

APPENDIX G

Section 16

Outfall 008 – December 19, 2010

Test America Analytical Laboratory Report

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LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project: Routine Outfall 008 2010
Routine Outfall 008

Sampled: 12/19/10
Received: 12/20/10
Issued: 02/01/11 17:01

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.*

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: Some analytes in these samples and the associated method blank have an ion abundance ratio that is outside of criteria. The analytes are considered as an "estimated maximum possible concentration" (EMPC) because the quantitation is based on the theoretical ion abundance ratio. Analytical results are reported with a "Q" flag.

Revised report to correct the dissolved zinc result. During data package review, it was discovered that the wrong sample was reported for the dissolved zinc analysis. It was confirmed by reanalysis.

LABORATORY ID

ITL1889-01
ITL1889-02

CLIENT ID

Outfall 008 (Grab)
Outfall 008 (Composite)

MATRIX

Water
Water

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Heather Clark For Debby Wilson
Project Manager

MWH-Pasadena/Boeing
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Project ID: Routine Outfall 008 2010
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LABORATORY ID

CLIENT ID

MATRIX

Reviewed By:



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Project Manager

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Routine Outfall 008
Report Number: ITL1889

Sampled: 12/19/10
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HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-01 (Outfall 008 (Grab) - Water)									
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	10L2313	4.7	1.3	ND	1	12/20/2010	12/20/2010	

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METALS

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)									
Reporting Units: ug/l									
Mercury	EPA 245.1	10L2694	0.20	0.10	ND	1	12/22/2010	12/22/2010	
Antimony	EPA 200.8	10L2490	2.0	0.30	ND	1	12/21/2010	12/21/2010	
Cadmium	EPA 200.8	10L2490	1.0	0.10	0.12	1	12/21/2010	12/21/2010	Ja
Zinc	EPA 200.7	10L2484	20.0	6.00	43.5	1	12/21/2010	12/23/2010	
Copper	EPA 200.8	10L2490	2.00	0.500	9.07	1	12/21/2010	12/21/2010	
Lead	EPA 200.8	10L2490	1.0	0.20	6.7	1	12/21/2010	12/21/2010	
Selenium	EPA 200.8	10L2490	2.0	0.50	ND	1	12/21/2010	12/21/2010	
Thallium	EPA 200.8	10L2490	1.0	0.20	ND	1	12/21/2010	12/21/2010	

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DISSOLVED METALS

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)									
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	10L2695	0.20	0.10	ND	1	12/22/2010	12/22/2010	
Antimony	EPA 200.8-Diss	10L2494	2.0	0.30	ND	1	12/21/2010	12/21/2010	
Cadmium	EPA 200.8-Diss	10L2494	1.0	0.10	ND	1	12/21/2010	12/21/2010	
Zinc	EPA 200.7-Diss	10L2487	20.0	6.00	7.88	1	12/21/2010	12/30/2010	Ja
Copper	EPA 200.8-Diss	10L2494	2.00	0.500	2.60	1	12/21/2010	12/21/2010	
Lead	EPA 200.8-Diss	10L2494	1.0	0.20	0.32	1	12/21/2010	12/21/2010	Ja
Selenium	EPA 200.8-Diss	10L2494	2.0	0.50	0.50	1	12/21/2010	12/21/2010	Ja
Thallium	EPA 200.8-Diss	10L2494	1.0	0.20	ND	1	12/21/2010	12/21/2010	

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INORGANICS

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)									
Reporting Units: mg/l									
Ammonia-N (Distilled)	SM4500NH3-C	10L2540	0.500	0.500	ND	1	12/21/2010	12/21/2010	
Chloride	EPA 300.0	10L2301	0.50	0.25	17	1	12/20/2010	12/20/2010	
Total Cyanide	SM4500CN-E	10L2544	0.0050		ND	1	12/21/2010	12/21/2010	
Nitrate-N	EPA 300.0	10L2301	0.11	0.060	0.52	1	12/20/2010	12/20/2010	
Nitrite-N	EPA 300.0	10L2301	0.15	0.090	ND	1	12/20/2010	12/20/2010	
Nitrate/Nitrite-N	EPA 300.0	10L2301	0.26	0.15	0.52	1	12/20/2010	12/20/2010	
Sulfate	EPA 300.0	10L2499	0.50	0.20	8.0	1	12/21/2010	12/21/2010	
Total Dissolved Solids	SM2540C	10L2410	10	1.0	220	1	12/21/2010	12/21/2010	
Total Suspended Solids	SM 2540D	10L2549	10		150	1	12/21/2010	12/21/2010	
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	10L2485	4.0	0.90	1.9	1	12/21/2010	12/21/2010	Ja

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8644

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Uranium, Total	8644	8644	1	1.24	1	1/18/2011	1/18/2011	

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900

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Gross Alpha	900	8644	3	10.4	1	12/31/2010	1/4/2011	
Gross Beta	900	8644	4	12.8	1	12/31/2010	1/4/2011	

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901.1

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Cesium-137	901.1	8644	20	ND	1	12/22/2010	12/31/2010	U
Potassium-40	901.1	8644	25	21	1	12/22/2010	12/31/2010	Jb

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903.1

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Radium-226	903.1	8644	1	1.41	1	1/24/2011	1/24/2011	

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904

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Radium-228	904	8644	1	0.615	1	1/21/2011	1/21/2011	Jb

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905

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Strontium-90	905	8644	2	-0.007	1	1/6/2011	1/6/2011	U

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906

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Tritium	906	8644	500	-216	1	1/10/2011	1/13/2011	U

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EPA-5 1613Bx

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)									
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	357431	0.000000	0.000001	125.7e-006	0.97	12/23/2010	12/28/2010	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	357431	0.000000	0.000003	12.4e-006	0.97	12/23/2010	12/28/2010	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	357431	0.000000	0.000003	7	ND	12/23/2010	12/28/2010	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	357431	0.000000	0.000005	1	ND	12/23/2010	12/28/2010	
1,2,3,4,7,8-HxCDF	EPA-5 1613B	357431	0.000000	0.000002	25	ND	12/23/2010	12/28/2010	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	357431	0.000001	0.000012	12	ND	12/23/2010	12/28/2010	
1,2,3,6,7,8-HxCDF	EPA-5 1613B	357431	0.000000	0.000007	73	ND	12/23/2010	12/28/2010	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	357431	0.000000	0.000001	1	ND	12/23/2010	12/28/2010	
1,2,3,7,8,9-HxCDF	EPA-5 1613B	357431	0.000000	0.000004	44	ND	12/23/2010	12/28/2010	
1,2,3,7,8-PeCDD	EPA-5 1613B	357431	0.000000	0.000006	68	ND	12/23/2010	12/28/2010	
1,2,3,7,8-PeCDF	EPA-5 1613B	357431	0.000000	0.000008	8	ND	12/23/2010	12/28/2010	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	357431	0.000000	0.000005	55	ND	12/23/2010	12/28/2010	
2,3,4,7,8-PeCDF	EPA-5 1613B	357431	0.000000	0.000005	54	ND	12/23/2010	12/28/2010	
2,3,7,8-TCDD	EPA-5 1613B	357431	0.000000	0.000003	37	ND	12/23/2010	12/28/2010	
2,3,7,8-TCDF	EPA-5 1613B	357431	0.000000	0.000005	54	ND	12/23/2010	12/28/2010	
OCDD	EPA-5 1613B	357431	0.000000	0.000006	65.5e-005	0.97	12/23/2010	12/28/2010	J, B
OCDF	EPA-5 1613B	357431	0.000000	0.000003	32.7e-006	0.97	12/23/2010	12/28/2010	B
Total HpCDD	EPA-5 1613B	357431	0.000000	0.000001	121.6e-005	0.97	12/23/2010	12/28/2010	J, B
Total HpCDF	EPA-5 1613B	357431	0.000000	0.000003	33.4e-006	0.97	12/23/2010	12/28/2010	J, Q, B
Total HxCDD	EPA-5 1613B	357431	0.000000	0.000005	51	ND	12/23/2010	12/28/2010	
Total HxCDF	EPA-5 1613B	357431	0.000000	0.000002	25	ND	12/23/2010	12/28/2010	
Total PeCDD	EPA-5 1613B	357431	0.000000	0.000006	68	ND	12/23/2010	12/28/2010	
Total PeCDF	EPA-5 1613B	357431	0.000000	0.000005	54	ND	12/23/2010	12/28/2010	
Total TCDD	EPA-5 1613B	357431	0.000000	0.000003	37	ND	12/23/2010	12/28/2010	
Total TCDF	EPA-5 1613B	357431	0.000000	0.000005	54	ND	12/23/2010	12/28/2010	

Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)	93 %
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)	82 %
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)	89 %
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)	76 %
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)	73 %
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)	84 %
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)	73 %
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)	69 %
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)	75 %
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)	77 %
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)	73 %
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	75 %
Surrogate: 13C-2,3,7,8-TCDD (25-164%)	68 %
Surrogate: 13C-2,3,7,8-TCDF (24-169%)	63 %
Surrogate: 13C-OCDD (17-157%)	79 %
Surrogate: 37C14-2,3,7,8-TCDD (35-197%)	99 %

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SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 008 (Composite) (ITL1889-02) - Water					
EPA 300.0	2	12/19/2010 14:09	12/20/2010 05:00	12/20/2010 19:00	12/20/2010 22:15
Filtration	1	12/19/2010 14:09	12/20/2010 05:00	12/21/2010 00:30	12/21/2010 00:30

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METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2313 Extracted: 12/20/10										
Blank Analyzed: 12/20/2010 (10L2313-BLK1)										
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
LCS Analyzed: 12/20/2010 (10L2313-BS1)										
Hexane Extractable Material (Oil & Grease)	19.5	5.0	mg/l	20.0		98	78-114			MNR1
LCS Dup Analyzed: 12/20/2010 (10L2313-BSD1)										
Hexane Extractable Material (Oil & Grease)	19.1	5.0	mg/l	20.0		96	78-114	2	11	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2484 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2484-BLK1)										
Zinc	ND	20.0	ug/l							
LCS Analyzed: 12/21/2010 (10L2484-BS1)										
Zinc	509	20.0	ug/l	500		102	85-115			
Matrix Spike Analyzed: 12/21/2010 (10L2484-MS1)										
Zinc	527	20.0	ug/l	500	21.9	101	70-130			
Matrix Spike Analyzed: 12/21/2010 (10L2484-MS2)										
Zinc	545	20.0	ug/l	500	62.3	96	70-130			
Matrix Spike Dup Analyzed: 12/21/2010 (10L2484-MSD1)										
Zinc	499	20.0	ug/l	500	21.9	95	70-130	6	20	
Batch: 10L2490 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2490-BLK1)										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/21/2010 (10L2490-BS1)										
Antimony	82.1	2.0	ug/l	80.0		103	85-115			
Cadmium	81.5	1.0	ug/l	80.0		102	85-115			
Copper	82.8	2.00	ug/l	80.0		103	85-115			
Lead	83.1	1.0	ug/l	80.0		104	85-115			
Selenium	82.9	2.0	ug/l	80.0		104	85-115			
Thallium	85.1	1.0	ug/l	80.0		106	85-115			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2490 Extracted: 12/21/10										
Matrix Spike Analyzed: 12/21/2010 (10L2490-MS1)					Source: ITL1829-03					
Antimony	83.7	2.0	ug/l	80.0	ND	105	70-130			
Cadmium	77.1	1.0	ug/l	80.0	0.125	96	70-130			
Copper	78.7	2.00	ug/l	80.0	5.15	92	70-130			
Lead	80.1	1.0	ug/l	80.0	4.26	95	70-130			
Selenium	82.5	2.0	ug/l	80.0	4.20	98	70-130			
Thallium	76.0	1.0	ug/l	80.0	ND	95	70-130			
Matrix Spike Analyzed: 12/21/2010 (10L2490-MS2)					Source: ITL1829-04					
Antimony	84.7	2.0	ug/l	80.0	ND	106	70-130			
Cadmium	78.3	1.0	ug/l	80.0	ND	98	70-130			
Copper	76.3	2.00	ug/l	80.0	ND	95	70-130			
Lead	77.4	1.0	ug/l	80.0	0.729	96	70-130			
Selenium	84.1	2.0	ug/l	80.0	3.40	101	70-130			
Thallium	77.4	1.0	ug/l	80.0	ND	97	70-130			
Matrix Spike Dup Analyzed: 12/21/2010 (10L2490-MSD1)					Source: ITL1829-03					
Antimony	84.4	2.0	ug/l	80.0	ND	105	70-130	0.8	20	
Cadmium	77.6	1.0	ug/l	80.0	0.125	97	70-130	0.7	20	
Copper	79.4	2.00	ug/l	80.0	5.15	93	70-130	0.8	20	
Lead	81.4	1.0	ug/l	80.0	4.26	96	70-130	2	20	
Selenium	81.6	2.0	ug/l	80.0	4.20	97	70-130	1	20	
Thallium	78.5	1.0	ug/l	80.0	ND	98	70-130	3	20	
Batch: 10L2694 Extracted: 12/22/10										
Blank Analyzed: 12/22/2010 (10L2694-BLK1)										
Mercury	ND	0.20	ug/l							

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METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2694 Extracted: 12/22/10										
LCS Analyzed: 12/22/2010 (10L2694-BS1)										
Mercury	7.73	0.20	ug/l	8.00		97	85-115			
Matrix Spike Analyzed: 12/22/2010 (10L2694-MS1)										
					Source: ITL1894-01					
Mercury	7.48	0.20	ug/l	8.00	ND	93	70-130			
Matrix Spike Dup Analyzed: 12/22/2010 (10L2694-MSD1)										
					Source: ITL1894-01					
Mercury	7.47	0.20	ug/l	8.00	ND	93	70-130	0.04	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2487 Extracted: 12/21/10										
Blank Analyzed: 12/23/2010 (10L2487-BLK1)										
Zinc	ND	20.0	ug/l							
LCS Analyzed: 12/23/2010 (10L2487-BS1)										
Zinc	510	20.0	ug/l	500		102	85-115			
Matrix Spike Analyzed: 12/23/2010 (10L2487-MS1)										
Zinc	521	20.0	ug/l	500	18.1	101	70-130			
Matrix Spike Analyzed: 12/23/2010 (10L2487-MS2)										
Zinc	502	20.0	ug/l	500	ND	100	70-130			
Matrix Spike Dup Analyzed: 12/23/2010 (10L2487-MSD1)										
Zinc	505	20.0	ug/l	500	18.1	97	70-130	3	20	
Batch: 10L2494 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2494-BLK1)										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/21/2010 (10L2494-BS1)										
Antimony	79.1	2.0	ug/l	80.0		99	85-115			
Cadmium	81.6	1.0	ug/l	80.0		102	85-115			
Copper	85.6	2.00	ug/l	80.0		107	85-115			
Lead	79.1	1.0	ug/l	80.0		99	85-115			
Selenium	80.4	2.0	ug/l	80.0		101	85-115			
Thallium	75.2	1.0	ug/l	80.0		94	85-115			

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DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2494 Extracted: 12/21/10										
Matrix Spike Analyzed: 12/21/2010 (10L2494-MS1)					Source: ITL1890-03					
Antimony	75.8	2.0	ug/l	80.0	0.316	94	70-130			
Cadmium	76.0	1.0	ug/l	80.0	ND	95	70-130			
Copper	79.5	2.00	ug/l	80.0	2.91	96	70-130			
Lead	80.8	1.0	ug/l	80.0	0.391	100	70-130			
Selenium	72.5	2.0	ug/l	80.0	ND	91	70-130			
Thallium	76.4	1.0	ug/l	80.0	ND	96	70-130			
Matrix Spike Dup Analyzed: 12/21/2010 (10L2494-MSD1)					Source: ITL1890-03					
Antimony	77.9	2.0	ug/l	80.0	0.316	97	70-130	3	20	
Cadmium	77.5	1.0	ug/l	80.0	ND	97	70-130	2	20	
Copper	80.8	2.00	ug/l	80.0	2.91	97	70-130	2	20	
Lead	74.6	1.0	ug/l	80.0	0.391	93	70-130	8	20	
Selenium	71.9	2.0	ug/l	80.0	ND	90	70-130	0.9	20	
Thallium	70.9	1.0	ug/l	80.0	ND	89	70-130	8	20	
Batch: 10L2695 Extracted: 12/22/10										
Blank Analyzed: 12/22/2010 (10L2695-BLK1)										
Mercury	ND	0.20	ug/l							
LCS Analyzed: 12/22/2010 (10L2695-BS1)										
Mercury	8.15	0.20	ug/l	8.00		102	85-115			
Matrix Spike Analyzed: 12/22/2010 (10L2695-MS1)					Source: ITL1889-02					
Mercury	7.89	0.20	ug/l	8.00	ND	99	70-130			
Matrix Spike Dup Analyzed: 12/22/2010 (10L2695-MSD1)					Source: ITL1889-02					
Mercury	7.80	0.20	ug/l	8.00	ND	97	70-130	1	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2301 Extracted: 12/20/10										
Blank Analyzed: 12/20/2010 (10L2301-BLK1)										
Chloride	ND	0.50	mg/l							
Nitrate-N	ND	0.11	mg/l							
Nitrite-N	ND	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
LCS Analyzed: 12/20/2010 (10L2301-BS1)										
Chloride	4.77	0.50	mg/l	5.00		95	90-110			
Nitrate-N	1.02	0.11	mg/l	1.13		90	90-110			
Nitrite-N	1.45	0.15	mg/l	1.52		95	90-110			
Matrix Spike Analyzed: 12/20/2010 (10L2301-MS1)					Source: ITL2007-01					
Chloride	65.5	2.5	mg/l	50.0	16.6	98	80-120			
Nitrate-N	18.9	0.55	mg/l	11.3	8.19	95	80-120			
Nitrite-N	14.5	0.75	mg/l	15.2	ND	95	80-120			
Matrix Spike Dup Analyzed: 12/20/2010 (10L2301-MSD1)					Source: ITL2007-01					
Chloride	65.5	2.5	mg/l	50.0	16.6	98	80-120	0.03	20	
Nitrate-N	19.8	0.55	mg/l	11.3	8.19	103	80-120	5	20	
Nitrite-N	15.0	0.75	mg/l	15.2	ND	99	80-120	3	20	
Batch: 10L2410 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2410-BLK1)										
Total Dissolved Solids	ND	10	mg/l							
LCS Analyzed: 12/21/2010 (10L2410-BS1)										
Total Dissolved Solids	1010	10	mg/l	1000		101	90-110			

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2410 Extracted: 12/21/10										
Duplicate Analyzed: 12/21/2010 (10L2410-DUP1)										
Total Dissolved Solids	226	10	mg/l		224			0.9	10	
Batch: 10L2485 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2485-BLK1)										
Perchlorate	ND	4.0	ug/l							
LCS Analyzed: 12/21/2010 (10L2485-BS1)										
Perchlorate	23.3	4.0	ug/l	25.0		93	85-115			
Matrix Spike Analyzed: 12/21/2010 (10L2485-MS1)										
Perchlorate	24.4	4.0	ug/l	25.0	1.92	90	80-120			
Matrix Spike Dup Analyzed: 12/21/2010 (10L2485-MSD1)										
Perchlorate	23.9	4.0	ug/l	25.0	1.92	88	80-120	2	20	
Batch: 10L2499 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2499-BLK1)										
Sulfate	ND	0.50	mg/l							
LCS Analyzed: 12/21/2010 (10L2499-BS1)										
Sulfate	9.51	0.50	mg/l	10.0		95	90-110			
Matrix Spike Analyzed: 12/21/2010 (10L2499-MS1)										
Sulfate	167	25	mg/l	100	72.9	94	80-120			

