	4.02	1.35	98.83
0.0070	0.177	2.50	80	1.25	0.42	99.25
0.0049	0.125	3.00	120	0.75	0.25	99.50
0.0029	0.074	3.75	200	0.58	0.19	99.69
0.0021	0.053	4.25	270	0.27	0.09	99.78
0.0015	0.037	4.75	400	0.23	0.08	99.86
			PAN	0.42	0.14	100.00
TOTALS				298.54	100.00	100.00

Cumulative Weight Percent greater than			
Weight percent	Phi Value	Particle Size	
		Inches	Millimeters
5	-2.91	0.2953	7.501
10	-2.06	0.1647	4.182
16	-1.45	0.1075	2.730
25	-0.86	0.0716	1.818
40	-0.35	0.0503	1.277
50	-0.10	0.0421	1.070
60	0.15	0.0356	0.904
75	0.50	0.0279	0.708
84	0.77	0.0232	0.588
90	0.94	0.0205	0.520
95	1.22	0.0169	0.429

Measure	Trask	Inman	Folk-Ward
Median, phi	-0.10	-0.10	-0.10
Median, in.	0.0421	0.0421	0.0421
Median, mm	1.070	1.070	1.070
Mean, phi	-0.34	-0.34	-0.26
Mean, in.	0.0497	0.0499	0.0472
Mean, mm	1.263	1.267	1.198
Sorting	1.602	1.107	1.179
Skewness	1.060	-0.220	-0.291
Kurtosis	0.151	0.864	1.244

Grain Size Description (ASTM-USCS Scale) Medium sand (based on Mean from Trask)

Description	Retained on Sieve #	Weight Percent
Gravel	4	8.63
Coarse Sand	10	12.85
Medium Sand	40	73.94
Fine Sand	200	4.27
Silt/Clay	<200	0.31
Total		100

Client Information (Sub Contract Lab)			Sampler:		Lab PM: Wilson, Debby S		Carrier Tracking No(s):		COC No: 440-30771.1																				
Client Contact: Shipping/Receiving			Phone:		E-Mail: debby.wilson@testamericainc.com				Page: Page 1 of 1																				
Company: PTS laboratories, Inc					Analysis Requested					Job #: 440-73610-1																			
Address: 8100 Secura Way, City: Santa Fe Springs State, Zip: CA, 90670 Phone:			Due Date Requested: 3/31/2014 TAT Requested (days):											Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)															
Project Name: Boeing SSFL NPDES Annual Sediment Arroyo			Project #: 44009879								Other:																		
Site:			SSOW#:																										
Sample Identification - Client ID (Lab ID)			Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/soil, DT=Tissue, A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		SUB (Particle Size)/ Particle Size		Total Number of containers		Special Instructions/Note:										
Arroyo Simi (440-73610-1)			3/19/14		09:41 Pacific				Solid				X				1		Temp 39°F J.M										
Possible Hazard Identification										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																			
Unconfirmed										<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																			
Deliverable Requested: I, II, III, IV, Other (specify)										Special Instructions/QC Requirements:																			
Empty Kit Relinquished by:					Date:					Time:					Method of Shipment:														
Relinquished by: <i>[Signature]</i>					Date/Time: 3/20/14					Company: CCS					Received by: <i>[Signature]</i>					Date/Time: 3-20-14 / 10:30					Company: DCS				
Relinquished by: <i>[Signature]</i>					Date/Time: 3/20/14 12:17					Company: CCS					Received by: <i>[Signature]</i>					Date/Time: 03-20-14 12:17					Company:				
Relinquished by:					Date/Time: 3/20/14					Company:					Received by:					Date/Time:					Company:				
Custody Seals Intact: Δ Yes Δ No					Custody Seal No.:					Cooler Temperature(s) °C and Other Remarks:					Page 4 of 4 4/11/2014														

CHAIN OF CUSTODY FORM


Client Name/Address: Haley & Aldrich, Inc. 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SSFL NPDES Annual Sediment Arroyo Simi-Frontier Park	
Test America Contact: Debby Wilson Project Manager: Nancy Gardiner		Phone Number: 619.285.7132, 858.337.4061 (cell) Field Contact: Jeff Bannon: 818.350.7340, 818.414.5608 (cell)	
Sampler: Jan Smith			

Sample Description	Matrix	Container Type	# of Cont.	Sample ID	Sampling Date/Time	Pres	Bottle #
Arroyo Simi	S	1L wide mouth Plastic	1	ArroyoSimi-SE-20140319	03/19/14 / 0916	4C in the Dark	1A, 1B, 1C, 1D
Arroyo Simi	S	9 oz Jar	1	ArroyoSimi-SE-20140319	03/19/14 / 0939	40C	2A
Arroyo Simi	S	9 oz Jar	1	ArroyoSimi-SE-20140319	03/19/14 / 0935	40C	3A
Arroyo Simi	S	9 oz Jar	1	ArroyoSimi-SE-20140319	03/19/14 / 0941	40C	4A
Arroyo Simi	S	9 oz Jar	1	ArroyoSimi-SE-20140319	03/19/14 / 0937	40C	5A

Chronic 10-day eohausionus estuanus Toxicity	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas)	Total Ammonia	% Moisture	Particle Size Distribution	Total Organic Carbon	PCBs (8082)	Chlordane, Dieldrn, Toxaphene (8081), 4,4-DDD, 4,4-DDE, 4,4-DDT
X	X	X					DS
							3/19/14

Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____	Sample Integrity: (check) Intact _____ On Ice: _____
Data Requirements: (check) No Level IV _____ All Level IV _____ NPDES Level IV _____ On Ice: _____	33°C/32°C IR-59

Relinquished By Daniel Smith Date/Time: 3/19/14 1015	Received By Shakia Date/Time: 03/19/14 10:25
Relinquished By Shakia Date/Time: 3/19/14	Received By Olga Ornelas Date/Time: 3/19/14 14:13



440-73610 Chain of Custody

Keep sample in cooler in the dark until delivered to ABC Labs

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 440-73610-1

Login Number: 73610

List Number: 1

Creator: Perez, Angel

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-73688-1

Client Project/Site: Annual Sediment Arroyo Simi-Frontier Par


For:

Haley & Aldrich, Inc.

9040 Friars Rd.

San Diego, California 92108

Attn: Nancy Gardiner



Authorized for release by:

4/17/2014 5:09:20 PM

Heather Clark, Project Manager I

heather.clark@testamericainc.com

Designee for

Debby Wilson, Manager of Project Management

(949)261-1022

debby.wilson@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

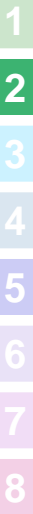


Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Method Summary	4
Definitions/Glossary	5
Certification Summary	6
Subcontract Data	7
Chain of Custody	38

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-73688-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-73688-1	ArroyoSimi-SE-20140319	Solid	03/19/14 09:16	03/19/14 11:20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-73688-1

Method	Method Description	Protocol	Laboratory
48-hour Bivalve Embryo toxicity	General Sub Contract Method	NONE	ABC
Bioassay-Chronic 10day eohaustorius	General Sub Contract Method	NONE	ABC

Protocol References:

NONE = NONE

Laboratory References:

ABC = Aquatic Bioassay - Ventura, CA, 29 North Olive Street, Ventura, CA 93001



Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-73688-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Annual Sediment Arroyo Simi-Frontier Par

TestAmerica Job ID: 440-73688-1

Laboratory: TestAmerica Irvine

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-14
Arizona	State Program	9	AZ0671	10-13-14
California	LA Cty Sanitation Districts	9	10256	01-31-15
California	State Program	9	2706	06-30-14
Hawaii	State Program	9	N/A	01-29-15 *
Nevada	State Program	9	CA015312007A	07-31-14
New Mexico	State Program	6	N/A	01-29-15
Northern Mariana Islands	State Program	9	MP0002	01-31-14 *
Oregon	NELAP	10	4005	01-29-15
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-15

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Irvine



April 16, 2014

Debby Wilson
TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Wilson:


We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods, Method EPA/600/R-94/025*. Results were as follows:

CLIENT:	TestAmerica
SAMPLE I.D.:	Arroyo Simi
DATE RECEIVED:	3/19/2014
ABC LAB. NO.:	TAM0314.297

CHRONIC EOHAUSTORIUS SURVIVAL BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 16 Apr-14 14:51 (p 1 of 1)
 Test Code: TAM0314.297eoh | 15-3869-9374

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 00-5013-6266	Test Type: Survival-Reburial	Analyst:
Start Date: 29 Mar-14 12:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 08 Apr-14 12:00	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 12-9848-5315	Code: TAM0314.297eoh	Client: Test America
Sample Date: 19 Mar-14 09:16	Material: Sediment	Project: Annual Sediment Arroyo Simi-Frontier
Receive Date: 19 Mar-14 11:20	Source: Bioassay Report	
Sample Age: 10d 3h	Station: Arroyo Simi (Sediment)	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
01-2932-0214	Survival Rate	100	>100	NA	5.75%	1	Equal Variance t Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
12-9702-0043	Survival Rate	EC5	>100	N/A	N/A	<1	Linear interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
EC50	>100	N/A	N/A	<1			

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
01-2932-0214	Survival Rate	Control Resp	0.96	0.9 - NL	Yes	Passes Acceptability Criteria
12-9702-0043	Survival Rate	Control Resp	0.96	0.9 - NL	Yes	Passes Acceptability Criteria

Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	5	0.96	0.9081	1	0.9	1	0.01871	0.04183	4.36%	0.0%
100		5	0.95	0.8879	1	0.9	1	0.02236	0.05	5.26%	1.04%

Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.95	0.9	0.95	1	1
100		0.9	1	1	0.95	0.9

Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	19/20	18/20	19/20	20/20	20/20
100		18/20	20/20	20/20	19/20	18/20

CETIS Analytical Report

Report Date: 16 Apr-14 14:51 (p 1 of 2)
 Test Code: TAM0314.297eoh | 15-3869-9374

Eohaustorius 10-d Survival and Reburial Sediment Test Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 01-2932-0214	Endpoint: Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 16 Apr-14 14:51	Analysis: Parametric-Two Sample	Official Results: Yes
Sample ID: 12-9848-5315	Code: TAM0314.297eoh	Client: Test America
Sample Date: 19 Mar-14 09:16	Material: Sediment	Project: Annual Sediment Arroyo Simi-Frontier
Receive Date: 19 Mar-14 11:20	Source: Bioassay Report	
Sample Age: 10d 3h	Station: Arroyo Simi (Sediment)	

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	5.75%	Passes survival rate

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Negative Control		100	0.313	1.86	0.114	8	0.3811	CDF	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0009261589	0.0009261589	1	0.09796	0.7623	Non-Significant Effect
Error	0.07563677	0.009454597	8			
Total	0.07656293		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	1.394	23.15	0.7555	Equal Variances
Variances	Mod Levene Equality of Variance	0.7551	13.75	0.4183	Equal Variances
Variances	Levene Equality of Variance	0.3187	11.26	0.5879	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8656	0.7411	0.0889	Normal Distribution
Distribution	Kolmogorov-Smirnov D	0.2296	0.3025	0.1478	Normal Distribution
Distribution	D'Agostino Skewness	0.08415	2.576	0.9329	Normal Distribution
Distribution	Anderson-Darling A2 Normality	0.6327	3.878	0.0997	Normal Distribution

Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	5	0.96	0.9081	1	0.95	0.9	1	0.01871	4.36%	0.0%
100		5	0.95	0.8879	1	0.95	0.9	1	0.02236	5.26%	1.04%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	5	1.371	1.261	1.482	1.345	1.249	1.459	0.03975	6.48%	0.0%
100		5	1.352	1.222	1.482	1.345	1.249	1.459	0.04692	7.76%	1.4%

Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.95	0.9	0.95	1	1
100		0.9	1	1	0.95	0.9

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	1.345	1.249	1.345	1.459	1.459
100		1.249	1.459	1.459	1.345	1.249

Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	19/20	18/20	19/20	20/20	20/20
100		18/20	20/20	20/20	19/20	18/20