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2499 Extracted: 12/21/10										
Matrix Spike Analyzed: 12/21/2010 (10L2499-MS2)					Source: ITL2139-01					
Sulfate	11.8	0.50	mg/l	10.0	1.98	98	80-120			
Matrix Spike Dup Analyzed: 12/21/2010 (10L2499-MSD1)					Source: ITL1794-02					
Sulfate	163	25	mg/l	100	72.9	90	80-120	2	20	
Batch: 10L2540 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2540-BLK1)										
Ammonia-N (Distilled)	ND	0.500	mg/l							
LCS Analyzed: 12/21/2010 (10L2540-BS1)										
Ammonia-N (Distilled)	10.1	0.500	mg/l	10.0		101	80-115			
Matrix Spike Analyzed: 12/21/2010 (10L2540-MS1)					Source: ITL1699-01					
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 12/21/2010 (10L2540-MSD1)					Source: ITL1699-01					
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120	0	15	
Batch: 10L2544 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2544-BLK1)										
Total Cyanide	ND	0.0050	mg/l							
LCS Analyzed: 12/21/2010 (10L2544-BS1)										
Total Cyanide	0.192	0.0050	mg/l	0.200		96	90-110			

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L2544 Extracted: 12/21/10										
Matrix Spike Analyzed: 12/21/2010 (10L2544-MS1)					Source: ITL1802-02					
Total Cyanide	0.192	0.0050	mg/l	0.200	ND	96	70-115			
Matrix Spike Dup Analyzed: 12/21/2010 (10L2544-MSD1)					Source: ITL1802-02					
Total Cyanide	0.187	0.0050	mg/l	0.200	ND	94	70-115	2	15	
Batch: 10L2549 Extracted: 12/21/10										
Blank Analyzed: 12/21/2010 (10L2549-BLK1)										
Total Suspended Solids	ND	10	mg/l							
LCS Analyzed: 12/21/2010 (10L2549-BS1)										
Total Suspended Solids	991	10	mg/l	1000		99	85-115			
Duplicate Analyzed: 12/21/2010 (10L2549-DUP1)					Source: ITL1881-02					
Total Suspended Solids	19.0	10	mg/l		19.0			0	10	

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 357431 Extracted: 12/23/10										
Blank Analyzed: 12/28/2010 (G0L230000431B)					Source:					
1,2,3,4,6,7,8-HpCDD	1.5e-006	0.00005	ug/L				-			J
1,2,3,4,6,7,8-HpCDF	9.5e-007	0.00005	ug/L				-			J, Q
1,2,3,4,7,8,9-HpCDF	9.6e-007	0.00005	ug/L				-			J, Q
1,2,3,4,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDD	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	5.9e-006	0.0001	ug/L				-			J
OCDF	2e-006	0.0001	ug/L				-			J
Total HpCDD	2.5e-006	0.00005	ug/L				-			J
Total HpCDF	1.9e-006	0.00005	ug/L				-			J, Q
Total HxCDD	ND	0.00005	ug/L				-			
Total HxCDF	ND	0.00005	ug/L				-			
Total PeCDD	ND	0.00005	ug/L				-			
Total PeCDF	ND	0.00005	ug/L				-			
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0021		ug/L	0.002		107	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0018		ug/L	0.002		92	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.002		ug/L	0.002		100	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0017		ug/L	0.002		86	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0016		ug/L	0.002		81	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.002		ug/L	0.002		98	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0016		ug/L	0.002		83	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0016		ug/L	0.002		81	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0018		ug/L	0.002		91	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0018		ug/L	0.002		92	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0017		ug/L	0.002		85	28-136			

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 357431 Extracted: 12/23/10										
Blank Analyzed: 12/28/2010 (G0L230000431B)					Source:					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0018		ug/L	0.002		89	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0017		ug/L	0.002		83	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0015		ug/L	0.002		77	24-169			
Surrogate: 13C-OCDD	0.0036		ug/L	0.004		90	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.0008		ug/L	0.0008		99	35-197			
LCS Analyzed: 12/28/2010 (G0L230000431C)					Source:					
1,2,3,4,6,7,8-HpCDD	0.00102	0.00005	ug/L	0.001		102	70-140			B
1,2,3,4,6,7,8-HpCDF	0.00109	0.00005	ug/L	0.001		109	82-122			B
1,2,3,4,7,8,9-HpCDF	0.00108	0.00005	ug/L	0.001		108	78-138			B
1,2,3,4,7,8-HxCDD	0.00118	0.00005	ug/L	0.001		118	70-164			
1,2,3,4,7,8-HxCDF	0.00102	0.00005	ug/L	0.001		102	72-134			
1,2,3,6,7,8-HxCDD	0.000981	0.00005	ug/L	0.001		98	76-134			
1,2,3,6,7,8-HxCDF	0.00105	0.00005	ug/L	0.001		105	84-130			
1,2,3,7,8,9-HxCDD	0.00108	0.00005	ug/L	0.001		108	64-162			
1,2,3,7,8,9-HxCDF	0.00108	0.00005	ug/L	0.001		108	78-130			
1,2,3,7,8-PeCDD	0.00109	0.00005	ug/L	0.001		109	70-142			
1,2,3,7,8-PeCDF	0.000975	0.00005	ug/L	0.001		98	80-134			
2,3,4,6,7,8-HxCDF	0.00103	0.00005	ug/L	0.001		103	70-156			
2,3,4,7,8-PeCDF	0.000976	0.00005	ug/L	0.001		98	68-160			
2,3,7,8-TCDD	0.000214	0.00001	ug/L	0.0002		107	67-158			
2,3,7,8-TCDF	0.000186	0.00001	ug/L	0.0002		93	75-158			
OCDD	0.00191	0.0001	ug/L	0.002		96	78-144			B
OCDF	0.00182	0.0001	ug/L	0.002		91	63-170			B
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00221		ug/L	0.002		111	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.00194		ug/L	0.002		97	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.00207		ug/L	0.002		104	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00166		ug/L	0.002		83	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00162		ug/L	0.002		81	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00201		ug/L	0.002		100	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00168		ug/L	0.002		84	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0016		ug/L	0.002		80	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00181		ug/L	0.002		91	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00187		ug/L	0.002		93	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00169		ug/L	0.002		85	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00177		ug/L	0.002		89	13-328			

TestAmerica Irvine

Heather Clark For Debby Wilson
Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL1889

Sampled: 12/19/10
 Received: 12/20/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 357431 Extracted: 12/23/10										
LCS Analyzed: 12/28/2010 (G0L230000431C)										
Surrogate: 13C-2,3,7,8-TCDD	0.00171		ug/L	0.002		85	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00157		ug/L	0.002		79	22-152			
Surrogate: 13C-OCDD	0.00374		ug/L	0.004		94	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000784		ug/L	0.0008		98	31-191			

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Heather Clark For Debby Wilson
 Project Manager

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL1889

Sampled: 12/19/10
Received: 12/20/10

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ITL1889-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.7	15

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ITL1889-02	Ammonia-N, Titr 4500NH3-C (w/di:Ammonia-N (Distilled)	Ammonia-N	mg/l	0	0.500	10.1
ITL1889-02	Antimony-200.8	Antimony	ug/l	0.15	2.0	6
ITL1889-02	Cadmium-200.8	Cadmium	ug/l	0.12	1.0	3.1
ITL1889-02	Chloride - 300.0	Chloride	mg/l	17	0.50	150
ITL1889-02	Copper-200.8	Copper	ug/l	9.07	2.00	14
ITL1889-02	Lead-200.8	Lead	ug/l	6.71	1.0	5.2
ITL1889-02	Mercury - 245.1	Mercury	ug/l	0	0.20	0.13
ITL1889-02	Nitrate-N, 300.0	Nitrate-N	mg/l	0.52	0.11	8
ITL1889-02	Nitrite-N, 300.0	Nitrite-N	mg/l	0	0.15	1
ITL1889-02	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.52	0.26	8
ITL1889-02	Perchlorate 314.0 - Default	Perchlorate	ug/l	1.92	4.0	6
ITL1889-02	Selenium-200.8	Selenium	ug/l	0.49	2.0	5
ITL1889-02	Sulfate-300.0	Sulfate	mg/l	8.01	0.50	300
ITL1889-02	TDS - SM2540C	Total Dissolved Solids	mg/l	224	10	950
ITL1889-02	Thallium-200.8	Thallium	ug/l	0.099	1.0	2
ITL1889-02	Zinc-200.7	Zinc	ug/l	43	20.0	159

TestAmerica Irvine

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Routine Outfall 008
Report Number: ITL1889

Sampled: 12/19/10
Received: 12/20/10

DATA QUALIFIERS AND DEFINITIONS

- B** Method blank contamination. The associated method blank contains the target analyte at a reportable level.
- J** Estimated result. Result is less than the reporting limit.
- Ja** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- Jb** The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- MNR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- Q** Estimated maximum possible concentration (EMPC).
- U** The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

TestAmerica Irvine

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Project Manager

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618 Michillinda Avenue, Suite 200
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Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL1889

Sampled: 12/19/10
Received: 12/20/10

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EPA 1664A	Water	X	X
EPA 200.7-Diss	Water	X	X
EPA 200.7	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2540C	Water	X	
SM4500CN-E	Water	X	X
SM4500NH3-C	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Aquatic Testing Laboratories-SUB *California Cert #1775*

4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chronic

Samples: ITL1889-02

TestAmerica Irvine

Heather Clark For Debby Wilson
Project Manager

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MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL1889

Sampled: 12/19/10
Received: 12/20/10

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec
Samples: ITL1889-02

Analysis Performed: Gross Alpha
Samples: ITL1889-02

Analysis Performed: Gross Beta
Samples: ITL1889-02

Analysis Performed: Radium, Combined
Samples: ITL1889-02

Analysis Performed: Strontium 90
Samples: ITL1889-02

Analysis Performed: Tritium
Samples: ITL1889-02

Analysis Performed: Uranium, Combined
Samples: ITL1889-02

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8644
Samples: ITL1889-02

Method Performed: 900
Samples: ITL1889-02

Method Performed: 901.1
Samples: ITL1889-02

Method Performed: 903.1
Samples: ITL1889-02

Method Performed: 904
Samples: ITL1889-02

Method Performed: 905
Samples: ITL1889-02

Method Performed: 906
Samples: ITL1889-02

TestAmerica Irvine

Heather Clark For Debby Wilson
Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL1889

Sampled: 12/19/10
Received: 12/20/10

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B
Samples: ITL1889-02

TestAmerica Irvine

Heather Clark For Debby Wilson
Project Manager

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ITL1889 <Page 33 of 33>

LABORATORY REPORT



"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: December 28, 2010

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

Laboratory No.: A-10122006-001
Sample I.D.: ITL1889-02 (Outfall 008)

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

Date Sampled: 12/19/10 - composite
Date Received: 12/20/10
Temp. Received: 5.7°C
Chlorine (TRC): 0.0 mg/l
Date Tested: 12/20/10 to 12/27/10

Sample Analysis: The following analyses were performed on your sample:
Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).
Attached are the test data generated from the analysis of your sample.

Result Summary:

	<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

**CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0**



Lab No.: A-10122006-001
Client/ID: Test America - ITL1889-02 (Outfall 008)

Date Tested: 12/20/10 to 12/27/10

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).
QA/QC Batch No.: RT-101207.

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 15 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%	24.0
100% Sample	100%	26.7
* Sample not statistically significantly less than Control.		

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 (24.0 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 = 8.2%)
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

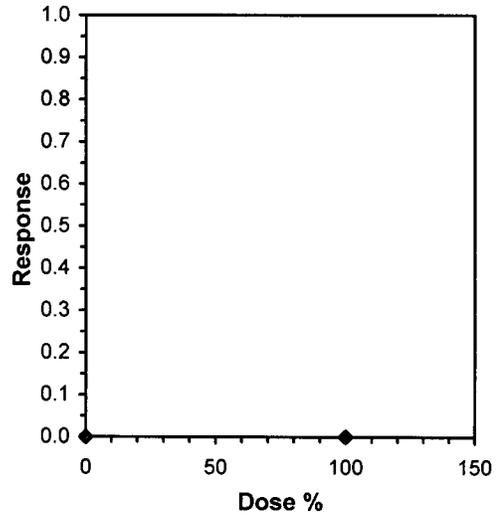
Start Date: 12/20/2010 18:30 Test ID: 10122006c Sample ID: Outfall 008
 End Date: 12/27/2010 17:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: EFF2-Industrial
 Sample Date: 12/19/2010 14:09 Protocol: FWCH EPA Test Species: CD-Ceriodaphnia dubia
 Comments:

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: 12/20/2010 18:30 Test ID: 10122006c Sample ID: Outfall 008
 End Date: 12/27/2010 17:30 Lab ID: CAATL-Aquatic Testing Labs Sample Type: EFF2-Industrial
 Sample Date: 12/19/2010 14:09 Protocol: FWCH EPA Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	23.000	25.000	24.000	25.000	25.000	21.000	23.000	22.000	26.000	26.000
100	29.000	25.000	27.000	30.000	20.000	24.000	31.000	27.000	27.000	27.000

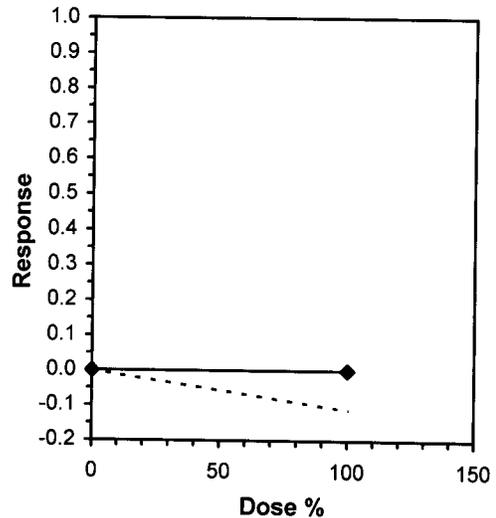
Conc-%	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD	Isotonic	
			Mean	Min	Max	CV%	Mean					N-Mean	
D-Control	24.000	1.0000	24.000	21.000	26.000	7.082	10				25.350	1.0000	
100	26.700	1.1125	26.700	20.000	31.000	11.850	10	-2.377	1.734	1.970	25.350	1.0000	

Auxiliary Tests

	Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.95163	0.905	-0.8349	1.68277		
F-Test indicates equal variances (p = 0.08)	3.46538	6.54109				
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences Treatments vs D-Control	1.96952	0.08206	36.45	6.45	0.02874	1, 18

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-10122006-001

Client ID: TestAmerica - Outfall 008

Start Date: 12/20/2010

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr												
Analyst Initials:		[Signature]													
Time of Readings:		1830	1700	1700	1730	1730	1700	1700	1730	1730	1800	1800	1800	1800	1730
Control	DO	8.2	8.5	8.8	8.5	7.9	8.6	8.0	8.4	8.1	8.2	8.4	8.0	8.4	8.1
	pH	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.1	8.2	8.0	8.2	8.0
	Temp	25.1	24.1	24.3	24.0	25.1	24.7	24.2	24.4	24.2	24.3	24.2	24.5	24.2	24.4
100%	DO	9.0	8.3	9.7	8.4	8.7	8.2	9.7	8.1	9.7	8.1	9.9	8.0	9.1	8.1
	pH	7.8	8.0	7.8	8.1	7.8	8.1	7.5	8.1	7.5	8.0	7.6	8.0	7.7	8.0
	Temp	25.0	24.2	24.6	24.8	25.0	24.5	25.1	24.4	24.7	24.3	24.4	24.5	24.2	24.6

Additional Parameters	Control	100% Sample
Conductivity (umohms)	287	181
Alkalinity (mg/l CaCO ₃)	72	64
Hardness (mg/l CaCO ₃)	92	62
Ammonia (mg/l NH ₃ -N)	20.1	0.2

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

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	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	3	0	3	0	0	4	0	0	0	0	5	12	10	[Signature]
	4	4	0	3	5	0	2	3	3	4	0	24	10	[Signature]
	5	7	7	6	6	0	7	7	6	0	7	53	10	[Signature]
	6	12	0	15	14	5	0	0	13	8	14	81	10	[Signature]
	7	0	15	0	0	16	12	13	16	14	0	70	10	[Signature]
	Total	23	25	24	25	25	21	23	22	26	26	240	10	[Signature]
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	3	0	0	5	0	4	0	0	0	4	5	18	10	[Signature]
	4	5	4	6	4	0	4	5	4	0	0	26	10	[Signature]
	5	0	0	8	9	0	0	0	7	0	0	30	10	[Signature]
	6	7	15	0	0	5	4	8	16	8	5	68	10	[Signature]
	7	17	0	14	17	11	16	18	0	15	17	125	10	[Signature]
	Total	29	25	27	30	20	24	31	27	27	27	267	10	[Signature]

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***

SUBCONTRACT ORDER

TestAmerica Irvine

ITL1889

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Debby Wilson

RECEIVING LABORATORY:

Aquatic Testing Laboratories-SUB
4350 Transport Street, Unit 107
Ventura, CA 93003
Phone : (805) 650-0546
Fax: (805) 650-0756
Project Location: California
Receipt Temperature: 5-7 °C

Ice: (Y) N

Analysis	Units	Due	Expires	Comments
----------	-------	-----	---------	----------

Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water)

Sampled: 12/19/10 14:09

Bioassay-7 dy Chronic	N/A	12/23/10	12/21/10 02:09	Cerio, EPA/821-R02-013, Sub to Aquatic testing
-----------------------	-----	----------	----------------	--

Containers Supplied:

1 gal Poly (K)

[Signature] 12/20/10
Released By Date/Time

[Signature] 12-20-10 1815
Received By Date/Time

Released By Date/Time

Received By Date/Time

Client Name/Address: MWH-Arcadia 618 Michillinda Ave. Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson							Project: Boeing-SSFL NPDES Routine Outfall 008 COMPOSITE <i>HIGH</i> Stormwater at Happy Valley							ANALYSIS REQUIRED										Comments
Project Manager: Bronwyn Kelly Sampler: <i>RICK BANAGA</i>							Phone Number: (626) 568-6691 Fax Number: (626) 568-6515							Total Recoverable Metals - Sb, Cd, Cu, Pb, Hg, Ti, Se, Zn	TCDD (and all congeners)	Cl ⁻ , SO ₄ , NO ₃ ⁻ , NO ₂ ⁻ , N, Perchlorate	TDS, TSS	Total Dissolved Metals - Sb, Cd, Cu, Pb, Hg, Ti, Se, Zn	Gross Alpha(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Chronic Toxicity	Nitrate-N, Nitrite-N	Ammonia-N (350.2)	Cyanide	
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #																		
Outfall 008	W	1L Poly	1	<i>12-19-2010 14:09</i>	HNO ₃	2A ✓	X																	
Outfall 008 Dup	W	1L Poly	1		HNO ₃	2B ✓	X																	
Outfall 008	W	1L Amber	2		None	3A, 3B ✓		X																
Outfall 008	W	500 mL Poly	2		None	4A, 4B ✓			X															
Outfall 008	W	500 mL Poly	1		None	5 ✓			X															
Outfall 008	W	1L Poly	1		None	6 ✓				X												Filter w/in 24hrs of receipt at lab		
Outfall 008	W	2.5 Gal Cube	1		None	7A ✓					X											Unfiltered and unpreserved analysis		
		500 mL Amber	1		None	7B ✓																		
Outfall 008	W	1 Gal Poly	1		None	8 ✓								X								Only test if first or second rain events of the year		
Outfall 008	W	500 mL Poly	1		None	9 ✓									X									
Outfall 008	W	500 mL Poly	1		H ₂ SO ₄	10 ✓										X								
Outfall 008	W	500 mL Poly	1	<i>12-19-2010 14:09</i>	NaOH	11 ✓											X							

COC Page 2 of 2 list the Composite Samples for Outfall 008 for this storm event.

These must be added to the same work order for COC Page 1 of 2 for Outfall 008 for the same event.

Relinquished By <i>Jim Burns</i>	Date/Time:	Received By <i>Usher Padilla</i>	Date/Time: <i>12/20/10 16:13</i>	Turn-around time: (Check) 24 Hour: _____ 72 Hour: _____ 10 Day: _____ 48 Hour: _____ 5 Day: <input checked="" type="checkbox"/> Normal: _____
Relinquished By <i>Usher Padilla</i>	Date/Time: <i>12/20/10 18:15</i>	Received By <i>[Signature]</i>	Date/Time: <i>12-20-10 18:15</i>	Sample Integrity: (Check) Intact: _____ On Ice: <input checked="" type="checkbox"/>
Relinquished By	Date/Time:	Received By	Date/Time:	Data Requirements: (Check) No Level IV: _____ All Level IV: _____ NPDES Level IV: <input checked="" type="checkbox"/>



***REFERENCE
TOXICANT
DATA***

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-101207

Date Tested: 12/07/10 to 12/13/10

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: 6 days.
 Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		23.3	
0.25 g/l	100%		25.2	
0.5 g/l	100%		23.7	
1.0 g/l	100%		16.0	*
2.0 g/l	100%		2.9	*
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	2.8 g/l
Reproduction IC25	0.86 mg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥ 80%	Pass (100% Survival)
≥ 15 young per surviving control female	Pass (23.3 young)
≥ 60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD < 47% for reproduction	Pass (PMSD = 18.9%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 31.3%)
Concentration response relationship acceptable	Pass (Response curve normal)

Ceriodaphnia Survival and Reproduction Test-Survival Day 6

Start Date: 12/7/2010 14:00 Test ID: RT101207c Sample ID: REF-Ref Toxicant
 End Date: 12/13/2010 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 12/6/2010 Protocol: FWCH EPA 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	1.0000	1.0000
2	1.0000	1.0000	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

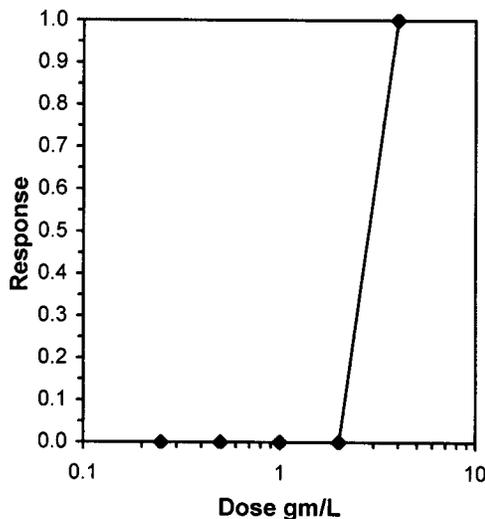
Conc-gm/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Number Resp	Total Number
D-Control	1.0000	1.0000	0	10	10	10			0	10
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	10
2	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0	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				

Graphical Method

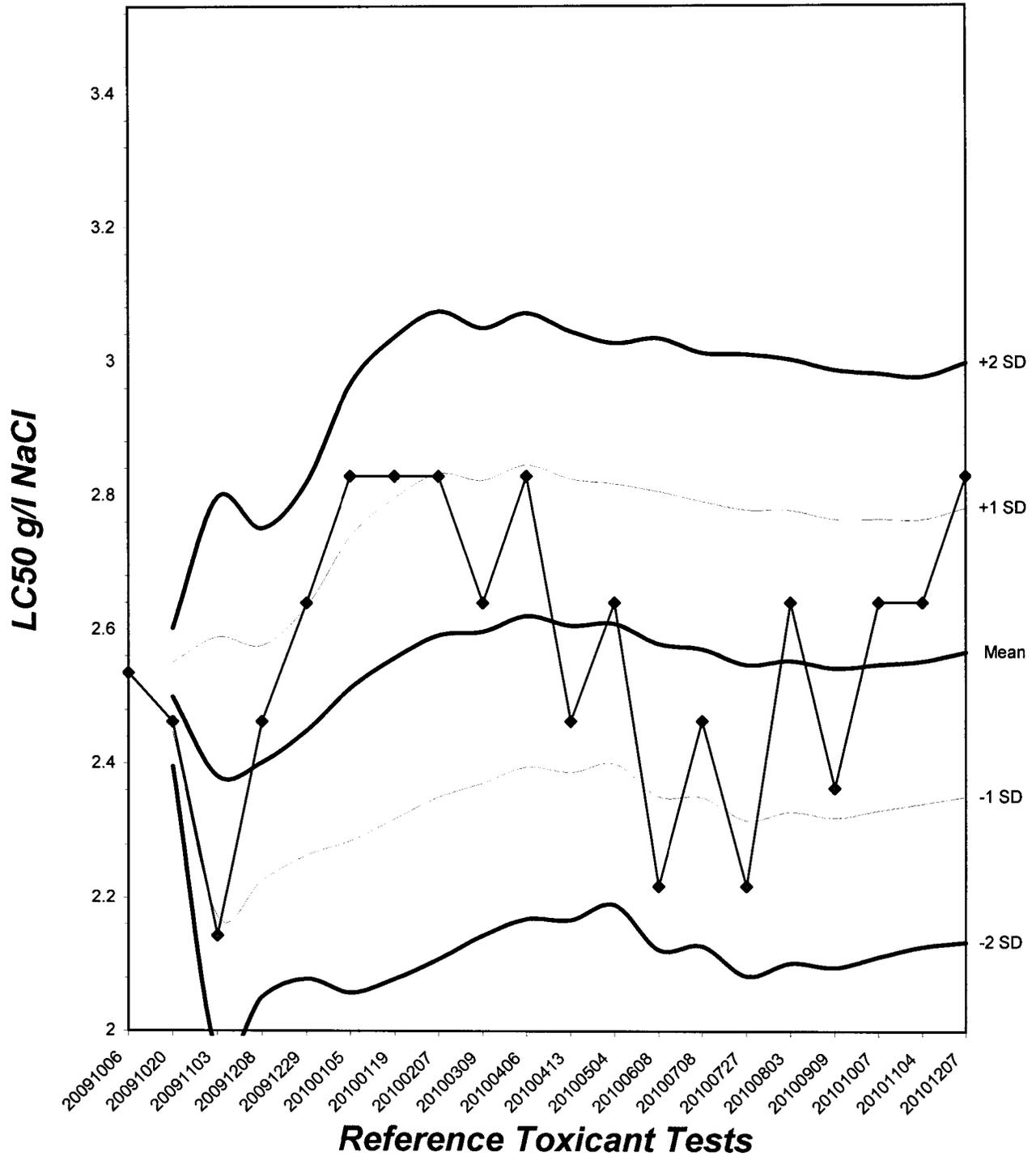
Trim Level	EC50
0.0%	2.8284

2.8284



Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 8.41



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 12/7/2010 14:00 Test ID: RT101207c Sample ID: REF-Ref Toxicant
 End Date: 12/13/2010 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 12/6/2010 Protocol: FWCH EPA Test Species: CD-Ceriodaphnia dubia

Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	22.000	11.000	28.000	27.000	26.000	28.000	21.000	28.000	27.000	15.000
0.25	28.000	29.000	21.000	21.000	28.000	28.000	28.000	25.000	25.000	19.000
0.5	25.000	17.000	20.000	26.000	24.000	29.000	29.000	23.000	25.000	19.000
1	10.000	10.000	20.000	22.000	20.000	11.000	15.000	12.000	24.000	16.000
2	0.000	2.000	7.000	4.000	2.000	4.000	0.000	5.000	2.000	3.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

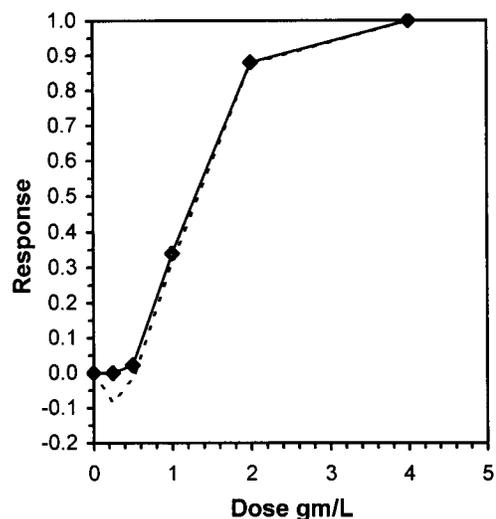
Conc-gm/L	Transform: Untransformed							t-Stat	1-Tailed Critical	MSD	Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N				Mean	N-Mean
D-Control	23.300	1.0000	23.300	11.000	28.000	25.913	10				24.250	1.0000
0.25	25.200	1.0815	25.200	19.000	29.000	14.466	10	-0.959	2.223	4.404	24.250	1.0000
0.5	23.700	1.0172	23.700	17.000	29.000	17.000	10	-0.202	2.223	4.404	23.700	0.9773
*1	16.000	0.6867	16.000	10.000	24.000	32.676	10	3.686	2.223	4.404	16.000	0.6598
*2	2.900	0.1245	2.900	0.000	7.000	75.285	10	10.299	2.223	4.404	2.900	0.1196
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 normal distribution (p > 0.05)	0.96459	0.947	-0.5938	0.09413
Bartlett's Test indicates equal variances (p = 0.06)	8.97697	13.2767		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs D-Control	0.5	1	0.70711		4.40372	0.189	860.47	19.6156	5.6E-15	4, 45

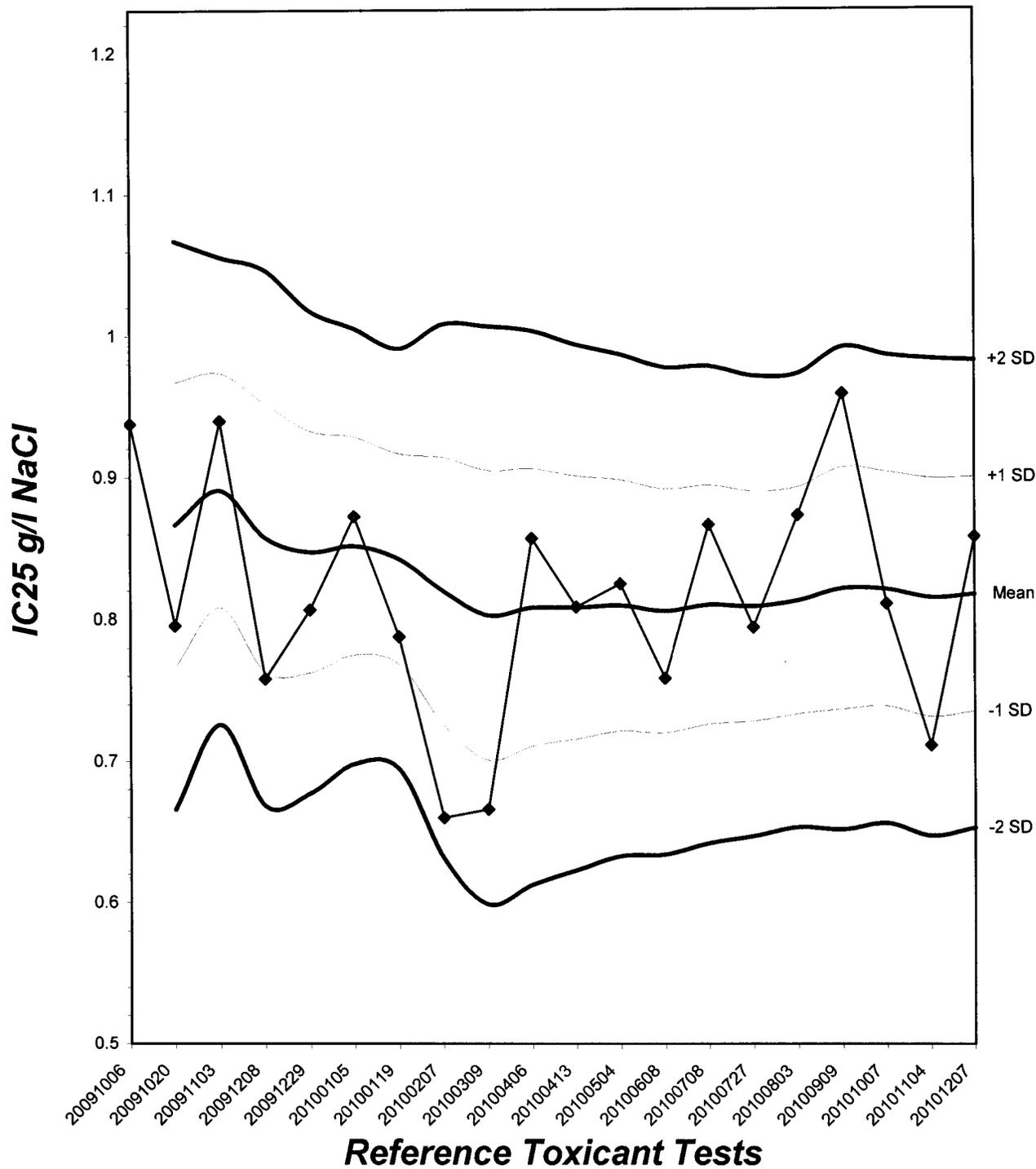
Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL	Skew
IC05	0.5430	0.1060	0.2194 0.6041	-1.2164
IC10	0.6218	0.0833	0.4101 0.7081	-1.1699
IC15	0.7005	0.0819	0.5141 0.8292	-0.4850
IC20	0.7792	0.0859	0.5998 0.9452	0.1951
IC25	0.8580	0.0903	0.6963 1.0439	0.3636
IC40	1.1107	0.1011	0.9055 1.2772	-0.0498
IC50	1.2958	0.0936	1.0659 1.4429	-0.4534



Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 10.1



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



QA/QC No.: RT-101207

Start Date: 12/07/2010

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	4	0	0	0	0	0	0	0	4	10	R
	4	3	3	0	5	4	2	3	4	4	3	31	10	R
	5	9	8	6	7	8	9	6	9	7	0	69	10	R
	6	10	0	18	15	14	17	12	15	16	12	129	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	22	11	28	27	26	28	21	28	27	15	233	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	4	0	0	0	0	0	0	4	10	R	
	4	4	3	0	4	5	4	4	3	4	4	35	10	R
	5	6	9	7	0	8	10	9	7	7	0	63	10	R
	6	18	17	10	17	15	14	15	15	14	15	150	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	28	29	21	21	28	28	28	25	25	19	252	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	4	0	0	0	0	0	4	10	R	
	4	4	3	4	0	5	4	4	3	3	4	34	10	R
	5	6	0	6	8	7	9	7	6	7	0	56	10	R
	6	15	14	10	14	12	16	18	14	15	15	143	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	25	17	20	26	24	29	29	23	25	19	237	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-101207

Start Date:12/07/2010

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	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	4	3	4	4	5	4	3	4	4	3	38	10	R
	5	0	7	6	6	7	0	0	0	6	6	38	10	R
	6	6	0	10	12	8	7	12	8	14	7	84	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	10	10	20	22	20	11	15	12	24	16	160	10	R
2.0 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	0	0	0	0	0	0	10	R	
	4	0	0	0	0	2	0	0	2	0	0	4	10	R
	5	0	2	3	0	0	4	0	0	2	0	11	10	R
	6	0	0	4	4	0	0	0	3	0	3	14	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	0	2	7	4	2	4	0	5	2	3	29	10	R
4.0 g/l	1	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-101207

Start Date: 12/07/2010

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final												
Analyst Initials:		R	R	R	R	R	R	R	R	R	R	R	R	R	R
Time of Readings:		1400	1500	1500	1400	1400	1400	1400	1300	1300	1330	1330	1400	—	—
Control	DO	8.4	8.7	8.4	8.6	8.7	8.3	8.2	8.4	8.1	7.9	8.2	7.6	—	—
	pH	8.2	8.3	8.4	7.9	8.2	8.0	8.2	8.0	8.1	7.9	8.2	8.2	—	—
	Temp	25.0	24.3	25.0	24.5	25.0	24.6	24.8	24.7	25.1	24.0	25.3	24.2	—	—
0.25 g/l	DO	8.4	8.8	8.4	8.6	8.6	8.3	8.2	8.4	8.2	7.9	8.2	7.7	—	—
	pH	8.2	8.3	8.3	7.9	8.2	8.0	8.2	8.0	8.1	8.1	8.2	8.2	—	—
	Temp	25.0	24.6	25.0	24.8	25.0	25.0	24.8	24.8	25.1	24.0	25.2	25.2	—	—
0.5 g/l	DO	8.5	8.8	8.4	8.7	8.6	8.4	8.2	8.3	8.2	7.9	8.3	7.6	—	—
	pH	8.2	8.2	8.3	7.9	8.2	8.0	8.2	8.0	8.1	7.9	8.2	8.1	—	—
	Temp	25.0	24.7	25.1	24.8	25.0	25.1	24.9	24.9	25.0	24.1	24.6	25.1	—	—
1.0 g/l	DO	8.5	8.7	8.4	8.7	8.5	8.4	8.2	8.3	8.2	8.3	8.3	7.7	—	—
	pH	8.2	8.2	8.3	7.9	8.2	8.0	8.2	8.0	8.2	7.9	8.2	8.1	—	—
	Temp	24.9	24.6	25.1	24.9	25.1	25.0	24.9	24.9	25.0	24.0	24.5	24.9	—	—
2.0 g/l	DO	8.6	8.6	8.5	8.8	8.3	8.4	8.2	8.5	8.2	8.2	8.2	7.4	—	—
	pH	8.2	8.2	8.3	7.9	8.1	8.0	8.2	8.0	8.2	7.9	8.2	8.1	—	—
	Temp	24.8	24.8	25.2	24.8	25.2	24.9	25.0	24.8	24.9	24.4	24.5	25.2	—	—
4.0 g/l	DO	8.7	8.8	—	—	—	—	—	—	—	—	—	—	—	—
	pH	8.1	8.2	—	—	—	—	—	—	—	—	—	—	—	—
	Temp	24.6	24.8	—	—	—	—	—	—	—	—	—	—	—	—

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)	325	329	322	6470	3690	3430
Alkalinity (mg/l CaCO ₃)	74	73	73	73	74	74
Hardness (mg/l CaCO ₃)	87	88	89	90	89	89

Source of Neonates

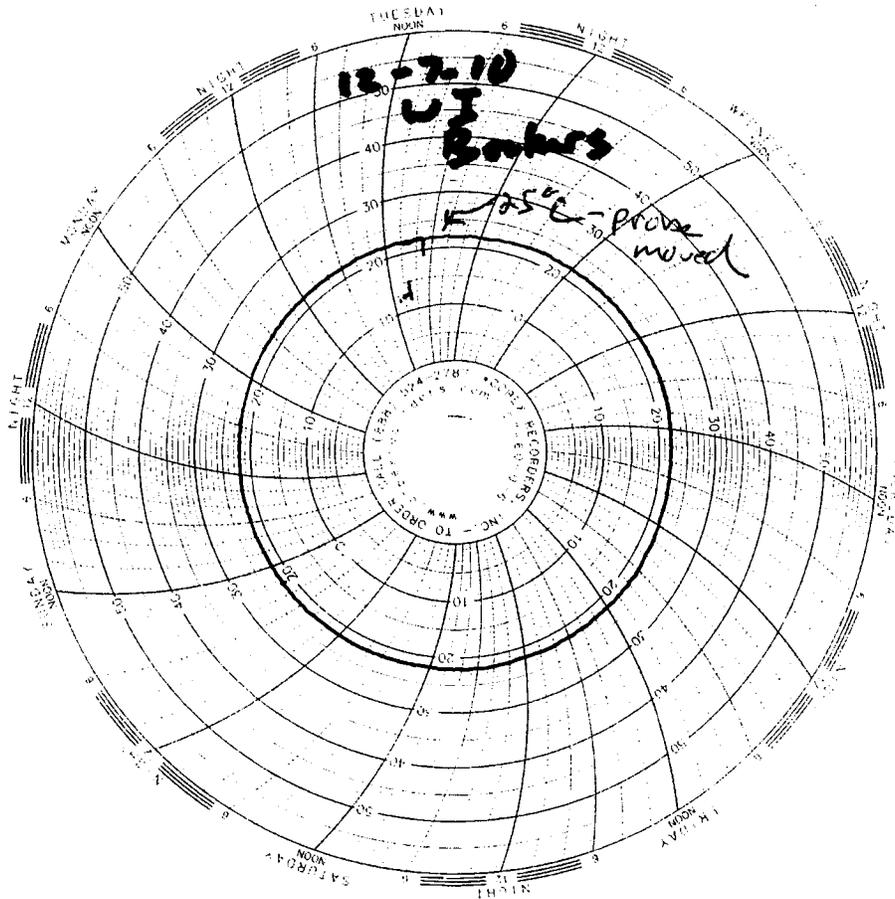
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1A	2A	3A	3B	1G	1H	2I	1J	2J	3J

Test Temperature Chart

Test No: *RT-101207*

Date Tested: *12/07/10 to 12/13/10*

Acceptable Range: *25 +/- 1°C*





EBERLINE

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January 28, 2011

Ms. Debby Wilson
Test America Irvine
17461 Derian Ave., Ste. 100
Irvine, CA 92614

**Reference: Test America-Irvine ITL1889
Eberline Analytical Report S012306-8644
Sample Delivery Group 8644**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITL1889. The sample was received on December 22, 2010.