CETIS Analytical Report

Report Date: 16 Apr-14 14:51 (p 2 of 2)
Test Code: TAM0314.297eoh | 15-3869-9374

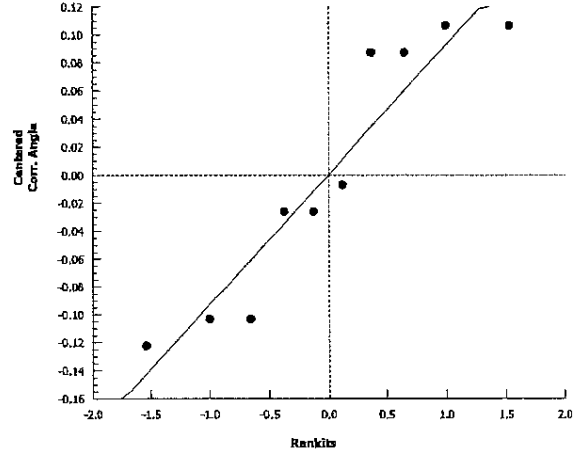
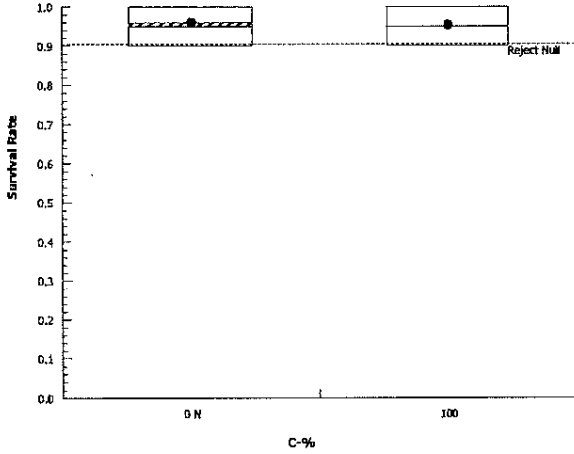
Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 01-2932-0214 Endpoint: Survival Rate
Analyzed: 16 Apr-14 14:51 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.8.7
Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 16 Apr-14 14:51 (p 1 of 1)
 Test Code: TAM0314.297eoh | 15-3869-9374

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 12-9702-0043	Endpoint: Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 16 Apr-14 14:51	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes
Sample ID: 12-9848-5315	Code: TAM0314.297eoh	Client: Test America
Sample Date: 19 Mar-14 09:16	Material: Sediment	Project: Annual Sediment Arroyo Simi-Frontier
Receive Date: 19 Mar-14 11:20	Source: Bioassay Report	
Sample Age: 10d 3h	Station: Arroyo Simi (Sediment)	

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

Survival Rate Summary

Calculated Variate(A/B)

C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	5	0.96	0.9	1	0.01871	0.04183	4.36%	0.0%	96	100
100		5	0.95	0.9	1	0.02236	0.05	5.26%	1.04%	95	100

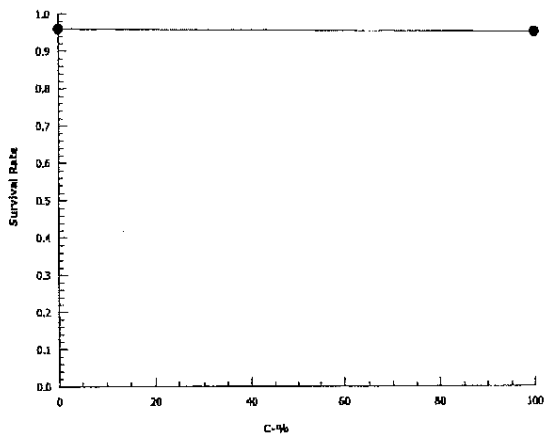
Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.95	0.9	0.95	1	1
100		0.9	1	1	0.95	0.9

Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	19/20	18/20	19/20	20/20	20/20
100		18/20	20/20	20/20	19/20	18/20

Graphics



CETIS Measurement Report

Report Date: 16 Apr-14 14:51 (p 1 of 2)
 Test Code: TAM0314.297eoh | 15-3869-9374

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 00-5013-6266	Test Type: Survival-Reburial	Analyst:
Start Date: 29 Mar-14 12:00	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 08 Apr-14 12:00	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 10d 0h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 12-9848-5315	Code: TAM0314.297eoh	Client: Test America
Sample Date: 19 Mar-14 09:16	Material: Sediment	Project: Annual Sediment Arroyo Simi-Frontier
Receive Date: 19 Mar-14 11:20	Source: Bioassay Report	
Sample Age: 10d 3h	Station: Arroyo Simi (Sediment)	

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	10.05	9.415	10.69	10	10.1	0.05001	0.07073	0.7%	0
100		2	10.2	8.929	11.47	10.1	10.3	0.1	0.1414	1.39%	0
Overall		4	10.13			10	10.3				0 (0%)

Total Ammonia (N)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	0	0	0	0	0	0	0		0
100		2	0	0	0	0	0	0	0		0
Overall		4	0			0	0				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.7	7.698	7.702	7.7	7.7	0	0	0.0%	0
100		2	8.1	5.559	10.64	7.9	8.3	0.2	0.2828	3.49%	0
Overall		4	7.9			7.7	8.3				0 (0%)

Salinity-ppt

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	20	20	20	20	20	0	0	0.0%	0
100		2	20	20	20	20	20	0	0	0.0%	0
Overall		4	20			20	20				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
100		2	14.85	14.21	15.49	14.8	14.9	0.05004	0.07077	0.48%	0
Overall		4	14.85			14.8	14.9				0 (0%)

CETIS Measurement Report

Report Date: 16 Apr-14 14:51 (p 2 of 2)
Test Code: TAM0314.297eoh | 15-3869-9374

Eohaustorius 10-d Survival and Reburial Sediment Test

Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

C-%	Control Type	1	2
0	Negative Contr	10.1	10
100		10.3	10.1

Total Ammonia (N)-mg/L

C-%	Control Type	1	2
0	Negative Contr	0	0
100		0	0

pH-Units

C-%	Control Type	1	2
0	Negative Contr	7.7	7.7
100		7.9	8.3

Salinity-ppt

C-%	Control Type	1	2
0	Negative Contr	20	20
100		20	20

Temperature-°C

C-%	Control Type	1	2
0	Negative Contr	14.8	14.9
100		14.8	14.9

CHAIN OF CUSTODY FORM

ANALYSIS REQUIRED

Client Name/Address:
 Haley & Aldrich, Inc.
 9040 Friars Road Suite
 220
 San Diego, CA 92108-5860

Project:
 Boeing-SSFL NPDES
 Annual Sediment Arroyo Simi-Frontier Park

Test America Contact: Debby Wilson

Project Manager: Nancy Gardiner

Sampler: Daniel Smith

Phone Number:
 619.285.7132, 858.337.4061 (cell)
 Field Contact, Jeff Bannor:
 818.350.7340, 818.414.5608 (cell)

Sample Description	Sample Matrix	Container Type	# of Con.	Sample ID	Sampling Date/Time	Preservative	Bottle #
Arroyo Simi S		1L wide mouth Plastic	4	ArroyoSimi-	3/17/14 6:16	4C in the Dark	1A, 1B, 1C, 1D
Arroyo Simi S		9 oz jar	1	ArroyoSimi-		4 deg C	2A
Arroyo Simi S		9 oz jar	1	ArroyoSimi-		4 deg C	3A
Arroyo Simi S		9 oz jar	1	ArroyoSimi-		4 deg C	4A
Arroyo Simi S		9 oz jar	1	ArroyoSimi-		4 deg C	5A

Chronic 10-day eohaustorius estuarinus Toxicity	48-hour Bivalve Embryo toxicity (Mytilus edulis or Crassostrea gigas)	Total Ammonia	% Moisture	Particle Size Distribution	Total Organic Carbon	PCBs (8082)	Chlordane, Dieldrin, Toxaphene (8081), 4,4-DDD, 4,4-DDE, 4,4-DDT
X	X	X	X	X	X	X	X

Field readings:
 Temp = 13.80
 pH = 6.10
 DO = 8.17
 Conductivity = 2.20
 Water Velocity (ft/sec) = 0.0
 Time of readings = 0801
 Turbidity = 7.5 NTU
 Comments: Keep sample in cooler in the dark & delivered to ABC Labs

Relinquished By	Date/Time	Received By	Date/Time	Turn around Time: (check)
Daniel Smith	3/19/14 10:15	Shafiq NABT	03/19/14 20:25	24 Hours _____ 5 Days _____
Shafiq NABT	3/19/14 11:20	Brethyn	03/19/14 14:00	48 Hours _____ 10 Days _____
Relinquished By	Date/Time	Received By	Date/Time	72 Hours _____ Normal _____
Relinquished By	Date/Time	Received By	Date/Time	Sample Integrity: (check) On Ice: _____
Relinquished By	Date/Time	Received By	Date/Time	Data Requirements: (check) No Level IV _____ All Level IV _____
Relinquished By	Date/Time	Received By	Date/Time	NPDES Level IV On Ice: _____



April 16, 2014

Debby Wilson
TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Wilson:

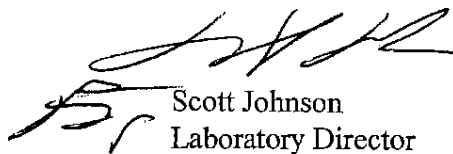
We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms, EPA/R-95/136*. Results were as follows:

CLIENT:	TestAmerica
SAMPLE I.D.:	Arroyo Simi
DATE RECEIVED:	3/19/2014
ABC LAB. NO.:	TAM0314.297

CHRONIC MYTILUS DEVELOPMENT BIOASSAY

NOEC =	100.00 %
TUc =	1.00
EC25 =	>100.00 %
EC50 =	>100.00 %

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 16 Apr-14 15:09 (p 1 of 1)
 Test Code: TAM0314.297myt | 14-8741-4294

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 05-7246-3504	Test Type: Development-Survival	Analyst:
Start Date: 29 Mar-14 16:40	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Water
Ending Date: 31 Mar-14 16:40	Species: Mytilus galloprovincialis	Brine:
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 04-7632-2669	Code: TAM0314.297myt	Client: Test America
Sample Date: 19 Mar-14 09:16	Material: Sample Water	Project: Annual Sediment Arroyo Simi-Frontier
Receive Date: 19 Mar-14 11:20	Source: Bioassay Report	
Sample Age: 10d 7h	Station: Arroyo Simi	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
04-0877-2752	Combined Proportion Norm	100	>100	NA	5.94%	1	Equal Variance t Two-Sample Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
20-2187-3849	Combined Proportion Norm	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
04-0877-2752	Combined Proportion Norm	PMSD	0.05936	NL - 0.25	No	Passes Acceptability Criteria

Combined Proportion Normal Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	5	0.9253	0.9014	0.9492	0.9046	0.9502	0.006604	0.01924	2.08%	0.0%
100		5	0.9394	0.8886	0.9902	0.888	0.9959	0.0183	0.04093	4.36%	-1.53%

Combined Proportion Normal Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9502	0.9378	0.9046	0.9253	0.9087
100		0.888	0.9378	0.9585	0.9959	0.917

Combined Proportion Normal Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	229/241	226/241	218/241	223/241	219/241
100		214/241	226/241	231/241	240/241	221/241

CETIS Analytical Report

Report Date: 16 Apr-14 15:09 (p 1 of 2)
 Test Code: TAM0314.297myt | 14-8741-4294

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 04-0877-2752	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.8.7
Analyzed: 16 Apr-14 15:09	Analysis: Parametric-Two Sample	Official Results: Yes
Sample ID: 04-7632-2669	Code: TAM0314.297myt	Client: Test America
Sample Date: 19 Mar-14 09:16	Material: Sample Water	Project: Annual Sediment Arroyo Simi-Frontier
Receive Date: 19 Mar-14 11:20	Source: Bioassay Report	
Sample Age: 10d 7h	Station: Arroyo Simi	

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	5.94%	Passes combined proportion normal

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Negative Control		100	-0.876	1.86	0.093	8	0.7967	CDF	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.004828311	0.004828311	1	0.7674	0.4066	Non-Significant Effect
Error	0.05033305	0.006291631	8			
Total	0.05516136		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F	8.04	23.15	0.0680	Equal Variances
Variances	Mod Levene Equality of Variance	2.542	13.75	0.1620	Equal Variances
Variances	Levene Equality of Variance	2.788	11.26	0.1335	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9339	0.7411	0.4878	Normal Distribution
Distribution	Kolmogorov-Smirnov D	0.1645	0.3025	0.7344	Normal Distribution
Distribution	D'Agostino Skewness	1.515	2.576	0.1297	Normal Distribution
Distribution	Anderson-Darling A2 Normality	0.3864	3.878	0.3946	Normal Distribution

Combined Proportion Normal Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	5	0.9253	0.9014	0.9492	0.9253	0.9046	0.9502	0.008604	2.08%	0.0%
100		5	0.9394	0.8886	0.9902	0.9378	0.888	0.9959	0.0183	4.36%	-1.53%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	5	1.296	1.249	1.342	1.294	1.257	1.346	0.01668	2.88%	0.0%
100		5	1.34	1.208	1.471	1.319	1.229	1.506	0.04731	7.9%	-3.39%