Please call me, if you have any questions concerning the enclosed report.

Sincerely,

N. Joseph Verville
Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8644 consists of the analytical results and supporting documentation for one water sample. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

Tritium and gamma analyses were performed on the sample as received i.e. the sample was not filtered. The analytical volumes for all other analyses were subjected to a full nitric acid/hydrofluoric acid dissolution, and analyses were performed on the dissolution volume.

2.0 Quality Control

For efficiency of analysis, sample ITL1889-02 was analyzed in a common prep batch with other TA samples. The QC samples from that common prep batch were assigned to SDG 8643 and are reported herein. Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

The error for each result is an estimate of the significant random uncertainties incurred in the measurement process. These are propagated to each final result. They include the counting (Poisson) uncertainty, as well as those intrinsic errors due to carrier or tracer standardization, aliquoting, counter efficiencies, weights, or volumes. The following method errors were propagated to the count error to calculate the 2σ error (Total):

Analysis	Method Error
Gross alpha	20.6%
Gross beta	11.0%
Tritium	10.0%
Sr-90	10.4%
Ra-226	16.4%
Ra-228	10.4%
Uranium, Total	
Gamma Spec.	7.0%

4.0 Analysis Notes

- 4.1 Gross Alpha/Gross Beta Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.2 Tritium Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.3 Strontium-90 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.4 Radium-226 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.5 Radium-228 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.6 Total Uranium Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.7 Gamma Spectroscopy** – No problems were encountered during the processing of the samples. All other quality control sample results were within required control limits.

5.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."



N. Joseph Verville
Client Services Manager

1/28/11

Date

EBERLINE ANALYTICAL
SDG 8644

SDG 8644
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL1889

S U M M A R Y D A T A S E C T I O N

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Data Sheets	.	.	.	11
Method Summaries	.	.	.	12
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End of Section	.	.	.	34

UB

Prepared by _____

n. Joseph Verville

Reviewed by _____

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 01/28/11

EBERLINE ANALYTICAL

SDG 8644

SDG 8644
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract ITL1889

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DUPLICATES

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 1

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 01/28/11

EBERLINE ANALYTICAL

SDG 8644

SDG 8644
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract ITL1889

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

Page 2

SUMMARY DATA SECTION

Page 2

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 01/28/11

EBERLINE ANALYTICAL

SDG 8644

LAB SAMPLE SUMMARY

SDG 8644
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL1889

LAB	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S012300-03	Lab Control Sample		WATER				
S012300-04	Method Blank		WATER				
S012300-05	Duplicate (S012300-01)		WATER				12/18/10 17:10
S012306-01	ITL1889-02	Boeing-SSFL	WATER			ITL1889	12/19/10 14:09

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 01/28/11

EBERLINE ANALYTICAL

SDG 8644

SDG 8644
 Contact N. Joseph Verville

QC SUMMARY

Client Test America, Inc.
 Contract ITL1889

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	DEPARTMENT SAMPLE ID
8643		Method Blank	WATER					S012300-04	8643-004
		Lab Control Sample	WATER					S012300-03	8643-003
		Duplicate (S012300-01)	WATER					S012300-05	8643-005
8644	ITL1889	ITL1889-02	WATER		9.5 L		12/22/10 3	S012306-01	8644-001

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 01/28/11

EBERLINE ANALYTICAL

SDG 8644

SDG 8644
Contact N. Joseph Verville

PREP BATCH SUMMARY

Client Test America, Inc.
Contract ITL1889

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI- FIERS	
			BATCH	2σ %	CLIENT	MORE	RE	BLANK		LCS
Beta Counting										
AC	WATER	Radium-228 in Water	7258-155	10.4	1			1	1	1/0/1
SR	WATER	Strontium-90 in Water	7258-155	10.4	1			1	1	1/0/1
Gas Proportional Counting										
80A	WATER	Gross Alpha in Water	7258-155	20.6	1			1	1	1/0/1
80B	WATER	Gross Beta in Water	7258-155	11.0	1			1	1	1/0/1
Gamma Spectroscopy										
GAM	WATER	Gamma Emitters in Water	7258-155	7.0	1			1	1	1/0/1
Kinetic Phosphorimetry, ug										
U_T	WATER	Uranium, Total	7258-155		1			1	1	1/0/1
Liquid Scintillation Counting										
H	WATER	Tritium in Water	7258-155	10.0	1			1	1	1/0/1
Radon Counting										
RA	WATER	Radium-226 in Water	7258-155	16.4	1			1	1	1/0/1

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.
In counts like 'a/b/c', 'a' = QC planchets, 'b' = Originals in this SDG, 'c' = Originals in other SDGs.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 01/28/11

EBERLINE ANALYTICAL

SDG 8644

SDG 8644
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL1889

LAB WORK SUMMARY

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX			SUF-					
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S012300-03	Lab Control Sample	WATER	8643-003	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water	
			8643-003	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water	
			8643-003	AC		01/21/11	01/27/11	BW	Radium-228 in Water	
			8643-003	GAM		12/29/10	01/14/11	MWT	Gamma Emitters in Water	
			8643-003	H		01/13/11	01/18/11	BW	Tritium in Water	
			8643-003	RA		01/06/11	01/24/11	BW	Radium-226 in Water	
			8643-003	SR		01/06/11	01/26/11	BW	Strontium-90 in Water	
			8643-003	U_T		01/18/11	01/21/11	BW	Uranium, Total	
S012300-04	Method Blank	WATER	8643-004	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water	
			8643-004	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water	
			8643-004	AC		01/21/11	01/27/11	BW	Radium-228 in Water	
			8643-004	GAM		12/30/10	01/14/11	MWT	Gamma Emitters in Water	
			8643-004	H		01/13/11	01/18/11	BW	Tritium in Water	
			8643-004	RA		01/06/11	01/24/11	BW	Radium-226 in Water	
			8643-004	SR		01/06/11	01/26/11	BW	Strontium-90 in Water	
			8643-004	U_T		01/18/11	01/21/11	BW	Uranium, Total	
S012300-05 12/18/10	Duplicate (S012300-01)	WATER	8643-005	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water	
			8643-005	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water	
			8643-005	AC		01/21/11	01/27/11	BW	Radium-228 in Water	
			8643-005	GAM		12/30/10	01/14/11	MWT	Gamma Emitters in Water	
			8643-005	H		01/13/11	01/18/11	BW	Tritium in Water	
			8643-005	RA		01/06/11	01/24/11	BW	Radium-226 in Water	
			8643-005	SR		01/06/11	01/26/11	BW	Strontium-90 in Water	
			8643-005	U_T		01/18/11	01/21/11	BW	Uranium, Total	
S012306-01 12/19/10 12/22/10	ITL1889-02 Boeing-SSFL ITL1889	WATER	8644-001	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water	
			8644-001	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water	
			8644-001	AC		01/21/11	01/27/11	BW	Radium-228 in Water	
			8644-001	GAM		12/31/10	01/14/11	MWT	Gamma Emitters in Water	
			8644-001	H		01/13/11	01/18/11	BW	Tritium in Water	
			8644-001	RA		01/24/11	01/24/11	BW	Radium-226 in Water	
			8644-001	SR		01/06/11	01/26/11	BW	Strontium-90 in Water	
			8644-001	U_T		01/18/11	01/21/11	BW	Uranium, Total	

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 01/28/11

EBERLINE ANALYTICAL

SDG 8644

WORK SUMMARY, cont.

SDG 8644
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL1889

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	1			1	1	1	4
80B/80		Gross Beta in Water	900.0	1			1	1	1	4
AC		Radium-228 in Water	904.0	1			1	1	1	4
GAM		Gamma Emitters in Water	901.1	1			1	1	1	4
H		Tritium in Water	906.0	1			1	1	1	4
RA		Radium-226 in Water	903.1	1			1	1	1	4
SR		Strontium-90 in Water	905.0	1			1	1	1	4
U_T		Uranium, Total	D5174	1			1	1	1	4
TOTALS				8			8	8	8	32

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LWS
 Version 3.06
 Report date 01/28/11

EBERLINE ANALYTICAL

SDG 8644

8643-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8644</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>ITL1889</u>
Lab sample id <u>S012300-03</u>	Client sample id <u>Lab Control Sample</u>
Dept sample id <u>8643-003</u>	Material/Matrix <u>WATER</u>

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	43.6	2.4	0.575	3.00	80A	40.4	1.6	108	77-123	70-130
Gross Beta	33.7	1.5	1.23	4.00	80B	35.0	1.4	96	88-112	70-130
Tritium	2330	270	297	500	H	2550	100	91	85-115	80-120
Radium-226	46.2	1.9	0.686	1.00	RA	55.7	2.2	83	85-115	80-120
Radium-228	3.81	0.83	0.391	1.00	AC	4.63	0.19	82	80-120	60-140
Strontium-90	17.1	1.5	0.850	2.00	SR	17.5	0.70	98	86-114	80-120
Uranium, Total	58.7	6.6	0.188	1.00	U_T	56.5	2.3	104	88-112	80-120
Cobalt-60	98.6	4.6	2.03	10.0	GAM	102	4.1	97	91-109	80-120
Cesium-137	113	4.3	2.86	20.0	GAM	110	4.4	103	91-109	80-120

QC-LCS #76648

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>01/28/11</u>

EBERLINE ANALYTICAL

SDG 8644

8644-001

ITL1889-02

DATA SHEET

SDG <u>8644</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>ITL1889</u>
Lab sample id <u>S012306-01</u>	Client sample id <u>ITL1889-02</u>
Dept sample id <u>8644-001</u>	Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>
Received <u>12/22/10</u>	Collected/Volume <u>12/19/10 14:09</u> <u>9.5 L</u>
	Chain of custody id <u>ITL1889</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	10.4	1.3	0.643	3.00		80A
Gross Beta	12587472	12.8	0.86	0.852	4.00		80B
Tritium	10028178	<u>-216</u>	160	293	500	U	H
Radium-226	13982633	1.41	0.39	0.448	1.00		RA
Radium-228	15262201	0.615	0.71	0.436	1.00	J	AC
Strontium-90	10098972	-0.007	0.48	1.11	2.00	U	SR
Uranium, Total		1.24	0.13	0.019	1.00		U_T
Potassium-40	13966002	21.0	19	14.7	25.0	J	GAM
Cesium-137	10045973	U		1.33	20.0	U	GAM

DATA SHEETS

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SUMMARY DATA SECTION

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Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>01/28/11</u>

EBERLINE ANALYTICAL

SDG 8644

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER
 SDG 8644
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL1889

RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-228

Preparation batch 7258-155			
S012300-03	8643-003	Lab Control Sample	ok
S012300-04	8643-004	Method Blank	U
S012300-05	8643-005	Duplicate (S012300-01)	- U
S012306-01	8644-001	ITL1889-02	0.615 J

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7258-155 2σ prep error 10.4 % Reference Lab Notebook No. 7258 pg. 155											
S012300-03		Lab Control Sample	0.391	1.80			88	150		01/21/11 01/21	GRB-202
S012300-04		Method Blank	0.396	1.80			85	150		01/21/11 01/21	GRB-203
S012300-05		Duplicate (S012300-01)	0.435	1.80			78	150	34	01/21/11 01/21	GRB-204
S012306-01		ITL1889-02	0.436	1.80			90	150	33	01/21/11 01/21	GRB-229

Nominal values and limits from method 1.00 1.80 30-105 50 180

PROCEDURES REFERENCE 904.0
 DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD MDA 0.414 ± 0.049
 FOR 4 SAMPLES YIELD 85 ± 11

METHOD SUMMARIES

Page 1

SUMMARY DATA SECTION

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Lab id EAS
 Protocol TA
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 Form DVD-LMS
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 Report date 01/28/11

EBERLINE ANALYTICAL

SDG 8644

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Test 80B Matrix WATER
 SDG 8644
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL1889

RESULTS

LAB RAW SUP-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Gross Beta

Preparation batch 7258-155

S012300-03	80	8643-003	Lab Control Sample	ok
S012300-04	80	8643-004	Method Blank	U
S012300-05	80	8643-005	Duplicate (S012300-01)	ok J
S012306-01	80	8644-001	ITL1889-02	12.8

Nominal values and limits from method RDLs (pCi/L) 4.00

METHOD PERFORMANCE

LAB RAW SUP- MDA ALIQ PREP DILU- RESID EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION mg % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7258-155 2σ prep error 11.0 % Reference Lab Notebook No. 7258 pg. 155

S012300-03	80	Lab Control Sample	1.23	0.250				54	400				12/31/10	01/04	GRB-103
S012300-04	80	Method Blank	0.950	0.250				56	400				12/31/10	01/04	GRB-104
S012300-05	80	Duplicate (S012300-01)	0.800	0.300				14	400			17	12/31/10	01/04	GRB-109
S012306-01	80	ITL1889-02	0.852	0.300				80	400			16	12/31/10	01/04	GRB-111

Nominal values and limits from method 4.00 0.250 0-200 100 180

PROCEDURES REFERENCE 900.0
 DWP-121 Gross Alpha and Gross Beta in Drinking Water,
 rev 10

AVERAGES ± 2 SD MDA 0.958 ± 0.383
 FOR 4 SAMPLES RESIDUE 51 ± 55

METHOD SUMMARIES

Page 4

SUMMARY DATA SECTION

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EBERLINE ANALYTICAL

SDG 8644

Test H Matrix WATER
 SDG 8644
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL1889

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

RESULTS

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7258-155					
S012300-03		8643-003	Lab Control Sample	ok	
S012300-04		8643-004	Method Blank	U	
S012300-05		8643-005	Duplicate (S012300-01)	-	U
S012306-01		8644-001	ITL1889-02	U	

Nominal values and limits from method RDLs (pCi/L) 500

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7258-155 2σ prep error 10.0 % Reference Lab Notebook No. 7258 pg. 155															
S012300-03		Lab Control Sample	297	0.100			10			<u>50</u>			01/10/11	01/13	LSC-004
S012300-04		Method Blank	294	0.100			10			<u>50</u>			01/10/11	01/13	LSC-004
S012300-05		Duplicate (S012300-01)	295	0.0100			100			<u>50</u>		26	01/10/11	01/13	LSC-004
S012306-01		ITL1889-02	293	0.0100			100			<u>50</u>		25	01/10/11	01/13	LSC-004

Nominal values and limits from method 500 0.0100 100 180

PROCEDURES REFERENCE 906.0
 DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD MDA 295 ± 3.42
 FOR 4 SAMPLES YIELD 55 ± 104

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 01/28/11

EBERLINE ANALYTICAL

SDG 8644

LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix WATER
 SDG 8644
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL1889

RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-226

Preparation batch 7258-155

S012300-03	8643-003	Lab Control Sample	ok
S012300-04	8643-004	Method Blank	U
S012300-05	8643-005	Duplicate (S012300-01)	ok J
S012306-01	8644-001	ITL1889-02	1.41

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7258-155 2σ prep error 16.4 % Reference Lab Notebook No. 7258 pg. 155

S012300-03	Lab Control Sample	0.686	0.100	100	132	01/06/11	01/06	RN-009	
S012300-04	Method Blank	0.888	0.100	100	<u>70</u>	01/06/11	01/06	RN-011	
S012300-05	Duplicate (S012300-01)	0.558	0.100	100	132	19	01/06/11	01/06	RN-013
S012306-01	ITL1889-02	0.448	0.100	100	150	36	01/24/11	01/24	RN-013

Nominal values and limits from method 1.00 0.100 100 180

PROCEDURES REFERENCE 903.1
 DWP-881A Ra-226 Screening in Drinking Water, rev 6

AVERAGES ± 2 SD MDA 0.645 ± 0.378
 FOR 4 SAMPLES YIELD 100 ± 0

METHOD SUMMARIES

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EBERLINE ANALYTICAL

SDG 8644

SDG 8644
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract ITL1889

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

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EBERLINE ANALYTICAL

SDG 8644

SDG 8644
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract ITL1889

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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SUMMARY DATA SECTION

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EBERLINE ANALYTICAL
SDG 8644

SDG 8644
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL1889

REPORT GUIDE

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

REPORT GUIDES

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SUMMARY DATA SECTION

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EBERLINE ANALYTICAL

SDG 8644

SDG 8644
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract ITL1889

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

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Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 01/28/11

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DATA SHEET

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

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may not be a good estimate of the 'real' minimum detectable activity.

- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:
 1. A fixed percentage specified in the protocol.

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2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- * The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- * The second limits are protocol defined upper and lower QC limits for the recovery.

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MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

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METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

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correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- * Aliquots are underlined if less than the nominal value specified for the method.
- * Preparation factors are underlined if greater than the nominal value specified for the method.
- * Dilution factors are underlined if greater than the nominal value specified for the method.
- * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.
- * Count times are underlined if less than the nominal value

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specified for the method.

- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

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No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

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SUBCONTRACT ORDER
TestAmerica Irvine

ITL1889

8624

SENDING LABORATORY:

TestAmerica Irvine
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614
 Phone: (949) 261-1022
 Fax: (949) 260-3297
 Project Manager: Debby Wilson

RECEIVING LABORATORY:

Eberline Services
 2030 Wright Avenue
 Richmond, CA 94804
 Phone : (510) 235-2633
 Fax: (510) 235-0438
 Project Location: California
 Receipt Temperature: 7 °C Ice: (Y) / N

Analysis	Units	Due	Expires	Comments
Sample ID: ITL1889-02 (Outfall 008 (Composite) - Water) Sampled: 12/19/10 14:09				
Gamma Spec-O	mg/kg	12/23/10	12/19/11 14:09	Out St Louis, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	12/23/10	06/17/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	12/23/10	06/17/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	12/23/10	01/16/11 14:09	
Radium, Combined-O	pCi/L	12/23/10	12/19/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	12/23/10	12/19/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	12/23/10	12/19/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	12/23/10	12/19/11 14:09	Out St Louis, Boeing permit, DO NOT FILTER!

Containers Supplied:

2.5 gal Poly (I) 500 mL Amber (J)

Released By [Signature] Date/Time 12/21/10 17:00

Received By Fed Ex Date/Time 12/21/10 17:00

Released By Fed Ex Date/Time _____

Received By [Signature] Date/Time 12/22/10 12:30



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 12/22/10 1230 CoC No. ITL 1889, 1890, 1891

Container I.D. No. ICE CHESTS Requested TAT (Days) — P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [] N/A []
2. Custody seals on shipping container dated & signed? *different group in w. #* Yes [X] No [] N/A []
3. Custody seals on sample containers intact? Yes [] No [] N/A [X]
4. Custody seals on sample containers dated & signed? *3 samples* Yes [] No [] N/A [X]
5. Packing material is: Wet [] Dry [X]
6. Number of samples in shipping container: 4 Sample Matrix W
7. Number of containers per sample: _____ (Or see CoC X)
8. Samples are in correct container Yes [X] No []
9. Paperwork agrees with samples? Yes [X] No []
10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [] Broken Container [] Missing []
12. Samples are: Preserved [] Not preserved [X] pH <2 / N/A Preservative _____
13. Describe any anomalies: _____

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____

15. Inspected by [Signature] Date: 12/22/10 Time: 1400

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>All steps</u>	<u>260</u>						

Ion Chamber Ser. No. _____
Alpha Meter Ser. No. _____
Beta/Gamma Meter Ser. No. 100482

Calibration date _____
Calibration date _____
Calibration date 24 SEP 10

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APPENDIX G

Section 17

Outfall 008 – December 26, 2010

MEC^X Data Validation Report

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DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITL2485

Prepared by

MEC^x, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES
 Contract Task Order: 1261.100D.00
 Sample Delivery Group: ITL2485
 Project Manager: B. Kelly
 Matrix: Water
 QC Level: IV
 No. of Samples: 1
 No. of Reanalyses/Dilutions: 0
 Laboratory: TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 008 (Composite)	ITL2485-02	G0L290490-001, S012365-01	Water	12/26/2010 10:01:00 AM	314.0, 1613B, 900, 901.1, 903.1, 904, 905, 906, 245.1, 245.1-Diss, SM 2540D, D5174

II. Sample Management

No anomalies were observed regarding sample management. The temperature upon receipt was not noted by Eberline; however, due to the nonvolatile nature of the analytes, no qualifications were required. The remaining samples in this SDG were received at the laboratories within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples in this SDG were delivered by courier, custody seals were not required.

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 1613—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: January 19, 2011

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 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (8/02)*.

- 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 1613 QC limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The method blank had detects between the EDL and the RL for several isomers and totals. Most method blank detects were reported as EMPCs; however, due to the extent of the method blank contamination, the reviewer considered it appropriate to use the EMPCs to qualify sample results. All individual isomers detected in both the method blank and site sample were qualified as nondetected, "U" at the EDL, or at the level of

contamination in the sample. The sample totals containing one or more peaks detected in the method blank were qualified as estimated, "J," with the exception of total HpCDF, qualified as nondetected, U."

- Blank Spikes and Laboratory Control Samples: OCDD and 1,2,3,4,6,7,8-HpCDF were recovered above the control limits in the LCS; however, neither isomer was reportable in the associated sample. The remaining LCS recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- 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.
- Internal Standards Performance: The labeled standard recoveries in the sample were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating a representative number of reportable sample results. Any individual isomers reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Any totals including EMPC peaks were qualified as estimated, "J." Any detects reported between the estimated detection limit (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.

B. EPA METHOD 245.1—Mercury

Reviewed By: P. Meeks

Date Reviewed: January 14, 2011

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 245.1*, and the *National Functional Guidelines for Inorganic Data Review (7102)*.

- Holding Times: The analytical holding time, 28 days for mercury, was met.

- Tuning: Not applicable to this analysis.
- Calibration: Calibration criteria were met. Initial calibration r^2 values were ≥ 0.995 and all initial and continuing calibration recoveries were within 85-115%. CRDL/CRI recoveries were within the control limits of 70-130%.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Not applicable to this analysis.
- Blank Spikes and Laboratory Control Samples: Recoveries were within 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 not performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Internal Standards Performance: Not applicable to this analysis..
- 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. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks

Date Reviewed: January 21, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-20, Rev. 0)*, *EPA Method 314.0*, and the *National Functional Guidelines for Inorganic Data Review (10/04)*.

- Holding Times: The analytical holding time, 28 days, was met.
- Calibration: Calibration criteria were met. The initial calibration r^2 value was ≥ 0.995 and all initial and continuing calibration recoveries were within 90-110%. The IPC recovery was within the method-established control limit of 80-120%.
- Blanks: The method blank and CCBs had no detects.
- Blank Spikes and Laboratory Control Samples: The recovery was within the method-established QC limits of 85-115%.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Sample Result Verification: Calculations were verified and the sample result reported on the sample result summary was verified against the raw data. No transcription errors or calculation errors were noted. Reported nondetects are valid to the reporting limit. Perchlorate detected between the method detection limit and the reporting limit was qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit.

Due to a rhythmic noise present in the sample baseline, the perchlorate detect did not have a signal-to-noise ration of 3:1; therefore, the reviewer further estimated the sample result, "J."

- 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.

D. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks

Date Reviewed: February 8, 2011

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174, and the National Functional Guidelines for Inorganic Data Review (10/04)*.

- **Holding Times:** The tritium sample was analyzed within 180 days of collection. The remaining aliquots were prepared within the five-day analytical holding time for unpreserved samples.
- **Calibration:** The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

The gross alpha detector efficiency was less than 20%; therefore, gross alpha detected in the sample was qualified as estimated, "J." The remaining detector efficiencies were greater than 20%.

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis.

- **Blanks:** There were no analytes detected in the method blanks.
- **Blank Spikes and Laboratory Control Samples:** The recoveries were within laboratory-established control limits.
- **Laboratory Duplicates:** There were no laboratory duplicate analyses performed on the sample in this SDG.
- **Matrix Spike/Matrix Spike Duplicate:** No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- **Sample Result Verification:** An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA 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 MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- A notation in the sample preparation logbook indicated that the aliquots for radium-226, radium-228, and strontium were filtered and that the filter was digested and added to the aliquot.
- 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.

E. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: January 14, 2011

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for General Minerals (DVP-6, Rev. 0)*, *EPA Standard Method SM2540D*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: The analytical holding time, seven days from collection, was met.
- Calibration: The balance logs were acceptable.
- Blanks: TSS was not detected in the method blank.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- 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 ITL2485

Analysis Method 8650

Sample Name	Outfall 008 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	ITL2485-02	Sample Date:	12/26/2010 10:01:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total		0.677	1	0.017	pCi/L	Jb	J	DNQ

Analysis Method 900

Sample Name	Outfall 008 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	ITL2485-02	Sample Date:	12/26/2010 10:01:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	1.66	3	0.646	pCi/L	Jb	J	C, DNQ
Gross Beta	12587472	4.16	4	0.923	pCi/L			

Analysis Method 901.1

Sample Name	Outfall 008 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	ITL2485-02	Sample Date:	12/26/2010 10:01:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	1.64	pCi/L	U	U	
Potassium-40	13966002	ND	25	18.9	pCi/L	U	U	

Analysis Method 903.1

Sample Name	Outfall 008 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	ITL2485-02	Sample Date:	12/26/2010 10:01:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.303	1	0.701	pCi/L	U	U	

Analysis Method 904

Sample Name	Outfall 008 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	ITL2485-02	Sample Date:	12/26/2010 10:01:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	0.03	1	0.46	pCi/L	U	U	

Analysis Method 905

Sample Name Outfall 008 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITL2485-02 **Sample Date:** 12/26/2010 10:01:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.112	2	0.752	pCi/L	U	U	

Analysis Method 906

Sample Name Outfall 008 (Composite) **Matrix Type:** WATER **Validation Level:** IV

Lab Sample Name: ITL2485-02 **Sample Date:** 12/26/2010 10:01:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	18.3	500	275	pCi/L	U	U	

Analysis Method EPA 245.1

Sample Name Outfall 008 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: ITL2485-02 **Sample Date:** 12/26/2010 10:01:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method EPA 245.1-Diss

Sample Name Outfall 008 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: ITL2485-02 **Sample Date:** 12/26/2010 10:01:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method EPA 314.0

Sample Name Outfall 008 (Composite) **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: ITL2485-02 **Sample Date:** 12/26/2010 10:01:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	0.90	4.0	0.90	ug/l	Ja	J	DNQ, *III

Analysis Method EPA-5 1613B

Sample Name Outfall 008 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: ITL2485-02 **Sample Date:** 12/26/2010 10:01:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.00005	0.0000004	ug/L	J, Q, B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000000	ug/L	J, Q, B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000001	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000004	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000007	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000005	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000001	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000005	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000002	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000008	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000005	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000001	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000006	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000006	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000004	ug/L		U	
OCDD	3268-87-9	ND	0.0001	0.0000002	ug/L	J, B	U	B
OCDF	39001-02-0	ND	0.0001	0.0000007	ug/L	J, Q, B	U	B
Total HpCDD	37871-00-4	4.8e-006	0.00005	0.0000004	ug/L	J, Q, B	J	B, DNQ, *III
Total HpCDF	38998-75-3	ND	0.00005	0.0000001	ug/L	J, Q, B	U	B
Total HxCDD	34465-46-8	ND	0.00005	0.0000004	ug/L		U	
Total HxCDF	55684-94-1	ND	0.00005	0.0000001	ug/L		U	
Total PeCDD	36088-22-9	ND	0.00005	0.0000008	ug/L		U	
Total PeCDF	30402-15-4	ND	0.00005	0.0000005	ug/L		U	
Total TCDD	41903-57-5	ND	0.00001	0.0000007	ug/L		U	
Total TCDF	55722-27-5	ND	0.00001	0.0000004	ug/L		U	

Analysis Method SM 2540D

Sample Name Outfall 008 (Composite) **Matrix Type:** Water **Validation Level:** IV
Lab Sample Name: ITL2485-02 **Sample Date:** 12/26/2010 10:01:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	TSS	14	10	1.0	mg/l			

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APPENDIX G

Section 18

Outfall 008 – December 26, 2010

Test America Analytical Laboratory Report

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LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project: Routine Outfall 008 2010
Routine Outfall 008

Sampled: 12/26/10
Received: 12/27/10
Issued: 02/02/11 16:59

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.*

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 2°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

TestAmerica Irvine

Heather Clark For Debby Wilson
Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2485

Sampled: 12/26/10
Received: 12/27/10

**ADDITIONAL
INFORMATION:**

WATER, 1613B, Dioxins/Furans with Totals

Some analytes in this sample and the associated method blank have an ion abundance ratio that is outside of criteria. The analytes are considered as an "estimated maximum possible concentration" (EMPC) because the quantitation is based on the theoretical ion abundance ratio. Analytical results are reported with a "Q" flag.

The method blank associated with this extraction batch has a detected concentration of OCDD above the reporting limit (RL) indicating a potential high bias in the data. After discussion with the client, the data is reported with a "B" flag and no further action is required for this sample.

The laboratory control sample (LCS) associated with this extraction batch has percent recoveries for 1,2,3,4,6,7,8-HpCDF and OCDD above the established control limits indicating a potential high bias in the data. It was determined that the cause of the elevated recoveries is due the spiking solution used for the LCS had concentrated. The QC Check data is included in the sample extraction section of the raw data. After discussion with the client, the data is reported and no further action is required for this sample.

LABORATORY ID

ITL2485-01
ITL2485-02

CLIENT ID

Outfall 008 (Grab)
Outfall 008 (Composite)

MATRIX

Water
Water

Reviewed By:



TestAmerica Irvine

Heather Clark For Debby Wilson
Project Manager

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Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2485

Sampled: 12/26/10
Received: 12/27/10

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-01 (Outfall 008 (Grab) - Water)									
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	11A0059	4.7	1.3	ND	1	1/3/2011	1/3/2011	

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Heather Clark For Debby Wilson
Project Manager

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MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL2485

Sampled: 12/26/10
 Received: 12/27/10

METALS

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)									
Reporting Units: ug/l									
Mercury	EPA 245.1	10L3468	0.20	0.10	ND	1	12/30/2010	12/30/2010	
Antimony	EPA 200.8	10L3064	2.0	0.30	ND	1	12/28/2010	12/29/2010	
Cadmium	EPA 200.8	10L3064	1.0	0.10	ND	1	12/28/2010	12/29/2010	
Zinc	EPA 200.7	10L3131	20.0	6.00	15.7	1	12/28/2010	12/30/2010	Ja
Copper	EPA 200.8	10L3064	2.00	0.500	3.48	1	12/28/2010	12/29/2010	
Lead	EPA 200.8	10L3064	1.0	0.20	1.0	1	12/28/2010	12/29/2010	
Selenium	EPA 200.8	10L3064	2.0	0.50	ND	1	12/28/2010	12/29/2010	
Thallium	EPA 200.8	10L3064	1.0	0.20	ND	1	12/28/2010	12/29/2010	

TestAmerica Irvine

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Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL2485

Sampled: 12/26/10
 Received: 12/27/10

DISSOLVED METALS

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)									
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	10L3474	0.20	0.10	ND	1	12/30/2010	12/30/2010	
Antimony	EPA 200.8-Diss	10L3120	2.0	0.30	ND	1	12/28/2010	12/29/2010	
Cadmium	EPA 200.8-Diss	10L3120	1.0	0.10	ND	1	12/28/2010	12/29/2010	
Zinc	EPA 200.7-Diss	10L3118	20.0	6.00	7.03	1	12/28/2010	12/28/2010	Ja
Copper	EPA 200.8-Diss	10L3120	2.00	0.500	1.82	1	12/28/2010	12/28/2010	Ja
Lead	EPA 200.8-Diss	10L3120	1.0	0.20	ND	1	12/28/2010	12/29/2010	
Selenium	EPA 200.8-Diss	10L3120	2.0	0.50	ND	1	12/28/2010	12/29/2010	
Thallium	EPA 200.8-Diss	10L3120	1.0	0.20	ND	1	12/28/2010	12/29/2010	

TestAmerica Irvine

Heather Clark For Debby Wilson
 Project Manager

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MWH-Pasadena/Boeing
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL2485

Sampled: 12/26/10
 Received: 12/27/10

INORGANICS

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)									
Reporting Units: mg/l									
Ammonia-N (Distilled)	SM4500NH3-C	10L3337	0.500	0.500	ND	1	12/29/2010	12/29/2010	
Chloride	EPA 300.0	10L3000	0.50	0.25	13	1	12/27/2010	12/27/2010	
Total Cyanide	SM4500CN-E	10L3114	0.0050		ND	1	12/28/2010	12/28/2010	
Nitrate-N	EPA 300.0	10L3000	0.11	0.060	0.73	1	12/27/2010	12/27/2010	
Nitrite-N	EPA 300.0	10L3000	0.15	0.090	ND	1	12/27/2010	12/27/2010	
Nitrate/Nitrite-N	EPA 300.0	10L3000	0.26	0.15	0.73	1	12/27/2010	12/27/2010	
Sulfate	EPA 300.0	10L3000	0.50	0.20	11	1	12/27/2010	12/27/2010	
Total Dissolved Solids	SM2540C	10L3089	10	1.0	180	1	12/28/2010	12/28/2010	
Total Suspended Solids	SM 2540D	10L3361	10		14	1	12/29/2010	12/29/2010	
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	10L3015	4.0	0.90	0.90	1	12/28/2010	12/28/2010	Ja

TestAmerica Irvine

Heather Clark For Debby Wilson
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618 Michillinda Avenue, Suite 200
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Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2485

Sampled: 12/26/10
Received: 12/27/10

8650

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Uranium, Total	8650	8650	1	0.677	1	1/20/2011	1/20/2011	Jb

TestAmerica Irvine

Heather Clark For Debby Wilson
Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
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Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2485

Sampled: 12/26/10
Received: 12/27/10

900

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Gross Alpha	900	8650	3	1.66	1	1/6/2011	1/6/2011	Jb
Gross Beta	900	8650	4	4.16	1	1/6/2011	1/6/2011	

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Heather Clark For Debby Wilson
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Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2485

Sampled: 12/26/10
Received: 12/27/10

901.1

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Cesium-137	901.1	8650	20	ND	1	1/5/2011	1/5/2011	U
Potassium-40	901.1	8650	25	ND	1	1/5/2011	1/5/2011	U

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Routine Outfall 008
Report Number: ITL2485

Sampled: 12/26/10
Received: 12/27/10

903.1

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Radium-226	903.1	8650	1	0.303	1	1/22/2011	1/22/2011	U

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Received: 12/27/10

904

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Radium-228	904	8650	1	0.03	1	1/24/2011	1/24/2011	U

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Sampled: 12/26/10
Received: 12/27/10

905

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Strontium-90	905	8650	2	-0.112	1	1/8/2011	1/13/2011	U

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Received: 12/27/10

906

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)								
Reporting Units: pCi/L								
Tritium	906	8650	500	18.3	1	1/12/2011	1/12/2011	U

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EPA-5 1613Bx

Analyte	Method	Batch	Reporting Limit	MDL	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water)									
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	363256	0.00005	0.00000049	1.8e-006	0.98	12/29/2010	12/30/2010	J, Q, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	363256	0.00005	0.00000008	1.1e-006	0.98	12/29/2010	12/30/2010	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	363256	0.00005	0.00000011	ND	0.98	12/29/2010	12/30/2010	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	363256	0.00005	0.00000045	ND	0.98	12/29/2010	12/30/2010	
1,2,3,4,7,8-HxCDF	EPA-5 1613B	363256	0.00005	0.00000071	ND	0.98	12/29/2010	12/30/2010	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	363256	0.00005	0.00000054	ND	0.98	12/29/2010	12/30/2010	
1,2,3,6,7,8-HxCDF	EPA-5 1613B	363256	0.00005	0.00000012	ND	0.98	12/29/2010	12/30/2010	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	363256	0.00005	0.00000056	ND	0.98	12/29/2010	12/30/2010	
1,2,3,7,8,9-HxCDF	EPA-5 1613B	363256	0.00005	0.00000002	ND	0.98	12/29/2010	12/30/2010	
1,2,3,7,8-PeCDD	EPA-5 1613B	363256	0.00005	0.00000082	ND	0.98	12/29/2010	12/30/2010	
1,2,3,7,8-PeCDF	EPA-5 1613B	363256	0.00005	0.00000053	ND	0.98	12/29/2010	12/30/2010	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	363256	0.00005	0.00000011	ND	0.98	12/29/2010	12/30/2010	
2,3,4,7,8-PeCDF	EPA-5 1613B	363256	0.00005	0.00000006	ND	0.98	12/29/2010	12/30/2010	
2,3,7,8-TCDD	EPA-5 1613B	363256	0.00001	0.00000069	ND	0.98	12/29/2010	12/30/2010	
2,3,7,8-TCDF	EPA-5 1613B	363256	0.00001	0.00000042	ND	0.98	12/29/2010	12/30/2010	
OCDD	EPA-5 1613B	363256	0.00010	0.00000024	1.5e-005	0.98	12/29/2010	12/30/2010	J, B
OCDF	EPA-5 1613B	363256	0.00010	0.00000071	1.6e-006	0.98	12/29/2010	12/30/2010	J, Q, B
Total HpCDD	EPA-5 1613B	363256	0.00005	0.00000049	4.8e-006	0.98	12/29/2010	12/30/2010	J, Q, B
Total HpCDF	EPA-5 1613B	363256	0.00005	0.00000001	1.1e-006	0.98	12/29/2010	12/30/2010	J, Q, B
Total HxCDD	EPA-5 1613B	363256	0.00005	0.00000045	ND	0.98	12/29/2010	12/30/2010	
Total HxCDF	EPA-5 1613B	363256	0.00005	0.00000011	ND	0.98	12/29/2010	12/30/2010	
Total PeCDD	EPA-5 1613B	363256	0.00005	0.00000082	ND	0.98	12/29/2010	12/30/2010	
Total PeCDF	EPA-5 1613B	363256	0.00005	0.00000053	ND	0.98	12/29/2010	12/30/2010	
Total TCDD	EPA-5 1613B	363256	0.00001	0.00000073	ND	0.98	12/29/2010	12/30/2010	
Total TCDF	EPA-5 1613B	363256	0.00001	0.00000042	ND	0.98	12/29/2010	12/30/2010	

Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)	93 %
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)	80 %
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)	80 %
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)	74 %
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)	69 %
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)	83 %
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)	67 %
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)	67 %
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)	77 %
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)	77 %
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)	70 %
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	73 %
Surrogate: 13C-2,3,7,8-TCDD (25-164%)	73 %
Surrogate: 13C-2,3,7,8-TCDF (24-169%)	66 %
Surrogate: 13C-OCDD (17-157%)	74 %
Surrogate: 37C14-2,3,7,8-TCDD (35-197%)	90 %