Combined Proportion Normal Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9502	0.9378	0.9046	0.9253	0.9087
100		0.888	0.9378	0.9585	0.9959	0.917

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	1.346	1.319	1.257	1.294	1.264
100		1.229	1.319	1.366	1.506	1.279

Combined Proportion Normal Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	229/241	226/241	218/241	223/241	219/241
100		214/241	226/241	231/241	240/241	221/241

CETIS Analytical Report

Report Date: 16 Apr-14 15:09 (p 2 of 2)
Test Code: TAM0314.297myt | 14-8741-4294

Mussel Shell Development Test

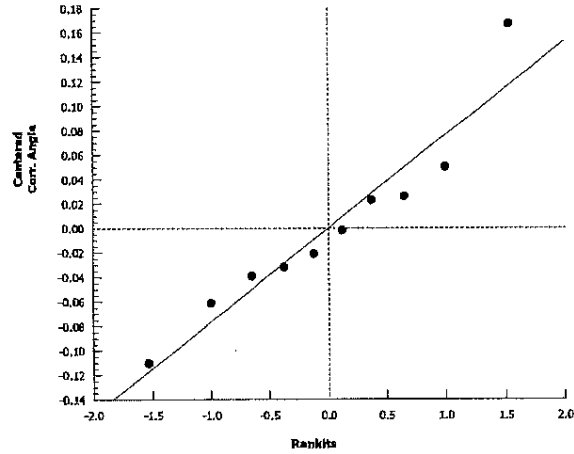
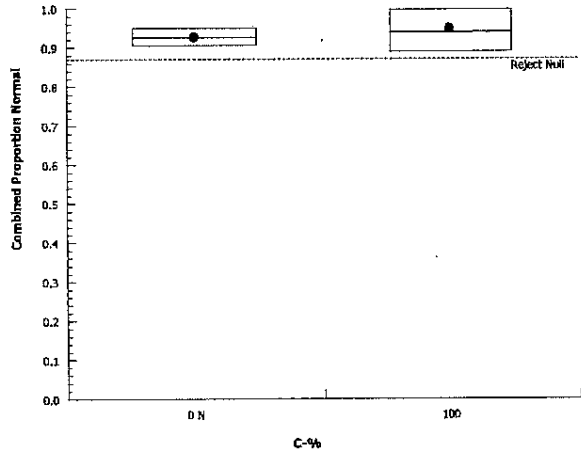
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 04-0877-2752
Analyzed: 16 Apr-14 15:09

Endpoint: Combined Proportion Normal
Analysis: Parametric-Two Sample

CETIS Version: CETISv1.8.7
Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 16 Apr-14 15:09 (p 1 of 1)
 Test Code: TAM0314.297myt | 14-8741-4294

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 20-2187-3849	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.8.7
Analyzed: 16 Apr-14 15:09	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes
Sample ID: 04-7632-2669	Code: TAM0314.297myt	Client: Test America
Sample Date: 19 Mar-14 09:16	Material: Sample Water	Project: Annual Sediment Arroyo Simi-Frontier
Receive Date: 19 Mar-14 11:20	Source: Bioassay Report	
Sample Age: 10d 7h	Station: Arroyo Simi	

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

Combined Proportion Normal Summary

Calculated Variate(A/B)

C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	5	0.9253	0.9046	0.9502	0.008604	0.01924	2.08%	0.0%	1115	1205
100		5	0.9394	0.888	0.9959	0.0183	0.04093	4.36%	-1.53%	1132	1205

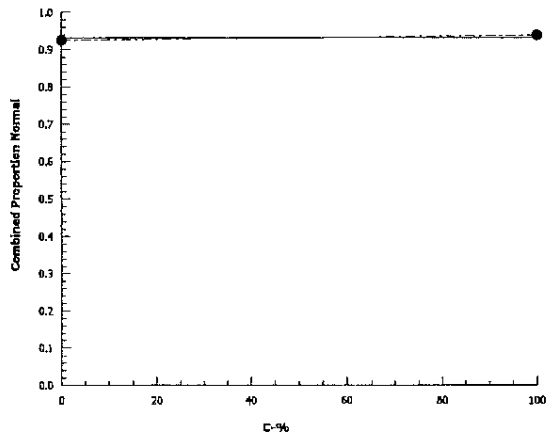
Combined Proportion Normal Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9502	0.9378	0.9046	0.9253	0.9087
100		0.888	0.9378	0.9585	0.9959	0.917

Combined Proportion Normal Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	229/241	226/241	218/241	223/241	219/241
100		214/241	226/241	231/241	240/241	221/241

Graphics



CETIS Measurement Report

Report Date: 16 Apr-14 15:09 (p 1 of 2)
 Test Code: TAM0314.297myt | 14-8741-4294

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 05-7246-3504	Test Type: Development-Survival	Analyst:
Start Date: 29 Mar-14 16:40	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Water
Ending Date: 31 Mar-14 16:40	Species: Mytilus galloprovincialis	Brine:
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 04-7632-2669	Code: TAM0314.297myt	Client: Test America
Sample Date: 19 Mar-14 09:16	Material: Sample Water	Project: Annual Sediment Arroyo Simi-Frontier
Receive Date: 19 Mar-14 11:20	Source: Bioassay Report	
Sample Age: 10d 7h	Station: Arroyo Simi	

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	9.95	8.044	11.86	9.8	10.1	0.15	0.2121	2.13%	0
100		2	10.15	9.515	10.79	10.1	10.2	0.05	0.0707	0.7%	0
Overall		4	10.05			9.8	10.2				0 (0%)

Total Ammonia (N)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	0	0	0	0	0	0	0		0
100		2	0	0	0	0	0	0	0		0
Overall		4	0			0	0				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.8	6.529	9.071	7.7	7.9	0.1	0.1414	1.81%	0
100		2	7.75	7.115	8.385	7.7	7.8	0.05001	0.07072	0.91%	0
Overall		4	7.775			7.7	7.9				0 (0%)

Salinity-ppt

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	32	32	32	32	32	0	0	0.0%	0
100		2	32	32	32	32	32	0	0	0.0%	0
Overall		4	32			32	32				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
100		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
Overall		4	14.75			14.7	14.8				0 (0%)

CETIS Measurement Report

Report Date: 16 Apr-14 15:09 (p 2 of 2)
 Test Code: TAM0314.297myt | 14-8741-4294

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

C-%	Control Type	1	2
0	Negative Contr	10.1	9.8
100		10.2	10.1

Total Ammonia (N)-mg/L

C-%	Control Type	1	2
0	Negative Contr	0	0
100		0	0

pH-Units

C-%	Control Type	1	2
0	Negative Contr	7.7	7.9
100		7.8	7.7

Salinity-ppt

C-%	Control Type	1	2
0	Negative Contr	32	32
100		32	32

Temperature-°C

C-%	Control Type	1	2
0	Negative Contr	14.8	14.7
100		14.8	14.7



CHRONIC MYTILUS DEVELOPMENT BIOASSAY

DATE: 03/29/2014

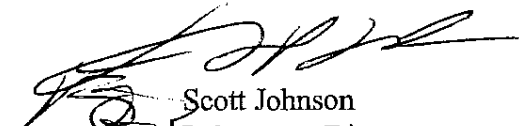
STANDARD TOXICANT: Unionized Ammonia

NOEC = 0.027 mg/l

EC25 = 0.0602 mg/l

EC50 = 0.0806 mg/l

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 16 Apr-14 15:03 (p 1 of 1)
 Test Code: MYT032914 | 18-8924-2732

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-0672-0961	Test Type: Development-Survival	Analyst:
Start Date: 29 Mar-14 16:30	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Mar-14 16:30	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 21-2952-8675	Code: MYT032914	Client: Internal Lab
Sample Date: 29 Mar-14 16:30	Material: Ammonia (Unionized)	Project: REF TOX
Receive Date:	Source: Reference Toxicant	
Sample Age: NA	Station: REF TOX	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
09-2740-9212	Combined Proportion Norm	0.027	0.051	0.03711	6.52%		Dunnett Multiple Comparison Test

Point Estimate Summary

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
20-2604-6547	Combined Proportion Norm	EC5	0.03561	0.0273	0.04063		Linear Interpolation (ICPIN)
		EC10	0.04422	0.03672	0.05425		
		EC15	0.05189	0.04438	0.05653		
		EC20	0.05604	0.05172	0.06038		
		EC25	0.0602	0.05587	0.06435		
		EC40	0.07267	0.06571	0.07882		
		EC50	0.08061	0.07152	0.08478		

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
09-2740-9212	Combined Proportion Norm	PMSD	0.06524	NL - 0.25	No	Passes Acceptability Criteria

Combined Proportion Normal Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	5	0.9054	0.8583	0.9525	0.8589	0.9461	0.01698	0.03796	4.19%	0.0%
0.027		5	0.9112	0.875	0.9474	0.8631	0.9378	0.01303	0.02913	3.2%	-0.64%
0.051		5	0.7817	0.7311	0.8324	0.7344	0.834	0.01826	0.04082	5.22%	13.66%
0.075		5	0.5195	0.4275	0.6116	0.3983	0.5851	0.03315	0.07413	14.27%	42.62%
0.097		5	0.2631	0.2226	0.3036	0.2407	0.3195	0.01459	0.03262	12.4%	70.94%
0.119		5	0.01494	0	0.04259	0	0.04979	0.009959	0.02227	149.1%	98.35%

Combined Proportion Normal Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9461	0.9087	0.9378	0.8755	0.8589
0.027		0.8631	0.9087	0.9378	0.917	0.9295
0.051		0.834	0.8091	0.7801	0.7344	0.751
0.075		0.3983	0.5021	0.5519	0.5602	0.5851
0.097		0.2573	0.2407	0.3195	0.2573	0.2407
0.119		0.04979	0.0249	0	0	0

Combined Proportion Normal Binomials

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	228/241	219/241	226/241	211/241	207/241
0.027		208/241	219/241	226/241	221/241	224/241
0.051		201/241	195/241	188/241	177/241	181/241
0.075		96/241	121/241	133/241	135/241	141/241
0.097		62/241	58/241	77/241	62/241	58/241
0.119		12/241	6/241	0/241	0/241	0/241

CETIS Analytical Report

Report Date: 16 Apr-14 15:03 (p 1 of 2)
 Test Code: MYT032914 | 18-8924-2732

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 09-2740-9212	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.8.7
Analyzed: 16 Apr-14 15:03	Analysis: Parametric-Control vs Treatments	Official Results: Yes
Sample ID: 21-2952-8675	Code: MYT032914	Client: Internal Lab
Sample Date: 29 Mar-14 16:30	Material: Ammonia (Unionized)	Project: REF TOX
Receive Date:	Source: Reference Toxicant	
Sample Age: NA	Station: REF TOX	

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	6.52%	0.027	0.051	0.03711	

Dunnnett Multiple Comparison Test

Control	vs	C-mg/L	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Negative Control		0.027	-0.1986	2.362	0.095	8	0.8853	CDF	Non-Significant Effect
		0.051*	4.398	2.362	0.095	8	0.0004	CDF	Significant Effect
		0.075*	11.39	2.362	0.095	8	<0.0001	CDF	Significant Effect
		0.097*	18.02	2.362	0.095	8	<0.0001	CDF	Significant Effect
		0.119*	29.01	2.362	0.095	8	<0.0001	CDF	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	5.35525	1.07105	5	264.8	<0.0001	Significant Effect
Error	0.09707355	0.004044731	24			
Total	5.452323		29			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance	3.788	15.09	0.5803	Equal Variances
Variances	Mod Levene Equality of Variance	0.544	4.248	0.7407	Equal Variances
Variances	Levene Equality of Variance	1.828	3.895	0.1453	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9763	0.9031	0.7208	Normal Distribution
Distribution	Koimogorov-Smirnov D	0.104	0.1853	0.5533	Normal Distribution
Distribution	D'Agostino Skewness	0.03649	2.576	0.9709	Normal Distribution
Distribution	D'Agostino Kurtosis	0.4627	2.576	0.6436	Normal Distribution
Distribution	D'Agostino-Pearson K2 Omnibus	0.2154	9.21	0.8979	Normal Distribution
Distribution	Anderson-Darling A2 Normality	0.3567	3.878	0.4606	Normal Distribution

Combined Proportion Normal Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	5	0.9054	0.8583	0.9525	0.9087	0.8589	0.9461	0.01698	4.19%	0.0%
0.027		5	0.9112	0.875	0.9474	0.917	0.8631	0.9378	0.01303	3.2%	-0.64%
0.051		5	0.7817	0.7311	0.8324	0.7801	0.7344	0.834	0.01826	5.22%	13.66%
0.075		5	0.5195	0.4275	0.6116	0.5519	0.3983	0.5851	0.03315	14.27%	42.62%
0.097		5	0.2631	0.2226	0.3036	0.2573	0.2407	0.3195	0.01459	12.4%	70.94%
0.119		5	0.01494	0	0.04259	0	0	0.04979	0.009959	149.1%	98.35%

Angular (Corrected) Transformed Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	5	1.263	1.181	1.344	1.264	1.186	1.336	0.02936	5.2%	0.0%
0.027		5	1.271	1.21	1.332	1.279	1.192	1.319	0.02193	3.86%	-0.63%
0.051		5	1.086	1.024	1.148	1.083	1.029	1.151	0.0223	4.59%	14.01%
0.075		5	0.8049	0.7123	0.8975	0.8374	0.683	0.8709	0.03334	9.26%	36.27%
0.097		5	0.538	0.4929	0.5832	0.5319	0.5127	0.6007	0.01625	6.76%	57.4%
0.119		5	0.09602	-0.01634	0.2084	0.03221	0.03221	0.225	0.04047	94.24%	92.4%

CETIS Analytical Report

Report Date: 16 Apr-14 15:03 (p 2 of 2)
 Test Code: MYT032914 | 18-8924-2732

Mussei Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 09-2740-9212 Endpoint: Combined Proportion Normal CETIS Version: CETISv1.8.7
 Analyzed: 16 Apr-14 15:03 Analysis: Parametric-Control vs Treatments Official Results: Yes

Combined Proportion Normal Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9461	0.9087	0.9378	0.8755	0.8589
0.027		0.8631	0.9087	0.9378	0.917	0.9295
0.051		0.834	0.8091	0.7801	0.7344	0.751
0.075		0.3983	0.5021	0.5519	0.5602	0.5851
0.097		0.2573	0.2407	0.3195	0.2573	0.2407
0.119		0.04979	0.0249	0	0	0

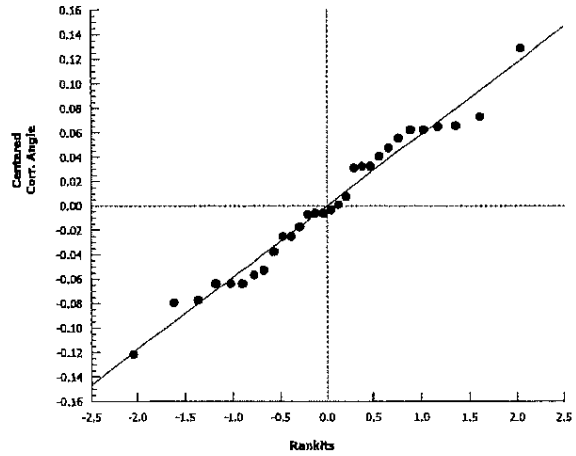
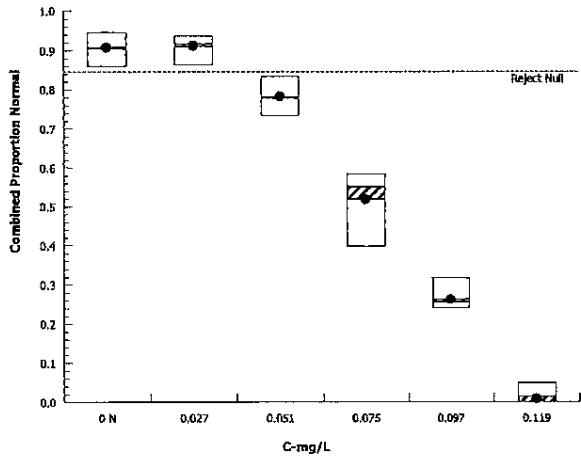
Angular (Corrected) Transformed Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	1.336	1.264	1.319	1.21	1.186
0.027		1.192	1.264	1.319	1.279	1.302
0.051		1.151	1.119	1.083	1.029	1.048
0.075		0.683	0.7875	0.8374	0.8457	0.8709
0.097		0.5319	0.5127	0.6007	0.5319	0.5127
0.119		0.225	0.1584	0.03221	0.03221	0.03221

Combined Proportion Normal Binomials

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	228/241	219/241	226/241	211/241	207/241
0.027		208/241	219/241	226/241	221/241	224/241
0.051		201/241	195/241	188/241	177/241	181/241
0.075		96/241	121/241	133/241	135/241	141/241
0.097		62/241	58/241	77/241	62/241	58/241
0.119		12/241	6/241	0/241	0/241	0/241

Graphics



CETIS Analytical Report

Report Date: 16 Apr-14 15:03 (p 1 of 2)
 Test Code: MYT032914 | 18-8924-2732

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 20-2604-6547	Endpoint: Combined Proportion Normal	CETIS Version: CETISv1.8.7
Analyzed: 16 Apr-14 15:03	Analysis: Linear Interpolation (ICPIN)	Official Results: Yes
Sample ID: 21-2952-8675	Code: MYT032914	Client: Internal Lab
Sample Date: 29 Mar-14 16:30	Material: Ammonia (Unionized)	Project: REF TOX
Receive Date:	Source: Reference Toxicant	
Sample Age: NA	Station: REF TOX	

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Point Estimates

Level	mg/L	95% LCL	95% UCL
EC5	0.03561	0.0273	0.04063
EC10	0.04422	0.03672	0.05425
EC15	0.05189	0.04438	0.05653
EC20	0.05604	0.05172	0.06038
EC25	0.0602	0.05587	0.06435
EC40	0.07267	0.06571	0.07882
EC50	0.08061	0.07152	0.08478

Combined Proportion Normal Summary

Calculated Variate(A/B)

C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	5	0.9054	0.8589	0.9461	0.01698	0.03796	4.19%	0.0%	1091	1205
0.027		5	0.9112	0.8631	0.9378	0.01303	0.02913	3.2%	-0.64%	1098	1205
0.051		5	0.7817	0.7344	0.834	0.01826	0.04082	5.22%	13.66%	942	1205
0.075		5	0.5195	0.3983	0.5851	0.03315	0.07413	14.27%	42.62%	626	1205
0.097		5	0.2631	0.2407	0.3195	0.01459	0.03262	12.4%	70.94%	317	1205
0.119		5	0.01494	0	0.04979	0.009959	0.02227	149.1%	98.35%	18	1205

Combined Proportion Normal Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	0.9461	0.9087	0.9378	0.8755	0.8589
0.027		0.8631	0.9087	0.9378	0.917	0.9295
0.051		0.834	0.8091	0.7801	0.7344	0.751
0.075		0.3983	0.5021	0.5519	0.5602	0.5851
0.097		0.2573	0.2407	0.3195	0.2573	0.2407
0.119		0.04979	0.0249	0	0	0

Combined Proportion Normal Binomials

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Negative Control	228/241	219/241	226/241	211/241	207/241
0.027		208/241	219/241	226/241	221/241	224/241
0.051		201/241	195/241	188/241	177/241	181/241
0.075		96/241	121/241	133/241	135/241	141/241
0.097		62/241	58/241	77/241	62/241	58/241
0.119		12/241	6/241	0/241	0/241	0/241

CETIS Measurement Report

Report Date: 16 Apr-14 15:03 (p 1 of 2)
 Test Code: MYT032914 | 18-8924-2732

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 14-0672-0961	Test Type: Development-Survival	Analyst:
Start Date: 29 Mar-14 16:30	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 31 Mar-14 16:30	Species: Mytilis galloprovincialis	Brine: Not Applicable
Duration: 48h	Source: Carlsbad Aquafarms CA	Age:
Sample ID: 21-2952-8675	Code: MYT032914	Client: Internal Lab
Sample Date: 29 Mar-14 16:30	Material: Ammonia (Unionized)	Project: REF TOX
Receive Date:	Source: Reference Toxicant	
Sample Age: NA	Station: REF TOX	

Dissolved Oxygen-mg/L

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	8.45	4.003	12.9	8.1	8.8	0.35	0.495	5.86%	0
0.027		2	8.45	6.544	10.36	8.3	8.6	0.15	0.2121	2.51%	0
0.051		2	8.2	4.388	12.01	7.9	8.5	0.3	0.4243	5.17%	0
0.075		2	8.7	3.618	13.78	8.3	9.1	0.4	0.5657	6.5%	0
0.097		2	8.75	1.762	15.74	8.2	9.3	0.55	0.7778	8.89%	0
0.119		2	9	2.647	15.35	8.5	9.5	0.5	0.7071	7.86%	0
Overall		12	8.592			7.9	9.5				0 (0%)

pH-Units

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
0.027		2	7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
0.051		2	7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
0.075		2	7.8	7.787	7.813	7.8	7.8	0	0	0.0%	0
0.097		2	7.8	7.787	7.813	7.8	7.8	0	0	0.0%	0
0.119		2	7.8	7.787	7.813	7.8	7.8	0	0	0.0%	0
Overall		12	7.825			7.8	7.9				0 (0%)

Salinity-ppt

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	32	32	32	32	32	0	0	0.0%	0
0.027		2	32	32	32	32	32	0	0	0.0%	0
0.051		2	32	32	32	32	32	0	0	0.0%	0
0.075		2	32	32	32	32	32	0	0	0.0%	0
0.097		2	32	32	32	32	32	0	0	0.0%	0
0.119		2	32	32	32	32	32	0	0	0.0%	0
Overall		12	32			32	32				0 (0%)

Temperature-°C

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.027		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.051		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.075		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.097		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.119		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
Overall		12	14.75			14.7	14.8				0 (0%)

CETIS Measurement Report

Report Date: 16 Apr-14 15:03 (p 2 of 2)
 Test Code: MYT032914 | 18-B924-2732

Mussel Shell Development Test

Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

C-mg/L	Control Type	1	2
0	Negative Contr	8.1	8.8
0.027		8.3	8.6
0.051		8.5	7.9
0.075		9.1	8.3
0.097		9.3	8.2
0.119		9.5	8.5

Total Ammonia (N)-mg/L

C-mg/L	Control Type	1	2
0	Negative Contr		
0.027			
0.051			
0.075			
0.097			
0.119			

pH-Units

C-mg/L	Control Type	1	2
0	Negative Contr	7.9	7.8
0.027		7.9	7.8
0.051		7.9	7.8
0.075		7.8	7.8
0.097		7.8	7.8
0.119		7.8	7.8

Salinity-ppt

C-mg/L	Control Type	1	2
0	Negative Contr	32	32
0.027		32	32
0.051		32	32
0.075		32	32
0.097		32	32
0.119		32	32

Temperature-°C

C-mg/L	Control Type	1	2
0	Negative Contr	14.8	14.7
0.027		14.8	14.7
0.051		14.8	14.7
0.075		14.8	14.7
0.097		14.8	14.7
0.119		14.8	14.7



96 Hour Eohaustorius estuarius Survival Bioassay - Standard Toxicant

DATE: March 29, 2014

STANDARD TOXICANT: Ammonium Chloride

ENDPOINT: SURVIVAL


AMMONIA CHLORIDE

NOEC = 0.433mg/L

EC25 = 0.589mg/L

EC50 = 1.107 mg/L

Yours very truly,



Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 16 Apr-14 14:46 (p 1 of 1)
 Test Code: EOH032914 | 12-6769-6316

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 10-8891-5781	Test Type: Survival	Analyst:
Start Date: 29 Mar-14 12:05	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 02 Apr-14 12:05	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 96h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 03-6054-3333	Code: EOH032914	Client: Internal Lab
Sample Date: 29 Mar-14 12:05	Material: Ammonia (Unionized)	Project: REF TOX
Receive Date:	Source: Reference Toxicant	
Sample Age: NA	Station: REF TOX	

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
13-0629-9675	Survival Rate	0.433	0.744	0.5676	9.99%		Steel Many-One Rank Sum Test

Point Estimate Summary

Analysis ID	Endpoint	Level	mg/L	95% LCL	95% UCL	TU	Method
19-3437-9784	Survival Rate	EC5	0.3255	0.2395	0.5638		Linear Interpolation (ICPIN)
		EC10	0.433	0.261	0.5657		
		EC15	0.4848	0.3159	0.6009		
		EC20	0.5367	0.3708	0.6362		
		EC25	0.5885	0.4503	0.6714		
		EC40	0.744	0.6445	1.034		
		EC50	1.107	0.744	1.441		

Survival Rate Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0.218		4	1	1	1	1	1	0	0	0.0%	0.0%
0.433		4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	10.0%
0.744		4	0.6	0.4701	0.7299	0.5	0.7	0.04082	0.08165	13.61%	40.0%
1.561		4	0.375	0.2227	0.5273	0.3	0.5	0.04787	0.09574	25.53%	62.5%
3.277		4	0	0	0	0	0	0	0		100.0%