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SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 008 (Composite) (ITL2485-02) - Water					
EPA 300.0	2	12/26/2010 10:01	12/27/2010 08:15	12/27/2010 18:00	12/27/2010 19:08
Filtration	1	12/26/2010 10:01	12/27/2010 08:15	12/27/2010 20:50	12/27/2010 20:50

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METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0059 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0059-BLK1)										
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
LCS Analyzed: 01/03/2011 (11A0059-BS1)										
Hexane Extractable Material (Oil & Grease)	20.8	5.0	mg/l	20.0		104	78-114			MNR1
LCS Dup Analyzed: 01/03/2011 (11A0059-BSD1)										
Hexane Extractable Material (Oil & Grease)	21.2	5.0	mg/l	20.0		106	78-114	2	11	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3064 Extracted: 12/28/10										
Blank Analyzed: 12/29/2010 (10L3064-BLK1)										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/29/2010 (10L3064-BS1)										
Antimony	84.8	2.0	ug/l	80.0		106	85-115			
Cadmium	83.4	1.0	ug/l	80.0		104	85-115			
Copper	83.9	2.00	ug/l	80.0		105	85-115			
Lead	83.4	1.0	ug/l	80.0		104	85-115			
Selenium	80.1	2.0	ug/l	80.0		100	85-115			
Thallium	85.9	1.0	ug/l	80.0		107	85-115			
Matrix Spike Analyzed: 12/29/2010 (10L3064-MS1) Source: ITL2444-01										
Antimony	84.1	2.0	ug/l	80.0	ND	105	70-130			
Cadmium	78.9	1.0	ug/l	80.0	ND	99	70-130			
Copper	69.9	2.00	ug/l	80.0	0.843	86	70-130			
Lead	73.2	1.0	ug/l	80.0	ND	91	70-130			
Selenium	79.1	2.0	ug/l	80.0	1.25	97	70-130			
Thallium	68.9	1.0	ug/l	80.0	ND	86	70-130			
Matrix Spike Analyzed: 12/29/2010 (10L3064-MS2) Source: ITL2444-02										
Antimony	85.3	2.0	ug/l	80.0	ND	107	70-130			
Cadmium	81.7	1.0	ug/l	80.0	ND	102	70-130			
Copper	73.4	2.00	ug/l	80.0	0.584	91	70-130			
Lead	77.7	1.0	ug/l	80.0	ND	97	70-130			
Selenium	72.3	2.0	ug/l	80.0	ND	90	70-130			
Thallium	71.0	1.0	ug/l	80.0	ND	89	70-130			

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3064 Extracted: 12/28/10										
Matrix Spike Dup Analyzed: 12/29/2010 (10L3064-MSD1)					Source: ITL2444-01					
Antimony	84.4	2.0	ug/l	80.0	ND	105	70-130	0.3	20	
Cadmium	80.6	1.0	ug/l	80.0	ND	101	70-130	2	20	
Copper	69.9	2.00	ug/l	80.0	0.843	86	70-130	0.05	20	
Lead	75.3	1.0	ug/l	80.0	ND	94	70-130	3	20	
Selenium	80.8	2.0	ug/l	80.0	1.25	99	70-130	2	20	
Thallium	70.6	1.0	ug/l	80.0	ND	88	70-130	3	20	

Batch: 10L3131 Extracted: 12/28/10

Blank Analyzed: 12/28/2010 (10L3131-BLK1)

Zinc	ND	20.0	ug/l							
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LCS Analyzed: 12/28/2010 (10L3131-BS1)

Zinc	497	20.0	ug/l	500		99	85-115			
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Matrix Spike Analyzed: 12/28/2010 (10L3131-MS1)

Zinc	498	20.0	ug/l	500	ND	100	70-130			
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Matrix Spike Analyzed: 12/28/2010 (10L3131-MS2)

Zinc	535	20.0	ug/l	500	ND	107	70-130			
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Matrix Spike Dup Analyzed: 12/28/2010 (10L3131-MSD1)

Zinc	509	20.0	ug/l	500	ND	102	70-130	2	20	
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Batch: 10L3468 Extracted: 12/30/10

Blank Analyzed: 12/30/2010 (10L3468-BLK1)

Mercury	ND	0.20	ug/l							
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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3468 Extracted: 12/30/10										
LCS Analyzed: 12/30/2010 (10L3468-BS1)										
Mercury	8.62	0.20	ug/l	8.00		108	85-115			
Matrix Spike Analyzed: 12/30/2010 (10L3468-MS1)										
					Source: ITL2438-01					
Mercury	7.80	0.20	ug/l	8.00	ND	98	70-130			
Matrix Spike Dup Analyzed: 12/30/2010 (10L3468-MSD1)										
					Source: ITL2438-01					
Mercury	7.94	0.20	ug/l	8.00	ND	99	70-130	2	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3118 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3118-BLK1)										
Zinc	ND	20.0	ug/l							
LCS Analyzed: 12/28/2010 (10L3118-BS1)										
Zinc	498	20.0	ug/l	500		100	85-115			
Matrix Spike Analyzed: 12/28/2010 (10L3118-MS1)										
					Source: ITL2272-03					
Zinc	510	20.0	ug/l	500	ND	102	70-130			
Matrix Spike Dup Analyzed: 12/28/2010 (10L3118-MSD1)										
					Source: ITL2272-03					
Zinc	511	20.0	ug/l	500	ND	102	70-130	0.1	20	
Batch: 10L3120 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3120-BLK1)										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 12/28/2010 (10L3120-BS1)										
Antimony	84.9	2.0	ug/l	80.0		106	85-115			
Cadmium	82.5	1.0	ug/l	80.0		103	85-115			
Copper	81.0	2.00	ug/l	80.0		101	85-115			
Lead	84.2	1.0	ug/l	80.0		105	85-115			
Selenium	80.5	2.0	ug/l	80.0		101	85-115			
Thallium	83.0	1.0	ug/l	80.0		104	85-115			

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3120 Extracted: 12/28/10										
Matrix Spike Analyzed: 12/28/2010 (10L3120-MS1)					Source: ITL2486-02					
Antimony	83.9	2.0	ug/l	80.0	1.55	103	70-130			
Cadmium	80.1	1.0	ug/l	80.0	ND	100	70-130			
Copper	79.5	2.00	ug/l	80.0	3.50	95	70-130			
Lead	81.7	1.0	ug/l	80.0	0.379	102	70-130			
Selenium	81.3	2.0	ug/l	80.0	ND	102	70-130			
Thallium	82.3	1.0	ug/l	80.0	ND	103	70-130			
Matrix Spike Dup Analyzed: 12/28/2010 (10L3120-MSD1)					Source: ITL2486-02					
Antimony	84.5	2.0	ug/l	80.0	1.55	104	70-130	0.7	20	
Cadmium	81.2	1.0	ug/l	80.0	ND	102	70-130	1	20	
Copper	79.6	2.00	ug/l	80.0	3.50	95	70-130	0.2	20	
Lead	82.9	1.0	ug/l	80.0	0.379	103	70-130	1	20	
Selenium	81.0	2.0	ug/l	80.0	ND	101	70-130	0.4	20	
Thallium	83.9	1.0	ug/l	80.0	ND	105	70-130	2	20	
Batch: 10L3474 Extracted: 12/30/10										
Blank Analyzed: 12/30/2010 (10L3474-BLK1)										
Mercury	ND	0.20	ug/l							
LCS Analyzed: 12/30/2010 (10L3474-BS1)										
Mercury	8.08	0.20	ug/l	8.00		101	85-115			
Matrix Spike Analyzed: 12/30/2010 (10L3474-MS1)					Source: ITL2299-07					
Mercury	8.16	0.20	ug/l	8.00	ND	102	70-130			
Matrix Spike Dup Analyzed: 12/30/2010 (10L3474-MSD1)					Source: ITL2299-07					
Mercury	8.23	0.20	ug/l	8.00	ND	103	70-130	0.9	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3000 Extracted: 12/27/10										
Blank Analyzed: 12/27/2010 (10L3000-BLK1)										
Chloride	ND	0.50	mg/l							
Nitrate-N	ND	0.11	mg/l							
Nitrite-N	ND	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
LCS Analyzed: 12/27/2010 (10L3000-BS1)										
Chloride	4.51	0.50	mg/l	5.00		90	90-110			
Nitrate-N	1.04	0.11	mg/l	1.13		92	90-110			
Nitrite-N	1.41	0.15	mg/l	1.52		93	90-110			
Sulfate	9.05	0.50	mg/l	10.0		90	90-110			
Matrix Spike Analyzed: 12/27/2010 (10L3000-MS1) Source: ITL2459-01										
Chloride	6.01	0.50	mg/l	5.00	1.62	88	80-120			
Nitrate-N	1.31	0.11	mg/l	1.13	0.309	89	80-120			
Nitrite-N	1.45	0.15	mg/l	1.52	ND	96	80-120			
Sulfate	13.5	0.50	mg/l	10.0	4.49	90	80-120			
Matrix Spike Dup Analyzed: 12/27/2010 (10L3000-MSD1) Source: ITL2459-01										
Chloride	6.15	0.50	mg/l	5.00	1.62	90	80-120	2	20	
Nitrate-N	1.40	0.11	mg/l	1.13	0.309	96	80-120	6	20	
Nitrite-N	1.51	0.15	mg/l	1.52	ND	99	80-120	4	20	
Sulfate	14.1	0.50	mg/l	10.0	4.49	97	80-120	5	20	
Batch: 10L3015 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3015-BLK1)										
Perchlorate	ND	4.0	ug/l							

TestAmerica Irvine

Heather Clark For Debby Wilson
Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL2485

Sampled: 12/26/10
 Received: 12/27/10

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3015 Extracted: 12/28/10										
LCS Analyzed: 12/28/2010 (10L3015-BS1)										
Perchlorate	22.7	4.0	ug/l	25.0		91	85-115			
Matrix Spike Analyzed: 12/28/2010 (10L3015-MS1)										
Perchlorate	23.1	4.0	ug/l	25.0	ND	92	80-120			
Matrix Spike Dup Analyzed: 12/28/2010 (10L3015-MSD1)										
Perchlorate	23.7	4.0	ug/l	25.0	ND	95	80-120	3	20	
Batch: 10L3089 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3089-BLK1)										
Total Dissolved Solids	ND	10	mg/l							
LCS Analyzed: 12/28/2010 (10L3089-BS1)										
Total Dissolved Solids	992	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 12/28/2010 (10L3089-DUP1)										
Total Dissolved Solids	1650	10	mg/l		1630			2	10	
Batch: 10L3114 Extracted: 12/28/10										
Blank Analyzed: 12/28/2010 (10L3114-BLK1)										
Total Cyanide	ND	0.0050	mg/l							
LCS Analyzed: 12/28/2010 (10L3114-BS1)										
Total Cyanide	0.190	0.0050	mg/l	0.200		95	90-110			

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 Received: 12/27/10

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3114 Extracted: 12/28/10										
Matrix Spike Analyzed: 12/28/2010 (10L3114-MS1)					Source: ITL2487-02					
Total Cyanide	0.188	0.0050	mg/l	0.200	ND	94	70-115			
Matrix Spike Dup Analyzed: 12/28/2010 (10L3114-MSD1)					Source: ITL2487-02					
Total Cyanide	0.188	0.0050	mg/l	0.200	ND	94	70-115	0.3	15	
Batch: 10L3337 Extracted: 12/29/10										
Blank Analyzed: 12/29/2010 (10L3337-BLK1)										
Ammonia-N (Distilled)	ND	0.500	mg/l							
LCS Analyzed: 12/29/2010 (10L3337-BS1)										
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0		98	80-115			
Matrix Spike Analyzed: 12/29/2010 (10L3337-MS1)					Source: ITL2485-02					
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 12/29/2010 (10L3337-MSD1)					Source: ITL2485-02					
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120	0	15	
Batch: 10L3361 Extracted: 12/29/10										
Blank Analyzed: 12/29/2010 (10L3361-BLK1)										
Total Suspended Solids	ND	10	mg/l							
LCS Analyzed: 12/29/2010 (10L3361-BS1)										
Total Suspended Solids	1000	10	mg/l	1000		100	85-115			

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Report Number: ITL2485

Sampled: 12/26/10
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3361 Extracted: 12/29/10										
Duplicate Analyzed: 12/29/2010 (10L3361-DUP1)										
Total Suspended Solids	26.0	10	mg/l		27.0			4	10	

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618 Michillinda Avenue, Suite 200
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Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2485

Sampled: 12/26/10
Received: 12/27/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 363256 Extracted: 12/29/10										
Blank Analyzed: 12/30/2010 (G0L290000256B)					Source:					
1,2,3,4,6,7,8-HpCDD	1.7e-005	0.00005	ug/L				-			J
1,2,3,4,6,7,8-HpCDF	4.2e-006	0.00005	ug/L				-			J, Q
1,2,3,4,7,8,9-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDF	9.5e-007	0.00005	ug/L				-			J, Q
1,2,3,6,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDD	1.3e-006	0.00005	ug/L				-			J, Q
1,2,3,7,8,9-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	0.00044	0.0001	ug/L				-			
OCDF	2.1e-005	0.0001	ug/L				-			J, Q
Total HpCDD	3.6e-005	0.00005	ug/L				-			J
Total HpCDF	1.4e-005	0.00005	ug/L				-			J, Q
Total HxCDD	1.3e-006	0.00005	ug/L				-			J, Q
Total HxCDF	2e-006	0.00005	ug/L				-			J, Q
Total PeCDD	ND	0.00005	ug/L				-			
Total PeCDF	ND	0.00005	ug/L				-			
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0019		ug/L	0.002		96	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0016		ug/L	0.002		80	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0017		ug/L	0.002		87	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0015		ug/L	0.002		74	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0014		ug/L	0.002		70	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0018		ug/L	0.002		89	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0014		ug/L	0.002		71	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0014		ug/L	0.002		68	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0016		ug/L	0.002		79	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0016		ug/L	0.002		80	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0015		ug/L	0.002		73	28-136			

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Heather Clark For Debby Wilson
Project Manager

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 618 Michillinda Avenue, Suite 200
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Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL2485

Sampled: 12/26/10
 Received: 12/27/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 363256 Extracted: 12/29/10										
Blank Analyzed: 12/30/2010 (G0L290000256B)					Source:					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0015		ug/L	0.002		75	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0015		ug/L	0.002		73	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0013		ug/L	0.002		64	24-169			
Surrogate: 13C-OCDD	0.0031		ug/L	0.004		78	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00077		ug/L	0.0008		96	35-197			
LCS Analyzed: 12/30/2010 (G0L290000256C)					Source:					
1,2,3,4,6,7,8-HpCDD	0.00116	0.00005	ug/L	0.001		116	70-140			
1,2,3,4,6,7,8-HpCDF	0.00125	0.00005	ug/L	0.001		125	82-122			a
1,2,3,4,7,8,9-HpCDF	0.0012	0.00005	ug/L	0.001		120	78-138			
1,2,3,4,7,8-HxCDD	0.00126	0.00005	ug/L	0.001		126	70-164			
1,2,3,4,7,8-HxCDF	0.00113	0.00005	ug/L	0.001		113	72-134			
1,2,3,6,7,8-HxCDD	0.00108	0.00005	ug/L	0.001		108	76-134			
1,2,3,6,7,8-HxCDF	0.00118	0.00005	ug/L	0.001		118	84-130			
1,2,3,7,8,9-HxCDD	0.0012	0.00005	ug/L	0.001		120	64-162			
1,2,3,7,8,9-HxCDF	0.00121	0.00005	ug/L	0.001		121	78-130			
1,2,3,7,8-PeCDD	0.00118	0.00005	ug/L	0.001		118	70-142			
1,2,3,7,8-PeCDF	0.00113	0.00005	ug/L	0.001		113	80-134			
2,3,4,6,7,8-HxCDF	0.00117	0.00005	ug/L	0.001		117	70-156			
2,3,4,7,8-PeCDF	0.00112	0.00005	ug/L	0.001		112	68-160			
2,3,7,8-TCDD	0.000227	0.00001	ug/L	0.0002		114	67-158			
2,3,7,8-TCDF	0.000218	0.00001	ug/L	0.0002		109	75-158			
OCDD	0.00297	0.0001	ug/L	0.002		149	78-144			a
OCDF	0.00208	0.0001	ug/L	0.002		104	63-170			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.002		ug/L	0.002		100	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.00166		ug/L	0.002		83	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.00183		ug/L	0.002		92	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00144		ug/L	0.002		72	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00134		ug/L	0.002		67	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00168		ug/L	0.002		84	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00135		ug/L	0.002		67	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00139		ug/L	0.002		70	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00165		ug/L	0.002		82	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00162		ug/L	0.002		81	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00139		ug/L	0.002		70	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00154		ug/L	0.002		77	13-328			

TestAmerica Irvine

Heather Clark For Debby Wilson
 Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL2485

Sampled: 12/26/10
 Received: 12/27/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 363256 Extracted: 12/29/10										
LCS Analyzed: 12/30/2010 (G0L290000256C)										
Surrogate: 13C-2,3,7,8-TCDD	0.00144		ug/L	0.002		72	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00125		ug/L	0.002		63	22-152			
Surrogate: 13C-OCDD	0.00348		ug/L	0.004		87	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000761		ug/L	0.0008		95	31-191			

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Heather Clark For Debby Wilson
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Project ID: Routine Outfall 008 2010
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Report Number: ITL2485

Sampled: 12/26/10
Received: 12/27/10

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ITL2485-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.7	15

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ITL2485-02	Ammonia-N, Titr 4500NH3-C (w/di:Ammonia-N (Distilled)	Ammonia-N	mg/l	0	0.500	10.1
ITL2485-02	Antimony-200.8	Antimony	ug/l	0.28	2.0	6
ITL2485-02	Cadmium-200.8	Cadmium	ug/l	0.043	1.0	3.1
ITL2485-02	Chloride - 300.0	Chloride	mg/l	13	0.50	150
ITL2485-02	Copper-200.8	Copper	ug/l	3.48	2.00	14
ITL2485-02	Lead-200.8	Lead	ug/l	1.04	1.0	5.2
ITL2485-02	Mercury - 245.1	Mercury	ug/l	0.041	0.20	0.13
ITL2485-02	Nitrate-N, 300.0	Nitrate-N	mg/l	0.73	0.11	8
ITL2485-02	Nitrite-N, 300.0	Nitrite-N	mg/l	0	0.15	1
ITL2485-02	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.73	0.26	8
ITL2485-02	Perchlorate 314.0 - Default	Perchlorate	ug/l	0.90	4.0	6
ITL2485-02	Selenium-200.8	Selenium	ug/l	0.43	2.0	5
ITL2485-02	Sulfate-300.0	Sulfate	mg/l	11	0.50	300
ITL2485-02	TDS - SM2540C	Total Dissolved Solids	mg/l	185	10	950
ITL2485-02	Thallium-200.8	Thallium	ug/l	0	1.0	2
ITL2485-02	Zinc-200.7	Zinc	ug/l	16	20.0	159

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DATA QUALIFIERS AND DEFINITIONS

- a** Spiked analyte recovery is outside stated control limits.
- B** Method blank contamination. The associated method blank contains the target analyte at a reportable level.
- J** Estimated result. Result is less than the reporting limit.
- Ja** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- Jb** The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- MNR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- Q** Estimated maximum possible concentration (EMPC).
- U** The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

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Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	X	X
EPA 200.7-Diss	Water	X	X
EPA 200.7	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2540C	Water	X	
SM4500CN-E	Water	X	X
SM4500NH3-C	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Aquatic Testing Laboratories-SUB *California Cert #1775*

4350 Transport Street, Unit 107 - Ventura, CA 93003

Analysis Performed: Bioassay-7 dy Chnrc

Samples: ITL2485-02

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Routine Outfall 008
Report Number: ITL2485