Survival Rate Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
0.218		1	1	1	1
0.433		0.8	0.8	1	1
0.744		0.7	0.6	0.6	0.5
1.561		0.5	0.3	0.4	0.3
3.277		0	0	0	0

Survival Rate Binomials

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
0.218		10/10	10/10	10/10	10/10
0.433		8/10	8/10	10/10	10/10
0.744		7/10	6/10	6/10	5/10
1.561		5/10	3/10	4/10	3/10
3.277		0/10	0/10	0/10	0/10

CETIS Analytical Report

Report Date: 16 Apr-14 14:46 (p 1 of 2)
 Test Code: EOH032914 | 12-6769-6316

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 13-0629-9675	Endpoint: Survival Rate	CETIS Version: CETISv1.8.7
Analyzed: 16 Apr-14 14:45	Analysis: Nonparametric-Control vs Treatments	Official Results: Yes
Sample ID: 03-6054-3333	Code: EOH032914	Client: Internal Lab
Sample Date: 29 Mar-14 12:05	Material: Ammonia (Unionized)	Project: REF TOX
Receive Date:	Source: Reference Toxicant	
Sample Age: NA	Station: REF TOX	

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	NOEL	LOEL	TOEL	TU
Angular (Corrected)	NA	C > T	NA	NA	9.99%	0.433	0.744	0.5676	

Steel Many-One Rank Sum Test

Control	vs	C-mg/L	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Negative Control		0.218	18	10	1	6	0.8000	Asymp	Non-Significant Effect
		0.433	14	10	1	6	0.3081	Asymp	Non-Significant Effect
		0.744*	10	10	0	6	0.0350	Asymp	Significant Effect
		1.561*	10	10	0	6	0.0350	Asymp	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.832495	0.4581239	4	47.94	<0.0001	Significant Effect
Error	0.1433404	0.009556027	15			
Total	1.975836		19			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	13.24	4.893	<0.0001	Unequal Variances
Variances	Levene Equality of Variance	15.61	4.893	<0.0001	Unequal Variances
Distribution	Shapiro-Wilk W Normality	0.8891	0.866	0.0259	Normal Distribution
Distribution	Kolmogorov-Smirnov D	0.25	0.2235	0.0020	Non-normal Distribution
Distribution	D'Agostino Skewness	0.2316	2.576	0.8169	Normal Distribution
Distribution	D'Agostino Kurtosis	0.1447	2.576	0.8850	Normal Distribution
Distribution	D'Agostino-Pearson K2 Omnibus	0.07455	9.21	0.9634	Normal Distribution
Distribution	Anderson-Darling A2 Normality	1.279	3.878	0.0022	Non-normal Distribution

Survival Rate Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	4	1	1	1	1	1	1	0	0.0%	0.0%
0.218		4	1	1	1	1	1	1	0	0.0%	0.0%
0.433		4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	10.0%
0.744		4	0.6	0.4701	0.7299	0.6	0.5	0.7	0.04082	13.61%	40.0%
1.561		4	0.375	0.2227	0.5273	0.35	0.3	0.5	0.04787	25.53%	62.5%
3.277		4	0	0	0	0	0	0	0	0.0%	100.0%

Angular (Corrected) Transformed Summary

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Contr	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
0.218		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.0%	0.0%
0.433		4	1.26	0.9795	1.54	1.26	1.107	1.412	0.08801	13.97%	10.8%
0.744		4	0.8872	0.7535	1.021	0.8861	0.7854	0.9912	0.04201	9.47%	37.17%
1.561		4	0.6573	0.5003	0.8144	0.6322	0.5796	0.7854	0.04935	15.01%	53.45%
3.277		4	0.1588	0.1588	0.1588	0.1588	0.1588	0.1588	0	0.0%	88.76%

CETIS Analytical Report

Report Date: 16 Apr-14 14:46 (p 2 of 2)
 Test Code: EOH032914 | 12-6769-6316

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 13-0629-9675 Endpoint: Survival Rate
 Analyzed: 16 Apr-14 14:45 Analysis: Nonparametric-Control vs Treatments

CETIS Version: CETISv1.8.7
 Official Results: Yes

Survival Rate Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
0.218		1	1	1	1
0.433		0.8	0.8	1	1
0.744		0.7	0.6	0.6	0.5
1.561		0.5	0.3	0.4	0.3
3.277		0	0	0	0

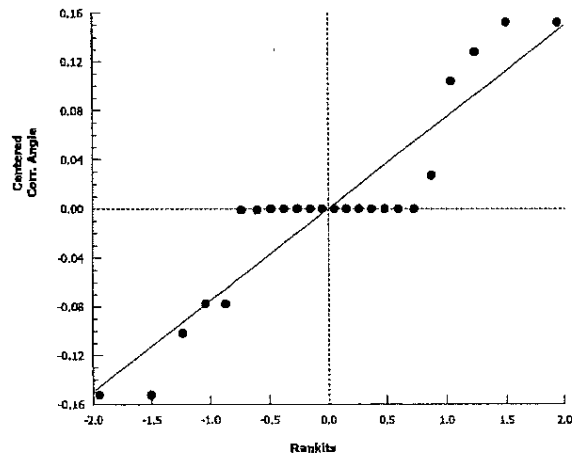
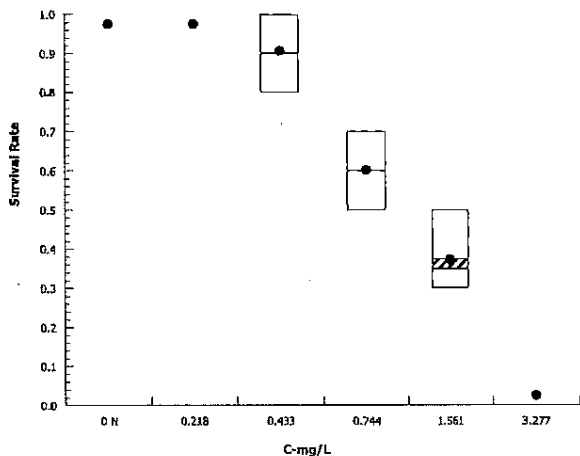
Angular (Corrected) Transformed Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1.412	1.412	1.412	1.412
0.218		1.412	1.412	1.412	1.412
0.433		1.107	1.107	1.412	1.412
0.744		0.9912	0.8861	0.8861	0.7854
1.561		0.7854	0.5796	0.6847	0.5796
3.277		0.1588	0.1588	0.1588	0.1588

Survival Rate Binomials

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
0.218		10/10	10/10	10/10	10/10
0.433		8/10	8/10	10/10	10/10
0.744		7/10	6/10	6/10	5/10
1.561		5/10	3/10	4/10	3/10
3.277		0/10	0/10	0/10	0/10

Graphics



CETIS Analytical Report

Report Date: 16 Apr-14 14:46 (p 1 of 2)
 Test Code: EOH032914 | 12-6769-6316

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 19-3437-9784 Endpoint: Survival Rate CETIS Version: CETISv1.8.7
 Analyzed: 16 Apr-14 14:45 Analysis: Linear Interpolation (ICPIN) Official Results: Yes

Sample ID: 03-6054-3333 Code: EOH032914 Client: Internal Lab
 Sample Date: 29 Mar-14 12:05 Material: Ammonia (Unionized) Project: REF TOX
 Receive Date: Source: Reference Toxicant
 Sample Age: NA Station: REF TOX

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Point Estimates

Level	mg/L	95% LCL	95% UCL
EC5	0.3255	0.2395	0.5638
EC10	0.433	0.261	0.5657
EC15	0.4848	0.3159	0.6009
EC20	0.5367	0.3708	0.6362
EC25	0.5885	0.4503	0.6714
EC40	0.744	0.6445	1.034
EC50	1.107	0.744	1.441

Survival Rate Summary

Calculated Variate(A/B)

C-mg/L	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	4	1	1	1	0	0	0.0%	0.0%	40	40
0.218		4	1	1	1	0	0	0.0%	0.0%	40	40
0.433		4	0.9	0.8	1	0.05774	0.1155	12.83%	10.0%	36	40
0.744		4	0.6	0.5	0.7	0.04082	0.08165	13.61%	40.0%	24	40
1.561		4	0.375	0.3	0.5	0.04787	0.09574	25.53%	62.5%	15	40
3.277		4	0	0	0	0	0		100.0%	0	40

Survival Rate Detail

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	1	1	1	1
0.218		1	1	1	1
0.433		0.8	0.8	1	1
0.744		0.7	0.6	0.6	0.5
1.561		0.5	0.3	0.4	0.3
3.277		0	0	0	0

Survival Rate Binomials

C-mg/L	Control Type	Rep 1	Rep 2	Rep 3	Rep 4
0	Negative Control	10/10	10/10	10/10	10/10
0.218		10/10	10/10	10/10	10/10
0.433		8/10	8/10	10/10	10/10
0.744		7/10	6/10	6/10	5/10
1.561		5/10	3/10	4/10	3/10
3.277		0/10	0/10	0/10	0/10

CETIS Analytical Report

Report Date: 16 Apr-14 14:46 (p 2 of 2)
Test Code: EOH032914 | 12-6769-6316

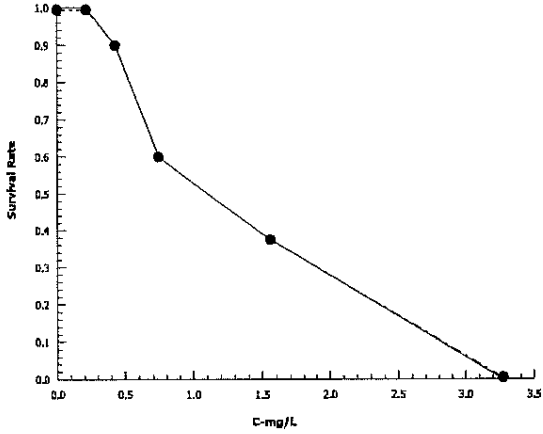
Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 19-3437-9784 Endpoint: Survival Rate
Analyzed: 16 Apr-14 14:45 Analysis: Linear Interpolation (ICPIN)

CETIS Version: CETISv1.8.7
Official Results: Yes

Graphics



CETIS Measurement Report

Report Date: 16 Apr-14 14:46 (p 1 of 2)
 Test Code: EOH032914 | 12-6769-6316

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 10-8891-5781	Test Type: Survival	Analyst:
Start Date: 29 Mar-14 12:05	Protocol: EPA/600/R-94/025 (1994)	Diluent: Laboratory Seawater
Ending Date: 02 Apr-14 12:05	Species: Eohaustorius estuarius	Brine: Not Applicable
Duration: 96h	Source: Northwestern Aquatic Science, OR	Age:
Sample ID: 03-6054-3333	Code: EOH032914	Client: Internal Lab
Sample Date: 29 Mar-14 12:05	Material: Ammonia (Unionized)	Project: REF TOX
Receive Date:	Source: Reference Toxicant	
Sample Age: NA	Station: REF TOX	

Dissolved Oxygen-mg/L

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	6.7	5.429	7.971	6.6	6.8	0.09999	0.1414	2.11%	0
0.218		2	6.35	3.173	9.527	6.1	6.6	0.25	0.3536	5.57%	0
0.433		2	6.3	1.218	11.38	5.9	6.7	0.4	0.5657	8.98%	0
0.744		2	6.3	-0.0531	12.65	5.8	6.8	0.5	0.7071	11.22%	0
1.561		2	6.3	-1.324	13.92	5.7	6.9	0.6	0.8485	13.47%	0
3.277		2	6.2	-0.1531	12.55	5.7	6.7	0.5	0.7071	11.4%	0
Overall		12	6.358			5.7	6.9				0 (0%)

Total Ammonia (N)-mg/L

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	0	0	0	0	0	0	0		0
Overall		2	0			0	0				0 (0%)

pH-Units

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.218		2	7.9	7.884	7.916	7.9	7.9	0	0	0.0%	0
0.433		2	7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
0.744		2	7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
1.561		2	7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
3.277		2	7.85	7.215	8.485	7.8	7.9	0.05	0.07071	0.9%	0
Overall		12	7.867			7.8	7.9				0 (0%)

Salinity-ppt

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	20	20	20	20	20	0	0	0.0%	0
0.218		2	20	20	20	20	20	0	0	0.0%	0
0.433		2	20	20	20	20	20	0	0	0.0%	0
0.744		2	20	20	20	20	20	0	0	0.0%	0
1.561		2	20	20	20	20	20	0	0	0.0%	0
3.277		2	20	20	20	20	20	0	0	0.0%	0
Overall		12	20			20	20				0 (0%)

Temperature-°C

C-mg/L	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	2	14.8	14.78	14.82	14.8	14.8	0	0	0.0%	0
0.218		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.433		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
0.744		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
1.561		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
3.277		2	14.75	14.11	15.39	14.7	14.8	0.05002	0.07075	0.48%	0
Overall		12	14.76			14.7	14.8				0 (0%)

CETIS Measurement Report

Report Date: 16 Apr-14 14:46 (p 2 of 2)

Test Code: EOH032914 | 12-6769-6316

Reference Toxicant 96-h Acute Survival Test

Aquatic Bioassay & Consulting Labs, Inc.