Sampled: 12/26/10
Received: 12/27/10

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec
Samples: ITL2485-02

Analysis Performed: Gross Alpha
Samples: ITL2485-02

Analysis Performed: Gross Beta
Samples: ITL2485-02

Analysis Performed: Level 4 Data Package
Samples: ITL2485-02

Analysis Performed: Radium, Combined
Samples: ITL2485-02

Analysis Performed: Strontium 90
Samples: ITL2485-02

Analysis Performed: Tritium
Samples: ITL2485-02

Analysis Performed: Uranium, Combined
Samples: ITL2485-02

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Routine Outfall 008
Report Number: ITL2485

Sampled: 12/26/10
Received: 12/27/10

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8650
Samples: ITL2485-02

Method Performed: 900
Samples: ITL2485-02

Method Performed: 901.1
Samples: ITL2485-02

Method Performed: 903.1
Samples: ITL2485-02

Method Performed: 904
Samples: ITL2485-02

Method Performed: 905
Samples: ITL2485-02

Method Performed: 906
Samples: ITL2485-02

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B
Samples: ITL2485-02

TestAmerica Irvine

Heather Clark For Debby Wilson
Project Manager

27L-2485

Client Name/Address: MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007		Project: Boeing-SSFL NPDES Routine Outfall 008 GRAB Stormwater at Happy Valley		ANALYSIS REQUIRED		Field readings: (Log in and include in report Temp and pH) Temp °F = <i>48.0</i> pH = <i>7.3</i> Time of readings = <i>08:20</i>		
Test America Contact: Debby Wilson		Phone Number: (626) 568-6691 Fax Number: (626) 568-6515		Oil & Grease (1664-HEM)		Comments		
Project Manager: Bronwyn Kelly Sampler: RICK BANAGH		Container Type 1L Amber	# of Cont. 2	Sampling Date/Time <i>12-26-2010</i> <i>08:20</i>	Preservative HCl	Bottle # 1A, 1B	Turn-around time: (Check) 24 Hour: _____ 48 Hour: _____ 72 Hour: _____ 10 Day: _____ Normal: _____ On Ice: <input checked="" type="checkbox"/>	
Relinquished By: <i>Rick Banagh</i> Date/Time: <i>12-26-2010</i>		Received By: <i>Rick Banagh</i> Date/Time: <i>12-26-10</i>		Composite samples will follow and are to be added to this work order.		Data Requirements: (Check) No Level IV: _____ All Level IV: _____ NPDES Level IV: <input checked="" type="checkbox"/>		
Relinquished By: <i>Rick Banagh</i> Date/Time: <i>12-26-10</i>		Received By: <i>Rick Banagh</i> Date/Time: <i>12-27-10</i>		Sample Integrity: (Check) Intact: _____ On Ice: <input checked="" type="checkbox"/>		23C		
Relinquished By: <i>Rick Banagh</i> Date/Time: <i>12-26-10</i>		Received By: <i>Rick Banagh</i> Date/Time: <i>12-27-10</i>		Data Requirements: (Check) No Level IV: _____ All Level IV: _____ NPDES Level IV: <input checked="" type="checkbox"/>		23C		

27L-2485

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: January 3, 2011

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

Laboratory No.: A-10122704-001
Sample I.D.: ITL2485-02 (Outfall 008)

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

Date Sampled: 12/26/10 - composite
Date Received: 12/27/10
Temp. Received: 5.7°C
Chlorine (TRC): 0.0 mg/l
Date Tested: 12/27/10 to 01/03/11

Sample Analysis: The following analyses were performed on your sample:
Ceriodaphnia dubia Survival and Reproduction Test (EPA Method 1002).
Attached are the test data generated from the analysis of your sample.

Result Summary:

	<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

**CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0**



Lab No.: A-10122704-001
Client/ID: Test America – ITL2485-02 (Outfall 008)

Date Tested: 12/27/10 to 01/03/11

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).
QA/QC Batch No.: RT-101207.

Endpoints: Survival and Reproduction.
Source: In-laboratory culture.
Food: .1 ml YTC, algae per day.
Test solution volume: 15 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%	23.3
100% Sample	100%	25.9
* Sample not statistically significantly less than Control.		

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 (23.3 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 = 7.4%)
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

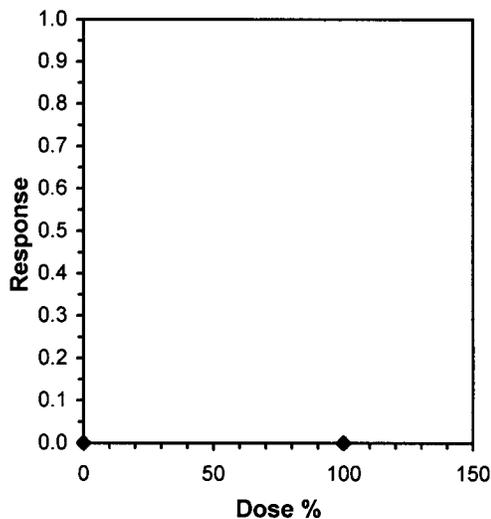
Start Date: 12/27/2010 15:00 Test ID: 10122704c Sample ID: Outfall 006
 End Date: 1/3/2011 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater
 Sample Date: 12/26/2010 10:01 Protocol: FWCH EPA Test Species: CD-Ceriodaphnia dubia
 Comments:

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 Exact P	1-Tailed Critical	Isotonic 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

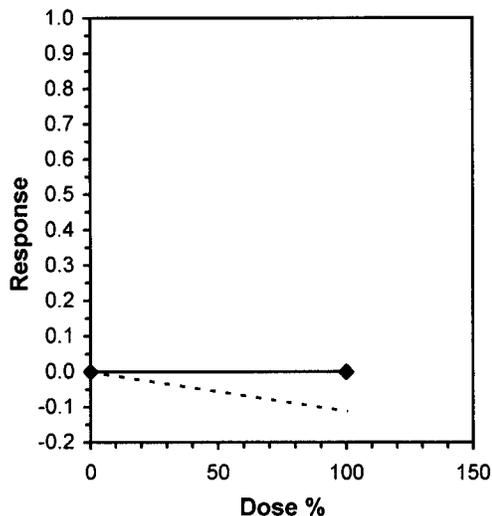
Start Date: 12/27/2010 15:00 Test ID: 10122704c Sample ID: Outfall 006
 End Date: 1/3/2011 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: SRW2-Industrial stormwater
 Sample Date: 12/26/2010 10:01 Protocol: FWCH EPA Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-%	1	2	3	4	5	6	7	8	9	10
D-Control	25.000	21.000	20.000	26.000	26.000	23.000	24.000	23.000	22.000	23.000
100	26.000	23.000	27.000	29.000	25.000	22.000	26.000	30.000	26.000	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	23.300	1.0000	23.300	20.000	26.000	8.596	10				24.600	1.0000	
100	25.900	1.1116	25.900	22.000	30.000	9.361	10	-2.615	1.734	1.724	24.600	1.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt		
Shapiro-Wilk's Test indicates normal distribution (p > 0.05)	0.97321	0.905	0.05261	-0.4309		
F-Test indicates equal variances (p = 0.58)	1.46537	6.54109				
Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences	1.7244	0.07401	33.8	4.94444	0.01755	1, 18
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 DUBIA CHRONIC BIOASSAY
EPA METHOD 1002.0 Raw Data Sheet



Lab No.: A-10122704-001

Client ID: TestAmerica - Outfall 008

Start Date: 12/27/2010

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		0 hr	24hr												
Analyst Initials:		[Signature]													
Time of Readings:		1500 1400		1400 1400		1400 1400		1400 1500		1500 1400		1400 1500		1500 1400	
Control	DO	8.3	8.8	9.0	8.7	8.8	8.6	8.3	8.1	9.3	8.2	8.3	7.9	8.3	8.2
	pH	8.2	8.2	8.2	8.1	8.2	8.2	8.3	8.2	8.2	8.2	8.3	8.2	8.2	8.2
	Temp	24.4	24.2	25.4	24.3	24.3	24.5	25.0	24.2	24.5	24.2	24.2	24.7	24.2	24.2
100%	DO	10.2	8.7	10.3	8.6	10.5	8.8	8.6	8.4	10.4	8.1	9.5	8.0	9.9	8.2
	pH	7.9	8.3	7.9	8.3	7.9	8.3	8.2	8.2	8.0	8.3	8.1	8.2	8.1	8.3
	Temp	24.4	24.0	24.5	24.8	24.4	25.1	24.3	24.3	25.7	24.3	24.3	24.6	24.2	24.3

Additional Parameters	Control	100% Sample
Conductivity (umohms)	310	233
Alkalinity (mg/l CaCO ₃)	77	82
Hardness (mg/l CaCO ₃)	88	111
Ammonia (mg/l NH ₃ -N)	0.1	0.4

Source of Neonates											
Replicate:	A	B	C	D	E	F	G	H	I	J	
Brood ID:	2A	2D	2F	3G	1J	5A	5B	6F	6H	6J	

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	0	10	[Signature]
	2	0	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]
	3	0	4	0	0	0	0	0	0	3	0	7	10	[Signature]	
	4	3	0	4	5	4	4	3	4	0	4	31	10	[Signature]	
	5	7	0	6	0	8	0	0	0	0	0	21	10	[Signature]	
	6	0	5	0	8	0	9	7	7	9	6	51	10	[Signature]	
	7	15	12	10	13	14	10	14	12	10	13	123	10	[Signature]	
	Total	25	21	20	26	26	23	24	23	22	23	233	10	[Signature]	
100%	1	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]	
	2	0	0	0	0	0	0	0	0	0	0	0	10	[Signature]	
	3	0	0	2	0	2	0	3	0	0	3	10	10	[Signature]	
	4	4	3	0	5	0	5	0	4	4	0	25	10	[Signature]	
	5	0	0	9	7	8	7	7	0	0	0	38	10	[Signature]	
	6	7	6	16	17	15	10	16	9	10	9	115	10	[Signature]	
	7	15	14	10	10	10	0	17	12	13		71	10	[Signature]	
	Total	26	23	27	29	25	22	26	30	26	25	259	10	[Signature]	

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***

SUBCONTRACT ORDER

TestAmerica Irvine

ITL2485

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Debby Wilson

RECEIVING LABORATORY:

Aquatic Testing Laboratories-SUB
4350 Transport Street, Unit 107
Ventura, CA 93003
Phone : (805) 650-0546
Fax: (805) 650-0756

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: ITL2485-02	Water	Sampled: 12/26/10 10:01		outfall 008
Bioassay-7 dy Chrnic	01/03/11 15:00	12/27/10 22:01		Cerio, EPA/821-R02-013, Sub to Aquatic tes
Containers Supplied: 1 gal Poly (K)				

Released By _____ Date _____ Received By *ARM* Date 12-27-10 14:45

Released By _____ Date _____ Received By _____ Date _____



***REFERENCE
TOXICANT
DATA***

CERIODAPHNIA CHRONIC BIOASSAY
EPA METHOD 1002.0
REFERENCE TOXICANT - NaCl



QA/QC Batch No.: RT-101207

Date Tested: 12/07/10 to 12/13/10

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: 6 days.
 Statistics: ToxCalc computer program.

RESULTS SUMMARY

Sample Concentration	Percent Survival		Mean Number of Young Per Female	
Control	100%		23.3	
0.25 g/l	100%		25.2	
0.5 g/l	100%		23.7	
1.0 g/l	100%		16.0	*
2.0 g/l	100%		2.9	*
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

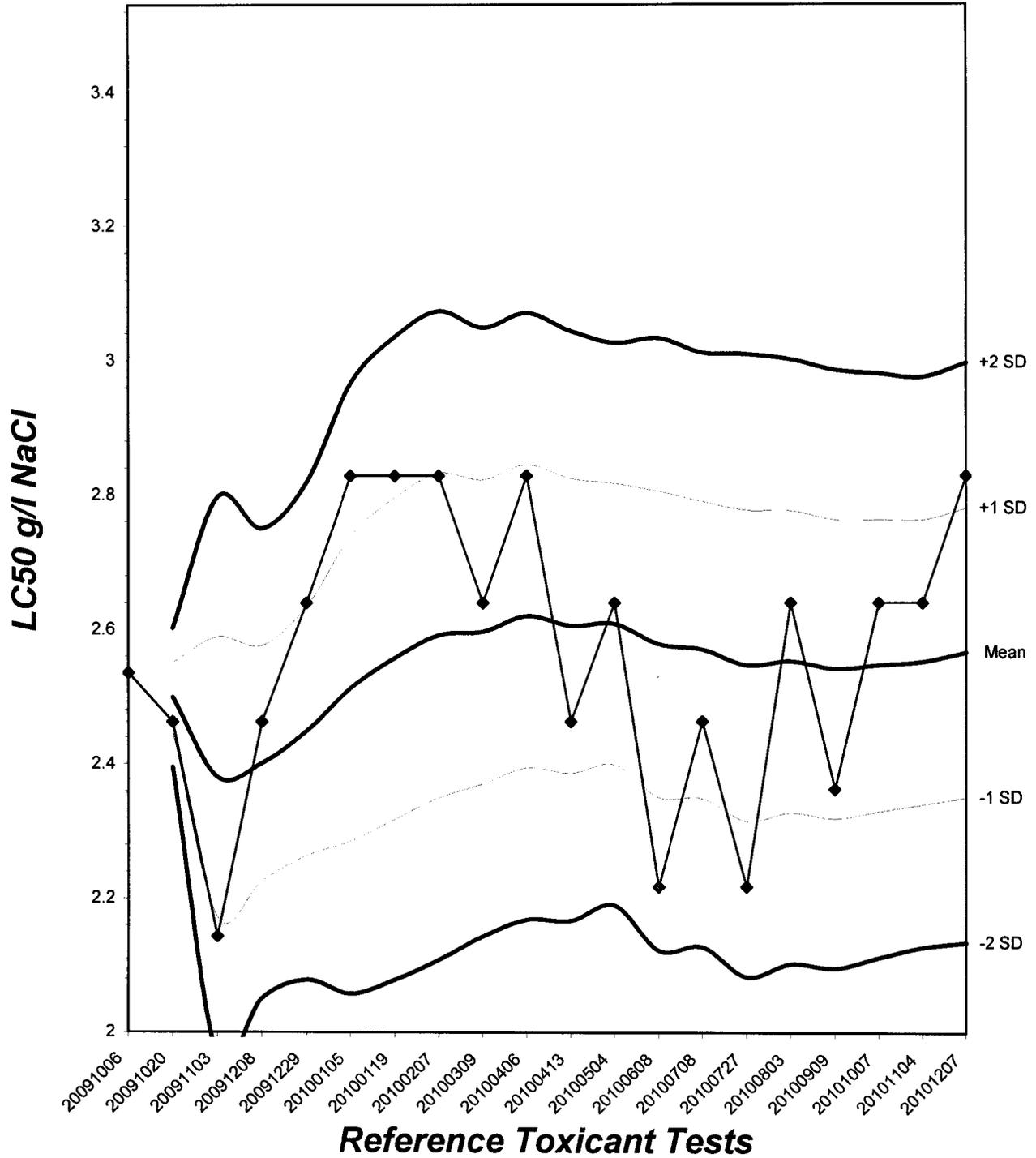
Survival LC50	2.8 g/l
Reproduction IC25	0.86 mg/l

QA/QC TEST ACCEPTABILITY

Parameter	Result
Control survival ≥80%	Pass (100% Survival)
≥15 young per surviving control female	Pass (23.3 young)
≥60% surviving controls had 3 broods	Pass (80% with 3 broods)
PMSD <47% for reproduction	Pass (PMSD = 18.9%)
Stat. sig. diff. conc. relative difference > 13%	Pass (Stat. sig. diff. conc. Relative difference = 31.3%)
Concentration response relationship acceptable	Pass (Response curve normal)

Ceriodaphnia Chronic Survival Laboratory Control Chart

CV% = 8.41



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 12/7/2010 14:00 Test ID: RT101207c Sample ID: REF-Ref Toxicant
 End Date: 12/13/2010 14:00 Lab ID: CAATL-Aquatic Testing Labs Sample Type: NACL-Sodium chloride
 Sample Date: 12/6/2010 Protocol: FWCH EPA Test Species: CD-Ceriodaphnia dubia

Comments:

Conc-gm/L	1	2	3	4	5	6	7	8	9	10
D-Control	22.000	11.000	28.000	27.000	26.000	28.000	21.000	28.000	27.000	15.000
0.25	28.000	29.000	21.000	21.000	28.000	28.000	28.000	25.000	25.000	19.000
0.5	25.000	17.000	20.000	26.000	24.000	29.000	29.000	23.000	25.000	19.000
1	10.000	10.000	20.000	22.000	20.000	11.000	15.000	12.000	24.000	16.000
2	0.000	2.000	7.000	4.000	2.000	4.000	0.000	5.000	2.000	3.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

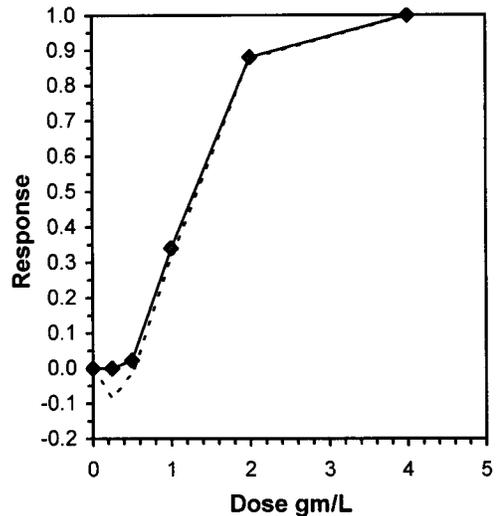
Conc-gm/L	Transform: Untransformed							t-Stat	1-Tailed Critical	MSD	Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N				Mean	N-Mean
D-Control	23.300	1.0000	23.300	11.000	28.000	25.913	10				24.250	1.0000
0.25	25.200	1.0815	25.200	19.000	29.000	14.466	10	-0.959	2.223	4.404	24.250	1.0000
0.5	23.700	1.0172	23.700	17.000	29.000	17.000	10	-0.202	2.223	4.404	23.700	0.9773
*1	16.000	0.6867	16.000	10.000	24.000	32.676	10	3.686	2.223	4.404	16.000	0.6598
*2	2.900	0.1245	2.900	0.000	7.000	75.285	10	10.299	2.223	4.404	2.900	0.1196
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 normal distribution (p > 0.05)	0.96459	0.947	-0.5938	0.09413						
Bartlett's Test indicates equal variances (p = 0.06)	8.97697	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		4.40372	0.189	860.47	19.6156	5.6E-15	4, 45