Dissolved Oxygen-mg/L

C-mg/L	Control Type	1	2
0	Negative Contr	6.8	6.6
0.218		6.6	6.1
0.433		6.7	5.9
0.744		6.8	5.8
1.561		6.9	5.7
3.277		6.7	5.7

Total Ammonia (N)-mg/L

C-mg/L	Control Type	1	2
0	Negative Contr	0	0
0.218			
0.433			
0.744			
1.561			
3.277			

pH-Units

C-mg/L	Control Type	1	2
0	Negative Contr	7.9	7.9
0.218		7.9	7.9
0.433		7.9	7.8
0.744		7.9	7.8
1.561		7.9	7.8
3.277		7.9	7.8


Salinity-ppt

C-mg/L	Control Type	1	2
0	Negative Contr	20	20
0.218		20	20
0.433		20	20
0.744		20	20
1.561		20	20
3.277		20	20

Temperature-°C

C-mg/L	Control Type	1	2
0	Negative Contr	14.8	14.8
0.218		14.8	14.7
0.433		14.8	14.7
0.744		14.8	14.7
1.561		14.8	14.7
3.277		14.8	14.7

CHAIN OF CUSTODY FORM

Client Name/Address: Haley & Aldrich, Inc. 9040 Friars Road Suite 220 San Diego, CA 92108-5860		Project: Boeing-SSFL NPDES Annual Sediment Arroyo Simi-Frontier Park		ANALYSIS REQUIRED Field readings: Temp = 13.80 pH = 6.10 DO = 8.17 Conductivity = 2.20 Water Velocity (ft/sec) = 0.0 Time of readings = 0801 Turbidity: 7.5 NTU Comments Keep sample in cooler in the dark & delivered to ABC Labs			
Test America Contact: Debby Wilson Project Manager: Nancy Gardiner Sampler: Daniel Smith		Phone Number: 619.285.7132, 858.337.4061(cell) Field Contact, Jeff Bannon: 818.350.7340, 818.414.5608(cell)		Chlordane, Dieldrin, Toxaphene (8081), 4,4-DDD, 4,4-DDE, 4,4-DDT PCBs (8082) Total Organic Carbon Particle Size Distribution % Moisture Total Ammonia (Mytilus edulis or Crassostrea gigas) 48-hour Bivalve Embryo Toxicity Chronic 10-day eohausorius estuanus Toxicity X X			
Sample Description	Sample Matrix	Container Type	# of Cont.	Sample ID	Sampling Date/Time	Preservative	Bottle #
Arroyo Simi	S	1L wide mouth Plastic	4	ArroyoSimi-	3/11/14 6:16	4C in the Dark	1A, 1B, 1C, 1D
Arroyo Simi	S	9 oz Jar	1	ArroyoSimi-	3/19/14	4 deg C	2A
Arroyo Simi	S	9 oz Jar	1	ArroyoSimi-	3/19/14	4 deg C	3A
Arroyo Simi	S	9 oz Jar	1	ArroyoSimi-	3/19/14	4 deg C	4A
Arroyo Simi	S	9 oz Jar	1	ArroyoSimi-	3/19/14	4 deg C	5A
 440-73688 Chain of Custody							
Relinquished By	Date/Time	Received By	Date/Time	Turn around Time: (check) 24 Hours _____ 5 Days _____ 48 Hours _____ 10 Days _____ 72 Hours _____ Normal _____ Sample Integrity: (check) Intact _____ On Ice _____ Data Requirements: (check) No Level IV _____ All Level IV _____ NPDES Level IV _____ On Ice _____			
Daniel Smith	3/14/14 10:15	Shobica NASTI	3/19/14 10:25				
Shobica NASTI	3/14/14 11:20	Daniel Smith	3/19/14 11:20				



APPENDIX F

First Quarter 2014 Reasonable Potential Analysis (RPA) Summary Tables

**FIRST QUARTER 2014
REASONABLE POTENTIAL ANALYSIS SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

Notes:

1. The following Reasonable Potential Analysis (RPA) provides the analytical results as performed by the procedures outlined in *Reasonable Potential Analysis Methodology Technical Memo* (MWH and Flow Science, 2006).
2. The monitoring data set utilized to conduct the RPA consists of all applicable and relevant data from the present reporting quarter.
3. As directed by the CTR and the Regional Water Control Board 2,3,7,8-TCDD (Dioxin) values are to be expressed in NPDES permitting and this RPA as TCDD Total Equivalence units (TEQs). A TCDD TEQ is determined by multiplying each of the seventeen dioxin and furan congeners by their respective toxicity equivalency factor (TEF) and bioaccumulation equivalency factor (BEF), and summing the results of those products. For the purposes of this RPA, the resulting TCDD TEQ does not include those congener concentrations that are reported as DNQ, as specified on Page 37, of the NPDES Permit Effective June 3, 2010.
4. In calculating the average, standard deviation, coefficient of variation, and projected maximum effluent concentration (99/99), one-half of the MDL was used for concentration results reported as ND. Data reported with qualifiers were not included in this RPA as Boeing believes qualified data are not "appropriate, valid, relevant, (nor) representative"¹ of storm water constituents and are therefore not utilized in its RPA.
5. All of the following abbreviations and/or notes may not occur on every table.

Definition of Acronyms, Abbreviations, and Terminology Used

>=	Greater than or equal to
*	Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. The equations are provided in the CTR, (US EPA, 2000). Values displayed correspond to a total hardness of 100 mg/l.
µg/L	Concentration units, micrograms per liter
All Data Qualified	All available monitoring data are qualified and no statistical analysis is performed.
Annually	The 2010 NPDES Permit requires annual monitoring.
Available Data < DL	All available monitoring data that are not qualified are below detection limits.
B	Background
C	Concentration
CCC	Criterion Continuous Concentration
CMC	Criterion Maximum Concentration
CTR	California Toxics Rule
CV	Coefficient of Variation
DL	Detection Limit
EPA TSD	EPA's Technical Support Document for Water Quality Based Toxics Control, (see references).
Fibers/L	Units for asbestos concentration, fibers per liter

Definition of Acronyms, Abbreviations, and Terminology Used (Continued)

¹ SIP, p. 5.

**FIRST QUARTER 2014
REASONABLE POTENTIAL ANALYSIS SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

HH O	Human Health criteria for consumption of Organisms only
HH W&O	Human Health criteria for consumption of Water and Organisms
MEC	Maximum Observed Effluent Concentration
Min	Minimum
NA	Not Applicable
Narrative	Water quality criteria are expressed as a narrative objective rather than a numeric objective, and therefore are not part of the statistical RPA calculations.
None	No available CTR or Basin Plan criteria.
pH Dependent	CTR Criteria are based on pH.
Once Per Discharge	The 2010 NPDES Permit requires monitoring once per discharge event.
Qualified Data	Data qualifier definitions are: (a) J- The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL), (b) U/UJ- The analyte was not detected in the sample at the detection limit /estimated detection limit (EDL), (c) B - Analyte found in sample and associated blank, and (d) DNQ- Detected Not Quantified.
Reserved	EPA has reserved the CTR criteria.
RPA	Reasonable Potential Analysis
SIP	The State Water Resources Control Board "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California," (see references).
Tot	Total

Priority Pollutant RPA Column Explanation

CTR	Provides CTR constituent reference number.
Constituent	Provides CTR constituent common name.
Units	Provides the data set's concentration units as referenced by 2010 NPDES Permit.
MEC	Provides the outfall monitoring group's maximum value from the applicable data set.
CV	Equal to the standard deviation divided by the average of the applicable data set. If the number of samples is less than 10, the CV is assumed to be 0.6.
<i>Step 1 identifies all applicable water quality criteria.</i>	
CTR Criteria	Concentration criteria as listed in the CTR.
CMC = Acute	The Freshwater CMC is listed as the acute concentration criterion.
CCC = Chronic	The Freshwater CCC is listed as the chronic concentration criterion.
HH W&O (Not App)	The HH W&O is deemed not applicable based on past Regional Board RPAs.
HH O = HH	The HH O is listed as the CTR human health concentration criterion.
Basin Plan Criteria	Applicable Basin Plan Criteria are listed for the Los Angeles River and/or Calleguas Creek watersheds.
C = Lowest Criteria	The comparison concentration (C) is equal to the lowest criterion for a constituent based on the CMC, CCC, HH O, and Basin Plan Criteria listed.
<i>Step 2 defines the applicable data set.</i>	
Is Effluent Data Available	If all data is qualified, then NO. If not, then YES.

Priority Pollutant RPA Column Explanation (Continued)

<i>Step 3 determines the maximum observed effluent concentration.</i>	
---	--

**FIRST QUARTER 2014
REASONABLE POTENTIAL ANALYSIS SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

Was Constituent Detected in Effluent Data	If the constituent was detected, then YES. If all monitoring data are non-detect or qualified then NO.
Are all DL >C	If constituent was detected in effluent data then not applicable (NA). If constituent was not detected and all analysis detection limits are greater than the comparison concentration, then YES, if not then NO.
If DL > C, MEC = Min (DL)	If the previous cell answer was yes, then the MEC is equal to the minimum detection limit. If not, then NA.
<i>Step 4 compares the MEC to the lowest applicable water quality criteria.</i>	
MEC >= C	If the MEC is greater than or equal to the comparison concentration then YES, if not then NO.

Note: Steps 5 and 6 of the Priority Pollutant RPA do not apply to Boeing SSFL because the Regional Board gives no consideration for receiving water background constituent concentrations. Furthermore, Boeing SSFL defers the application of best professional judgment in Step 7 and final determination of reasonable potential in Step 8 to the Regional Board Staff.

Non-priority Pollutant RPA Column Explanation

Constituent	Provides the Non Priority Pollutant constituent common name
Monitoring	Provides the 2010 NPDES Permit directed monitoring frequency
Units	Provides the data set's concentration units as referenced by 2009 NPDES Permit
Number of Samples	Provides the number of available samples that are not qualified
MEC	Provides the outfall monitoring group's maximum value from the applicable data set
CV	Equal to the standard deviation divided by the average of the applicable data set. If the number of samples is less than 10, the CV is assumed to be 0.6.
Multiplier	Utilizes the EPA's TSD calculation to determine multiplier for which the maximum effluent concentration is calculated. (MWH and Flow Science, 2006, or EPA TSD, 1991)
Projected Maximum Effluent Concentration	Utilizes the product of the multiplier and the MEC as an estimate for the projected maximum effluent concentration.
Dilution Ratio	The Regional Board allocates no dilution ratio to Boeing SSFL.
Background Concentration	The Regional Board allocates no background concentration to Boeing SSFL.
Projected Maximum Receiving Water Concentration	The Regional Board estimates the projected maximum receiving water concentration as equal to the projected maximum effluent concentration.
Step 1, Determine Water Quality Objectives	The water quality objective is based on appropriate Basin Plan criteria as noted in the Reasonable Potential Analysis Methodology Technical Memo.
BU – Beneficial Use Protection, NC – Human Non-carcinogen, AP- Aquatic Life Protection, TMDL – Total Maximum Daily Load	This is the Regional Board's Basis for determining if reasonable potential should be evaluated for a non-priority pollutant.

Note: Boeing SSFL has completed appropriate statistical calculations, but defers the application of best professional judgment and the final determination of reasonable potential to the Regional Board Staff.

**FIRST QUARTER 2014
REASONABLE POTENTIAL ANALYSIS SUMMARY NOTES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

References:

1. Los Angeles Regional Water Quality Control Board, "Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, (Basin Plan)." June 13, 1994.
2. MWH and Flow Science, "Reasonable Potential Analysis Methodology Technical Memo- Version 1, Final, Santa Susan Field Laboratory, Ventura County, California." April 28, 2006.
3. State Water Resources Control Board, "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, (SIP)" Resolution No. 2005-0019, February 24, 2005.
4. US EPA, *40CFR part 131, Water Quality Standards; Establishment of numeric Criteria for Priority Toxic Pollutants for the State of California*,(CTR) Federal Registry, 2011, pp. 496 - 507
5. US EPA, "Technical Support Document for Water Quality-based Toxics Control." EPA/505/2-90-001, PB-91-127415, March 1991.

**TABLE F-1
REASONABLE POTENTIAL ANALYSIS - PRIORITY POLLUTANTS (OUTFALLS 003-007, 009 AND 010)**

**FIRST QUARTER 2014 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

Outfall	CTR	Constituent	Units	MEC	CV	Step 1: Water Quality Criteria, Determine C				Basin Plan Title 22 GWR	C = Lowest Criteria	Step 2 Is Effluent Data Available	Step 3		Step 4 MEC >= C	
						CTR CRITERIA							Was Constituent Detected in Effluent Data	Are all Detection Limits > C		If DL > C, MEC = Min (DL)
						Freshwater	Human Health									
						CMC = Acute	CCC = Chronic	HH W&O (Not App)	HH O = HH							
3_7,9-10	001	Antimony	ug/L	All Data Qualified	0.6	NONE	NONE	14	4,300	6	6	No	No	No	NA	No
3_7,9-10	002	Arsenic	ug/L	All Data Qualified	0.6	340	150	NONE	NONE	50	50	No	No	No	NA	No
3_7,9-10	003	Beryllium	ug/L	All Data Qualified	0.6	NONE	NONE	Narrative	Narrative	4	4	No	No	No	NA	No
3_7,9-10	004	Cadmium	ug/L	All Data Qualified	0.6	4.3	2.2	Narrative	Narrative	5	2.2	No	No	No	NA	No
3_7,9-10	005a	Chromium	ug/L	9.7	0.6	550	180	Narrative	Narrative	50	50	Yes	Yes	NA	NA	No
3_7,9-10	005b	Chromium VI	ug/L	All Data Qualified	0.6	16	11	Narrative	Narrative	NONE	11	No	No	No	NA	No
3_7,9-10	006	Copper	ug/L	12	0.6	13	9	1,300	NONE	NONE	9	Yes	Yes	NA	NA	Yes
3_7,9-10	007	Lead	ug/L	9.6	0.6	65	2.5	Narrative	Narrative	NONE	2.5	Yes	Yes	NA	NA	Yes
3_7,9-10	008	Mercury	ug/L	All Data Qualified	0.6	Reserved	Reserved	0.05	0.051	2	0.051	No	No	Yes	0.051	No
3_7,9-10	009	Nickel	ug/L	All Data Qualified	0.6	470	52	610	4,600	100	52	No	No	No	NA	No
3_7,9-10	010	Selenium	ug/L	All Data Qualified	0.6	Reserved	5	Narrative	Narrative	50	5	No	No	No	NA	No
3_7,9-10	011	Silver	ug/L	All Data Qualified	0.6	3.4	NONE	NONE	NONE	NONE	3.4	No	No	No	NA	No
3_7,9-10	012	Thallium	ug/L	All Data Qualified	0.6	NONE	NONE	1.7	6.3	2	2	No	No	No	NA	No
3_7,9-10	013	Zinc	ug/L	62	0.6	120	120	NONE	NONE	NONE	120	Yes	Yes	NA	NA	No
3_7,9-10	014	Total Cyanide	ug/L	Available Data <DL	0.6	22	5.2	700	220,000	200	5.2	Yes	No	No	NA	No
3_7,9-10	015	Asbestos	Fibers/L	Available Data <DL	0.6	NONE	NONE	7,000,000	NONE	7,000,000	7,000,000	Yes	No	No	NA	No
3_7,9-10	016	TCDD TEQ_NoDNQ	ug/L	1.32E-07	0.6	NONE	NONE	1.30E-08	1.40E-08	3.00E-08	1.40E-08	Yes	Yes	NA	NA	Yes
3_7,9-10	017	Acrolein	ug/L	Available Data <DL	0.6	NONE	NONE	320	780	NONE	780	Yes	No	No	NA	No
3_7,9-10	018	Acrylonitrile	ug/L	Available Data <DL	0.6	NONE	NONE	0.059	0.66	NONE	0.66	Yes	No	Yes	0.66	No
3_7,9-10	019	Benzene	ug/L	Available Data <DL	0.6	NONE	NONE	1.2	71	1	1	Yes	No	No	NA	No
3_7,9-10	020	Bromoform	ug/L	Available Data <DL	0.6	NONE	NONE	4.3	360	NONE	360	Yes	No	No	NA	No
3_7,9-10	021	Carbon Tetrachloride	ug/L	Available Data <DL	0.6	NONE	NONE	0.25	4.4	0.5	0.5	Yes	No	No	NA	No
3_7,9-10	022	Chlorobenzene	ug/L	Available Data <DL	0.6	NONE	NONE	680	21,000	70	70	Yes	No	No	NA	No
3_7,9-10	023	Dibromochloromethane	ug/L	Available Data <DL	0.6	NONE	NONE	0.401	34	NONE	34	Yes	No	No	NA	No
3_7,9-10	024	Chloroethane	ug/L	Available Data <DL	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
3_7,9-10	025	2-Chloroethylvinylether	ug/L	Available Data <DL	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
3_7,9-10	026	Chloroform	ug/L	Available Data <DL	0.6	NONE	NONE	Reserved	Reserved	NONE	NONE	Yes	No	No	NA	No
3_7,9-10	027	Bromodichloromethane	ug/L	Available Data <DL	0.6	NONE	NONE	0.56	46	NONE	46	Yes	No	No	NA	No
3_7,9-10	028	1,1-Dichloroethane	ug/L	Available Data <DL	0.6	NONE	NONE	NONE	NONE	5	5	Yes	No	No	NA	No

**TABLE F-1
REASONABLE POTENTIAL ANALYSIS - PRIORITY POLLUTANTS (OUTFALLS 003-007, 009 AND 010)**

**FIRST QUARTER 2014 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

Outfall	CTR	Constituent	Units	MEC	CV	Step 1: Water Quality Criteria, Determine C				Basin Plan Title 22 GWR	C = Lowest Criteria	Step 2 Is Effluent Data Available	Step 3			Step 4 MEC >= C
						CTR CRITERIA							Was Constituent Detected in Effluent Data	Are all Detection Limits > C	If DL > C, MEC = Min (DL)	
						Freshwater	Human Health									
						CMC = Acute	CCC = Chronic	HH W&O (Not App)	HH O = HH							
3_7,9-10	029	1,2-Dichloroethane	ug/L	Available Data <DL	0.6	NONE	NONE	0.38	99	0.5	0.5	Yes	No	No	NA	No
3_7,9-10	030	1,1-Dichloroethene	ug/L	Available Data <DL	0.6	NONE	NONE	0.057	3.2	6	3.2	Yes	No	No	NA	No
3_7,9-10	031	1,2-Dichloropropane	ug/L	Available Data <DL	0.6	NONE	NONE	0.52	39	5	5	Yes	No	No	NA	No
3_7,9-10	032	cis-1,3-Dichloropropene	ug/L	Available Data <DL	0.6	NONE	NONE	10	1,700	0.5	0.5	Yes	No	No	NA	No
3_7,9-10	032a	trans-1,3-Dichloropropene	ug/L	Available Data <DL	0.6	NONE	NONE	10	1,700	0.5	0.5	Yes	No	No	NA	No
3_7,9-10	033	Ethylbenzene	ug/L	Available Data <DL	0.6	NONE	NONE	3,100	29,000	700	700	Yes	No	No	NA	No
3_7,9-10	034	Bromomethane	ug/L	Available Data <DL	0.6	NONE	NONE	48	4,000	NONE	4,000	Yes	No	No	NA	No
3_7,9-10	035	Chloromethane	ug/L	Available Data <DL	0.6	NONE	NONE	Narrative	Narrative	NONE	NONE	Yes	No	No	NA	No
3_7,9-10	036	Methylene chloride	ug/L	Available Data <DL	0.6	NONE	NONE	4.7	1,600	NONE	1,600	Yes	No	No	NA	No
3_7,9-10	037	1,1,2,2-Tetrachloroethane	ug/L	Available Data <DL	0.6	NONE	NONE	0.17	11	1	1	Yes	No	No	NA	No
3_7,9-10	038	Tetrachloroethene	ug/L	Available Data <DL	0.6	NONE	NONE	0.8	8.85	5	5	Yes	No	No	NA	No
3_7,9-10	039	Toluene	ug/L	Available Data <DL	0.6	NONE	NONE	6,800	200,000	150	150	Yes	No	No	NA	No
3_7,9-10	040	trans-1,2-Dichloroethene	ug/L	Available Data <DL	0.6	NONE	NONE	700	140,000	10	10	Yes	No	No	NA	No
3_7,9-10	041	1,1,1-Trichloroethane	ug/L	Available Data <DL	0.6	NONE	NONE	Narrative	Narrative	200	200	Yes	No	No	NA	No
3_7,9-10	042	1,1,2-trichloroethane	ug/L	Available Data <DL	0.6	NONE	NONE	0.6	42	5	5	Yes	No	No	NA	No
3_7,9-10	043	Trichloroethene	ug/L	Available Data <DL	0.6	NONE	NONE	2.7	81	5	5	Yes	No	No	NA	No
3_7,9-10	044	Vinyl chloride	ug/L	Available Data <DL	0.6	NONE	NONE	2	525	0.5	0.5	Yes	No	No	NA	No
3_7,9-10	045	2-chlorophenol	ug/L	All Data Qualified	0.6	NONE	NONE	120	400	NONE	400	No	No	No	NA	No
3_7,9-10	046	2,4-Dichlorophenol	ug/L	All Data Qualified	0.6	NONE	NONE	93	790	NONE	790	No	No	No	NA	No
3_7,9-10	047	2,4-dimethylphenol	ug/L	All Data Qualified	0.6	NONE	NONE	540	2,300	NONE	2,300	No	No	No	NA	No
3_7,9-10	048	2-Methyl-4,6-dinitrophenol	ug/L	All Data Qualified	0.6	NONE	NONE	13.4	765	NONE	765	No	No	No	NA	No
3_7,9-10	049	2,4-dinitrophenol	ug/L	All Data Qualified	0.6	NONE	NONE	70	14,000	NONE	14,000	No	No	No	NA	No
3_7,9-10	050	2-nitrophenol	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	051	4-nitrophenol	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	052	4-Chloro-3-methylphenol	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	053	Pentachlorophenol	ug/L	All Data Qualified	0.6	pH dependent	pH dependent	0.28	8.2	1	1	No	No	No	NA	No

**TABLE F-1
REASONABLE POTENTIAL ANALYSIS - PRIORITY POLLUTANTS (OUTFALLS 003-007, 009 AND 010)**

**FIRST QUARTER 2014 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

Outfall	CTR	Constituent	Units	MEC	CV	Step 1: Water Quality Criteria, Determine C				Basin Plan Title 22 GWR	C = Lowest Criteria	Step 2 Is Effluent Data Available	Step 3 Was Constituent Detected in Effluent Data	Step 3 Are all Detection Limits > C	Step 3 If DL > C, MEC = Min (DL)	Step 4 MEC >= C
						CTR CRITERIA										
						Freshwater	Human Health									
CMC = Acute	CCC = Chronic	HH W&O (Not App)	HH O = HH													
3_7,9-10	054	Phenol	ug/L	5.8	0.6	NONE	NONE	21,000	4,600,000	NONE	4,600,000	Yes	Yes	NA	NA	No
3_7,9-10	055	2,4,6-Trichlorophenol	ug/L	All Data Qualified	0.6	NONE	NONE	2.1	6.5	NONE	6.5	No	No	No	NA	No
3_7,9-10	056	Acenaphthene	ug/L	All Data Qualified	0.6	NONE	NONE	1,200	2,700	NONE	2,700	No	No	No	NA	No
3_7,9-10	057	Acenaphthylene	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	058	Anthracene	ug/L	All Data Qualified	0.6	NONE	NONE	9,600	110,000	NONE	110,000	No	No	No	NA	No
3_7,9-10	059	Benzdine	ug/L	All Data Qualified	0.6	NONE	NONE	0.00012	0.00054	NONE	0.00054	No	No	No	NA	No
3_7,9-10	060	Benzo(a)Anthracene	ug/L	All Data Qualified	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	No	No	No	NA	No
3_7,9-10	061	Benzo(a)Pyrene	ug/L	All Data Qualified	0.6	NONE	NONE	0.0044	0.049	0.2	0.049	No	No	No	NA	No
3_7,9-10	062	Benzo(b)Fluoranthene	ug/L	All Data Qualified	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	No	No	No	NA	No
3_7,9-10	063	Benzo(g,h,i)Perylene	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	064	Benzo(k)Fluoranthene	ug/L	All Data Qualified	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	No	No	No	NA	No
3_7,9-10	065	Bis(2-Chloroethoxy) methane	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	066	bis (2-Chloroethyl) ether	ug/L	All Data Qualified	0.6	NONE	NONE	0.031	1.4	NONE	1.4	No	No	No	NA	No
3_7,9-10	067	Bis(2-Chloroisopropyl) Ether	ug/L	All Data Qualified	0.6	NONE	NONE	1,400	170,000	NONE	170,000	No	No	No	NA	No
3_7,9-10	068	bis (2-ethylhexyl) Phthalate	ug/L	6.71	0.6	NONE	NONE	1.8	5.9	4	4	Yes	Yes	NA	NA	Yes
3_7,9-10	069	4-Bromophenylphenylether	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	070	Butylbenzylphthalate	ug/L	All Data Qualified	0.6	NONE	NONE	3,000	5,200	NONE	5,200	No	No	No	NA	No
3_7,9-10	071	2-Chloronaphthalene	ug/L	All Data Qualified	0.6	NONE	NONE	1,700	4,300	NONE	4,300	No	No	No	NA	No
3_7,9-10	072	4-Chlorophenylphenylether	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	073	Chrysene	ug/L	All Data Qualified	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	No	No	No	NA	No
3_7,9-10	074	Dibenzo(a,h)Anthracene	ug/L	All Data Qualified	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	No	No	No	NA	No
3_7,9-10	075	1,2-Dichlorobenzene	ug/L	Available Data <DL	0.6	NONE	NONE	2,700	17,000	600	600	Yes	No	No	NA	No
3_7,9-10	076	1,3-Dichlorobenzene	ug/L	Available Data <DL	0.6	NONE	NONE	400	2,600	NONE	2,600	Yes	No	No	NA	No
3_7,9-10	077	1,4-Dichlorobenzene	ug/L	Available Data <DL	0.6	NONE	NONE	400	2,600	5	5	Yes	No	No	NA	No
3_7,9-10	078	3,3'-Dichlorobenzidine	ug/L	All Data Qualified	0.6	NONE	NONE	0.04	0.077	NONE	0.077	No	No	No	NA	No
3_7,9-10	079	Diethylphthalate	ug/L	0.887	0.6	NONE	NONE	23,000	120,000	NONE	120,000	Yes	Yes	NA	NA	No
3_7,9-10	080	Dimethylphthalate	ug/L	0.501	0.6	NONE	NONE	313,000	2,900,000	NONE	2,900,000	Yes	Yes	NA	NA	No
3_7,9-10	081	Di-n-butylphthalate	ug/L	All Data Qualified	0.6	NONE	NONE	2,700	12,000	NONE	12,000	No	No	No	NA	No
3_7,9-10	082	2,4-Dinitrotoluene	ug/L	All Data Qualified	0.6	NONE	NONE	0.11	9.1	NONE	9.1	No	No	No	NA	No
3_7,9-10	083	2,6-Dinitrotoluene	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	084	Di-n-octylphthalate	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	085	1,2-Diphenylhydrazine	ug/L	All Data Qualified	0.6	NONE	NONE	0.04	0.54	NONE	0.54	No	No	No	NA	No
3_7,9-10	086	Fluoranthene	ug/L	All Data Qualified	0.6	NONE	NONE	300	370	NONE	370	No	No	No	NA	No
3_7,9-10	087	Fluorene	ug/L	All Data Qualified	0.6	NONE	NONE	1,300	14,000	NONE	14,000	No	No	No	NA	No
3_7,9-10	088	Hexachlorobenzene	ug/L	All Data Qualified	0.6	NONE	NONE	0.00075	0.00077	1	0.00077	No	No	No	NA	No
3_7,9-10	089	Hexachlorobutadiene	ug/L	All Data Qualified	0.6	NONE	NONE	0.44	50	NONE	50	No	No	No	NA	No

**TABLE F-1
REASONABLE POTENTIAL ANALYSIS - PRIORITY POLLUTANTS (OUTFALLS 003-007, 009 AND 010)**

**FIRST QUARTER 2014 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

Outfall	CTR	Constituent	Units	MEC	CV	Step 1: Water Quality Criteria, Determine C				Basin Plan Title 22 GWR	C = Lowest Criteria	Step 2 Is Effluent Data Available	Step 3			Step 4 MEC >= C
						CTR CRITERIA							Was Constituent Detected in Effluent Data	Are all Detection Limits > C	If DL > C, MEC = Min (DL)	
						Freshwater	Human Health									
						CMC = Acute	CCC = Chronic	HH W&O (Not App)	HH O = HH							
3_7,9-10	090	Hexachlorocyclopentadiene	ug/L	All Data Qualified	0.6	NONE	NONE	240	17,000	50	50	No	No	No	NA	No
3_7,9-10	091	Hexachloroethane	ug/L	All Data Qualified	0.6	NONE	NONE	1.9	8.9	NONE	8.9	No	No	No	NA	No
3_7,9-10	092	Indeno(1,2,3-cd)Pyrene	ug/L	All Data Qualified	0.6	NONE	NONE	0.0044	0.049	NONE	0.049	No	No	No	NA	No
3_7,9-10	093	Isophorone	ug/L	All Data Qualified	0.6	NONE	NONE	8.4	600	NONE	600	No	No	No	NA	No
3_7,9-10	094	Naphthalene	ug/L	Available Data <DL	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
3_7,9-10	095	Nitrobenzene	ug/L	All Data Qualified	0.6	NONE	NONE	17	1,900	NONE	1,900	No	No	No	NA	No
3_7,9-10	096	N-Nitrosodimethylamine	ug/L	All Data Qualified	0.6	NONE	NONE	0.00069	8.1	NONE	8.1	No	No	No	NA	No
3_7,9-10	097	n-Nitroso-di-n-propylamine	ug/L	All Data Qualified	0.6	NONE	NONE	0.005	1.4	NONE	1.4	No	No	No	NA	No
3_7,9-10	098	N-Nitrosodiphenylamine	ug/L	All Data Qualified	0.6	NONE	NONE	5	16	NONE	16	No	No	No	NA	No
3_7,9-10	099	Phenanthrene	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	NONE	NONE	No	No	No	NA	No
3_7,9-10	100	Pyrene	ug/L	All Data Qualified	0.6	NONE	NONE	960	11,000	NONE	11,000	No	No	No	NA	No
3_7,9-10	101	1,2,4-Trichlorobenzene	ug/L	All Data Qualified	0.6	NONE	NONE	NONE	NONE	70	70	No	No	No	NA	No
3_7,9-10	102	Aldrin	ug/L	Available Data <DL	0.6	3	NONE	0.00013	0.00014	NONE	0.00014	Yes	No	Yes	0.00014	No
3_7,9-10	103	alpha-BHC	ug/L	Available Data <DL	0.6	NONE	NONE	0.0039	0.013	NONE	0.013	Yes	No	No	NA	No
3_7,9-10	104	beta-BHC	ug/L	Available Data <DL	0.6	NONE	NONE	0.014	0.046	NONE	0.046	Yes	No	No	NA	No
3_7,9-10	105	Lindane (gamma-BHC)	ug/L	Available Data <DL	0.6	0.95	NONE	0.019	0.063	0.2	0.063	Yes	No	No	NA	No
3_7,9-10	106	delta-BHC	ug/L	Available Data <DL	0.6	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
3_7,9-10	107	Chlordane	ug/L	Available Data <DL	0.6	2.4	0.0043	0.00057	0.00059	0.1	0.00059	Yes	No	Yes	0.00059	No
3_7,9-10	108	4,4'-DDT	ug/L	Available Data <DL	0.6	1.1	0.001	0.00059	0.00059	NONE	0.00059	Yes	No	Yes	0.00059	No
3_7,9-10	109	4,4'-DDE	ug/L	Available Data <DL	0.6	NONE	NONE	0.00059	0.00059	NONE	0.00059	Yes	No	Yes	0.00059	No
3_7,9-10	110	4,4'-DDD	ug/L	Available Data <DL	0.6	NONE	NONE	0.00083	0.00084	NONE	0.00084	Yes	No	Yes	0.00084	No
3_7,9-10	111	Dieldrin	ug/L	Available Data <DL	0.6	0.24	0.056	0.00014	0.00014	NONE	0.00014	Yes	No	Yes	0.00014	No
3_7,9-10	112	Endosulfan I	ug/L	Available Data <DL	0.6	0.22	0.056	110	240	NONE	0.056	Yes	No	No	NA	No
3_7,9-10	113	Endosulfan II	ug/L	Available Data <DL	0.6	0.22	0.056	110	240	NONE	0.056	Yes	No	No	NA	No
3_7,9-10	114	Endosulfan Sulfate	ug/L	Available Data <DL	0.6	NONE	NONE	110	240	NONE	240	Yes	No	No	NA	No
3_7,9-10	115	Endrin	ug/L	Available Data <DL	0.6	0.086	0.036	0.76	0.81	2	0.036	Yes	No	No	NA	No

**TABLE F-1
REASONABLE POTENTIAL ANALYSIS - PRIORITY POLLUTANTS (OUTFALLS 003-007, 009 AND 010)**

**FIRST QUARTER 2014 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

Outfall	CTR	Constituent	Units	MEC	CV	Step 1: Water Quality Criteria, Determine C				Basin Plan Title 22 GWR	C = Lowest Criteria	Step 2 Is Effluent Data Available	Step 3			Step 4 MEC >= C
						CTR CRITERIA							Was Constituent Detected in Effluent Data	Are all Detection Limits > C	If DL > C, MEC = Min (DL)	
						Freshwater	Human Health									
						CMC = Acute	CCC = Chronic	HH W&O (Not App)	HH O = HH							
3_7,9-10	116	Endrin Aldehyde	ug/L	Available Data <DL	0.6	NONE	NONE	0.76	0.81	NONE	0.81	Yes	No	No	NA	No
3_7,9-10	117	Heptachlor	ug/L	Available Data <DL	0.6	0.52	0.0038	0.00021	0.00021	0.01	0.00021	Yes	No	Yes	0.00021	No
3_7,9-10	118	Heptachlor Epoxide	ug/L	Available Data <DL	0.6	0.52	0.0038	0.0001	0.00011	0.01	0.00011	Yes	No	Yes	0.00011	No
3_7,9-10	119	Aroclor-1016	ug/L	Available Data <DL	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No
3_7,9-10	120	Aroclor-1221	ug/L	Available Data <DL	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No
3_7,9-10	121	Aroclor-1232	ug/L	Available Data <DL	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No
3_7,9-10	122	Aroclor-1242	ug/L	Available Data <DL	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No
3_7,9-10	123	Aroclor-1248	ug/L	Available Data <DL	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No
3_7,9-10	124	Aroclor-1254	ug/L	Available Data <DL	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No
3_7,9-10	125	Aroclor-1260	ug/L	Available Data <DL	0.6	NONE	0.014	0.00017	0.00017	0.5	0.00017	Yes	No	Yes	0.00017	No
3_7,9-10	126	Toxaphene	ug/L	Available Data <DL	0.6	0.73	0.0002	0.00073	0.00075	3	0.0002	Yes	No	Yes	0.0002	No
3_7,9-10	127	E. Coli	MPN/100 ml	1600	0.6	NA	NA	NA	NA	235	235	Yes	Yes	NA	NA	Yes

**TABLE F-2
REASONABLE POTENTIAL ANALYSIS - NONPRIORITY POLLUTANTS (OUTFALLS 003-007,009 AND 010)**

**FIRST QUARTER 2014 REPORTING SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

Outfall	Constituent	Monitoring	Units	Number of Samples	MEC	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Step 1, Determine Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection
3_7,9-10	Boron	Annual	mg/L	0	0.097	0.6	All Data Qualified	All Data Qualified	0	0	NA	1	BU
3_7,9-10	Chloride	Discharge	mg/L	1	6.3	0.6	13.2	83.1	0	0	83.1	150	BU
3_7,9-10	Fluoride	Annual	mg/L	1	0.16	0.6	13.2	2.1	0	0	2.1	1.6	BU
3_7,9-10	Nitrate + Nitrite as Nitrogen (N)	Discharge	mg/L	1	2	0.6	13.2	26.4	0	0	26.4	8	BU/TMDL
3_7,9-10	Oil & Grease	Discharge	mg/L	1	Available Data <DL	0.6	13.2	Available Data < DL	0	0	NA	15	BU
3_7,9-10	Sulfate	Discharge	mg/L	1	15	0.6	13.2	198.0	0	0	197.95	300	BU
3_7,9-10	Total Dissolved Solids	Discharge	mg/L	1	120	0.6	13.2	1583.6	0	0	1583.63	850	BU
3_7,9-10	Total Suspended Solids	Annual	mg/L	2	160	0.6	7.4	1184.0	0	0	1184	45	BU