Treatments vs D-Control

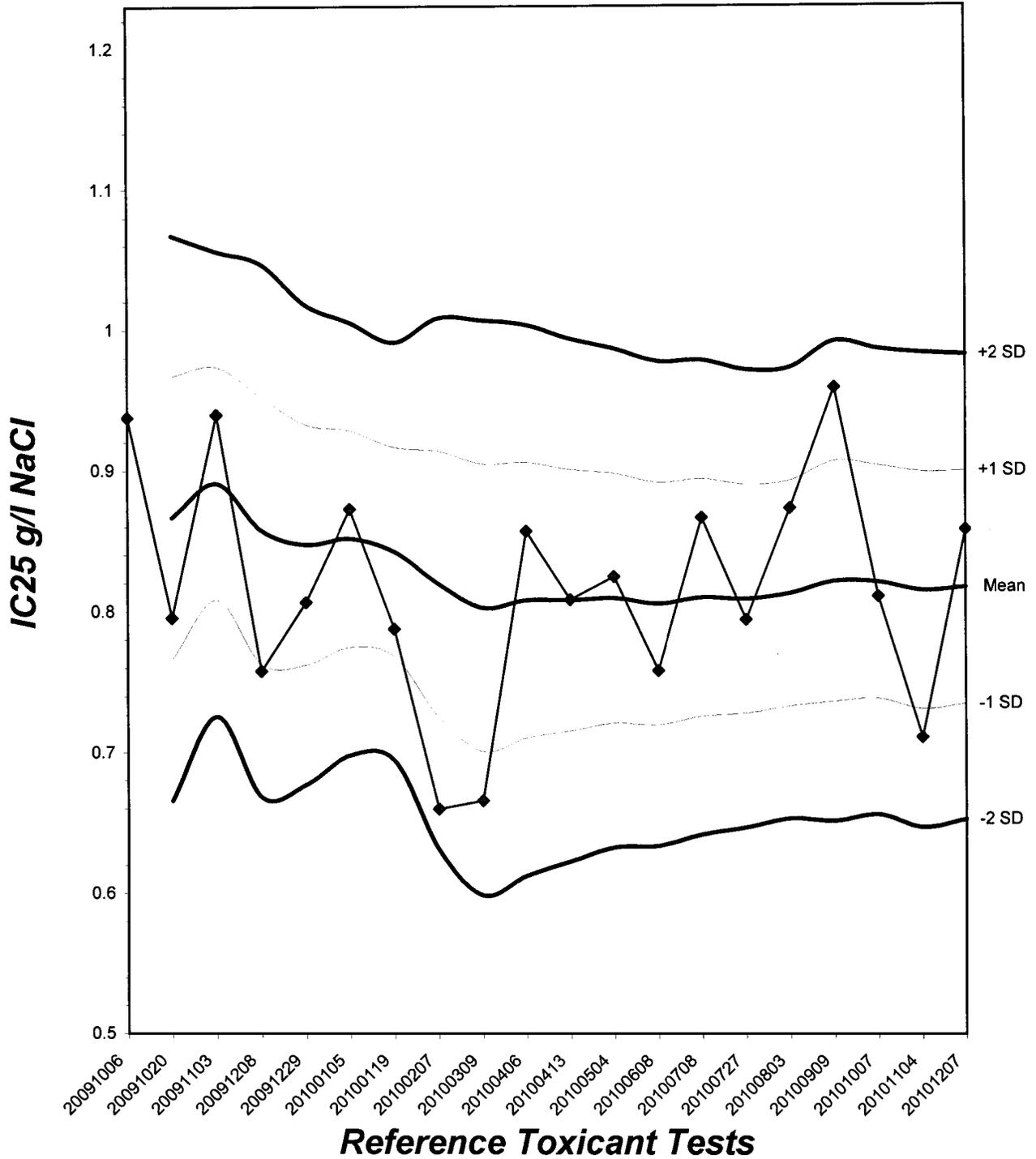
Linear Interpolation (200 Resamples)

Point	gm/L	SD	95% CL		Skew
IC05	0.5430	0.1060	0.2194	0.6041	-1.2164
IC10	0.6218	0.0833	0.4101	0.7081	-1.1699
IC15	0.7005	0.0819	0.5141	0.8292	-0.4850
IC20	0.7792	0.0859	0.5998	0.9452	0.1951
IC25	0.8580	0.0903	0.6963	1.0439	0.3636
IC40	1.1107	0.1011	0.9055	1.2772	-0.0498
IC50	1.2958	0.0936	1.0659	1.4429	-0.4534



Ceriodaphnia Chronic Reproduction Laboratory Control Chart

CV% = 10.1



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



QA/QC No.: RT-101207

Start Date: 12/07/2010

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	4	0	0	0	0	0	0	0	4	10	R
	4	3	3	0	5	4	2	3	4	4	3	31	10	R
	5	9	8	6	7	8	9	6	9	7	0	69	10	R
	6	10	0	18	15	14	17	12	15	16	12	129	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	22	11	28	27	26	28	21	28	27	15	233	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	4	0	0	0	0	0	0	4	10	R	
	4	4	3	0	4	5	4	4	3	4	4	35	10	R
	5	6	9	7	0	8	10	9	7	7	0	63	10	R
	6	18	17	10	17	15	14	15	15	14	15	150	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	28	29	21	21	28	28	28	25	25	19	252	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	4	0	0	0	0	0	4	10	R	
	4	4	3	4	0	5	4	4	3	3	4	34	10	R
	5	6	0	6	8	7	9	7	6	7	0	56	10	R
	6	15	14	10	14	12	16	18	14	15	15	143	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	25	17	20	26	24	29	29	23	25	19	237	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-101207

Start Date: 12/07/2010

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	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	4	3	4	4	5	4	3	4	4	3	38	10	R
	5	0	7	6	6	7	0	0	0	6	6	38	10	R
	6	6	0	10	12	8	7	12	8	14	7	84	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	10	10	20	22	20	11	15	12	24	16	160	10	R
2.0 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	0	0	0	0	0	0	10	R	
	4	0	0	0	0	2	0	0	2	0	0	4	10	R
	5	0	2	3	0	0	4	0	0	2	0	11	10	R
	6	0	0	4	4	0	0	0	3	0	3	14	10	R
	7	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	0	2	7	4	2	4	0	5	2	3	29	10	R
4.0 g/l	1	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-101207

Start Date: 12/07/2010

		DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
		Initial	Final												
Analyst Initials:		RW	RW												
Time of Readings:		1400	1500	1500	1400	1400	1400	1400	1300	1300	1330	1330	1400	—	—
Control	DO	8.4	8.7	8.4	8.6	8.7	8.3	8.2	8.4	8.1	7.9	8.2	7.6	—	—
	pH	8.2	8.3	8.4	7.9	8.2	8.0	8.2	8.0	8.1	7.9	8.2	8.2	—	—
	Temp	25.0	24.3	25.0	24.5	25.0	24.6	24.8	24.7	25.1	25.0	25.3	25.2	—	—
0.25 g/l	DO	8.4	8.8	8.4	8.6	8.6	8.3	8.2	8.4	8.2	7.9	8.2	7.7	—	—
	pH	8.2	8.3	8.3	7.9	8.2	8.0	8.2	8.0	8.1	8.1	8.2	8.2	—	—
	Temp	25.0	24.6	25.0	24.8	25.0	25.0	24.8	24.8	25.1	25.0	25.2	25.2	—	—
0.5 g/l	DO	8.5	8.8	8.4	8.7	8.6	8.4	8.2	8.3	8.2	7.9	8.3	7.6	—	—
	pH	8.2	8.2	8.3	7.9	8.2	8.0	8.2	8.0	8.1	7.9	8.2	8.1	—	—
	Temp	25.0	24.7	25.1	24.8	25.0	25.1	24.9	24.9	25.0	25.1	24.6	25.1	—	—
1.0 g/l	DO	8.5	8.7	8.4	8.7	8.5	8.4	8.2	8.3	8.2	8.3	8.3	7.7	—	—
	pH	8.2	8.2	8.3	7.9	8.2	8.0	8.2	8.0	8.2	7.9	8.2	8.1	—	—
	Temp	24.9	24.6	25.1	24.9	25.1	25.0	24.9	24.9	25.0	25.0	24.5	24.9	—	—
2.0 g/l	DO	8.6	8.6	8.5	8.8	8.3	8.4	8.2	8.5	8.2	8.2	8.2	7.4	—	—
	pH	8.2	8.2	8.3	7.9	8.1	8.0	8.2	8.0	8.2	7.9	8.2	8.1	—	—
	Temp	24.8	24.8	25.2	24.8	25.2	24.9	25.0	24.8	24.9	24.9	24.5	25.2	—	—
4.0 g/l	DO	8.7	8.8	—	—	—	—	—	—	—	—	—	—	—	—
	pH	8.1	8.2	—	—	—	—	—	—	—	—	—	—	—	—
	Temp	24.6	24.8	—	—	—	—	—	—	—	—	—	—	—	—

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)	325	329	322	6470	3690	3430
Alkalinity (mg/l CaCO ₃)	74	73	73	73	74	74
Hardness (mg/l CaCO ₃)	87	88	89	90	89	89

Source of Neonates

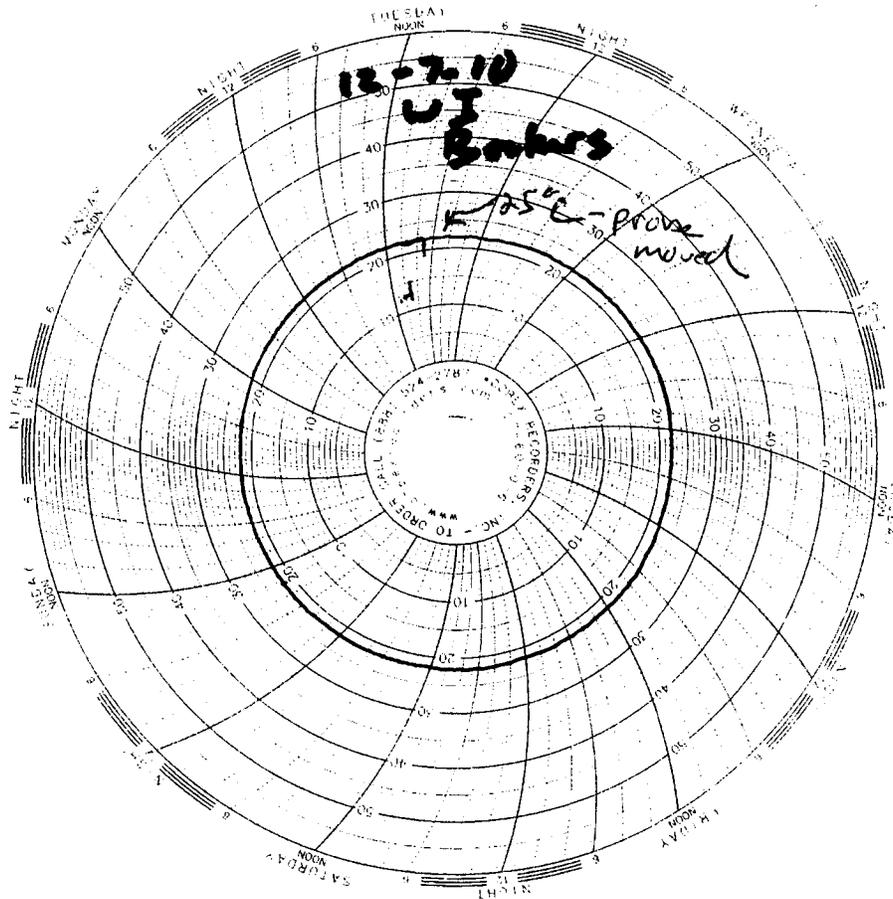
Replicate:	A	B	C	D	E	F	G	H	I	J
Brood ID:	1A	2A	3A	3B	1G	1H	2I	1J	2J	3J

Test Temperature Chart

Test No: RT-101207

Date Tested: 12/07/10 to 12/13/10

Acceptable Range: 25 \pm 1 $^{\circ}$ C





EBERLINE

SERVICES

EBERLINE ANALYTICAL CORPORATION

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February 1, 2011

Ms. Debby Wilson
Test America Irvine
17461 Derian Ave., Ste. 100
Irvine, CA 92614

**Reference: Test America-Irvine ITL2485
Eberline Analytical Report S012365-8650
Sample Delivery Group 8650**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITL2485. The sample was received on December 29, 2010.

Please call me, if you have any questions concerning the enclosed report.

Sincerely,

N. Joseph Verville
Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8650 consists of the analytical results and supporting documentation for one water sample. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

Tritium and gamma analyses were performed on the sample as received i.e. the sample was not filtered. The analytical volumes for all other analyses were subjected to a full nitric acid/hydrofluoric acid dissolution, and analyses were performed on the dissolution volume.

2.0 Quality Control

For efficiency of analysis, sample ITL2485-02 was analyzed in a common prep batch with other TA samples. The QC samples from that common prep batch were assigned to SDG 8654 and are reported herein. Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

The error for each result is an estimate of the significant random uncertainties incurred in the measurement process. These are propagated to each final result. They include the counting (Poisson) uncertainty, as well as those intrinsic errors due to carrier or tracer standardization, aliquoting, counter efficiencies, weights, or volumes. The following method errors were propagated to the count error to calculate the 2σ error (Total):

Analysis	Method Error
Gross alpha	20.6%
Gross beta	11.0%
Tritium	10.0%
Sr-90	10.4%
Ra-226	16.4%
Ra-228	10.4%
Uranium, Total	
Gamma Spec.	7.0%

4.0 Analysis Notes

- 4.1 Gross Alpha/Gross Beta Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.2 Tritium Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.3 Strontium-90 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.4 Radium-226 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.5 Radium-228 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.6 Total Uranium Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.7 Gamma Spectroscopy** – The K-40 MDA for sample ITL2489-03 (53.7 pCi/L) and the duplicate of sample ITL2489-03 (53.7 pCi/L) were greater than the required detection limit of 25 pCi/L, due to an elevated K40 background in the ROI for K40 on the detector used for analysis. No other problems were encountered during the processing of the samples. All other quality control sample results were within required control limits.

5.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."



N. Joseph Verville
Client Services Manager

2/1/11

Date

EBERLINE ANALYTICAL
SDG 8650

SDG 8650
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL2485

S U M M A R Y D A T A S E C T I O N

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UB

Prepared by _____

Reviewed by _____

njv

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-TOC
Version 3.06
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EBERLINE ANALYTICAL

SDG 8650

SDG 8650
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract ITL2485

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DUPLICATES

REPORT GUIDES

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EBERLINE ANALYTICAL

SDG 8650

SDG 8650
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract ITL2485

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

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EBERLINE ANALYTICAL

SDG 8650

SDG 8650
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL2485

LAB SAMPLE SUMMARY

LAB							CHAIN OF	
SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CUSTODY	COLLECTED	
S012365-01	ITL2485-02	Boeing - SSFL	WATER			ITL2485	12/23/10 00:00	
S012369-03	Lab Control Sample		WATER					
S012369-04	Method Blank		WATER					
S012369-05	Duplicate (S012369-01)	Boeing - SSFL	WATER				12/26/10 08:58	

LAB SUMMARY

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EBERLINE ANALYTICAL

SDG 8650

SDG 8650
 Contact N. Joseph Verville

QC SUMMARY

Client Test America, Inc.
 Contract ITL2485

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	DEPARTMENT SAMPLE ID
8650	ITL2485	ITL2485-02	WATER		10.0 L		12/29/10 6	S012365-01	8650-001
8654		Method Blank	WATER					S012369-04	8654-004
		Lab Control Sample	WATER					S012369-03	8654-003
		Duplicate (S012369-01)	WATER		10.0 L		12/29/10 3	S012369-05	8654-005

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 01/31/11

EBERLINE ANALYTICAL

SDG 8650

SDG 8650
Contact N. Joseph Verville

PREP BATCH SUMMARY

Client Test America, Inc.
Contract ITL2485

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALIFIERS
			BATCH	2σ %	CLIENT	MORE	RE BLANK	LCS	
Beta Counting									
AC	WATER	Radium-228 in Water	7271-037	10.4	1		1	1	1/0/1
SR	WATER	Strontium-90 in Water	7271-037	10.4	1		1	1	1/0/1
Gas Proportional Counting									
80A	WATER	Gross Alpha in Water	7271-037	20.6	1		1	1	1/0/1
80B	WATER	Gross Beta in Water	7271-037	11.0	1		1	1	1/0/1
Gamma Spectroscopy									
GAM	WATER	Gamma Emitters in Water	7271-037	7.0	1		1	1	1/0/1
Kinetic Phosphorimetry, ug									
U_T	WATER	Uranium, Total	7271-037		1		1	1	1/0/1
Liquid Scintillation Counting									
H	WATER	Tritium in Water	7271-037	10.0	1		1	1	1/0/1
Radon Counting									
RA	WATER	Radium-226 in Water	7271-037	16.4	1		1	1	1/0/1

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.
In counts like 'a/b/c', 'a' = QC planchets, 'b' = Originals in this SDG, 'c' = Originals in other SDGs.

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Protocol TA
Version Ver 1.0
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EBERLINE ANALYTICAL

SDG 8650

SDG 8650
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL2485

LAB WORK SUMMARY

LAB SAMPLE	CLIENT SAMPLE ID				SUF-					
COLLECTED	LOCATION	MATRIX	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
RECEIVED	CUSTODY	SAS no								
S012365-01	ITL2485-02		8650-001	80A/80		01/06/11	01/07/11	BW	Gross Alpha in Water	
12/23/10	Boeing - SSFL	WATER	8650-001	80B/80		01/06/11	01/07/11	BW	Gross Beta in Water	
12/29/10	ITL2485		8650-001	AC		01/24/11	01/25/11	BW	Radium-228 in Water	
			8650-001	GAM		01/05/11	01/11/11	MWT	Gamma Emitters in Water	
			8650-001	H		01/12/11	01/18/11	BW	Tritium in Water	
			8650-001	RA		01/22/11	01/24/11	BW	Radium-226 in Water	
			8650-001	SR		01/13/11	01/25/11	BW	Strontium-90 in Water	
			8650-001	U_T		01/20/11	01/24/11	BW	Uranium, Total	
S012369-03	Lab Control Sample		8654-003	80A/80		01/06/11	01/07/11	BW	Gross Alpha in Water	
		WATER	8654-003	80B/80		01/06/11	01/07/11	BW	Gross Beta in Water	
			8654-003	AC		01/24/11	01/25/11	BW	Radium-228 in Water	
			8654-003	GAM		01/05/11	01/11/11	MWT	Gamma Emitters in Water	
			8654-003	H		01/12/11	01/18/11	BW	Tritium in Water	
			8654-003	RA		01/22/11	01/24/11	BW	Radium-226 in Water	
			8654-003	SR		01/13/11	01/25/11	BW	Strontium-90 in Water	
			8654-003	U_T		01/20/11	01/24/11	BW	Uranium, Total	
S012369-04	Method Blank		8654-004	80A/80		01/06/11	01/07/11	BW	Gross Alpha in Water	
		WATER	8654-004	80B/80		01/06/11	01/07/11	BW	Gross Beta in Water	
			8654-004	AC		01/24/11	01/25/11	BW	Radium-228 in Water	
			8654-004	GAM		01/05/11	01/11/11	MWT	Gamma Emitters in Water	
			8654-004	H		01/12/11	01/18/11	BW	Tritium in Water	
			8654-004	RA		01/22/11	01/24/11	BW	Radium-226 in Water	
			8654-004	SR		01/13/11	01/25/11	BW	Strontium-90 in Water	
			8654-004	U_T		01/20/11	01/24/11	BW	Uranium, Total	
S012369-05	Duplicate (S012369-01)		8654-005	80A/80		01/06/11	01/07/11	BW	Gross Alpha in Water	
12/26/10	Boeing - SSFL	WATER	8654-005	80B/80		01/06/11	01/07/11	BW	Gross Beta in Water	
12/29/10			8654-005	AC		01/24/11	01/25/11	BW	Radium-228 in Water	
			8654-005	GAM		01/05/11	01/11/11	MWT	Gamma Emitters in Water	
			8654-005	H		01/12/11	01/18/11	BW	Tritium in Water	
			8654-005	RA		01/22/11	01/24/11	BW	Radium-226 in Water	
			8654-005	SR		01/13/11	01/25/11	BW	Strontium-90 in Water	
			8654-005	U_T		01/20/11	01/24/11	BW	Uranium, Total	

WORK SUMMARY

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EBERLINE ANALYTICAL

SDG 8650

WORK SUMMARY, cont.

SDG 8650
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL2485

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	1			1	1	1		4
80B/80		Gross Beta in Water	900.0	1			1	1	1		4
AC		Radium-228 in Water	904.0	1			1	1	1		4
GAM		Gamma Emitters in Water	901.1	1			1	1	1		4
H		Tritium in Water	906.0	1			1	1	1		4
RA		Radium-226 in Water	903.1	1			1	1	1		4
SR		Strontium-90 in Water	905.0	1			1	1	1		4
U_T		Uranium, Total	D5174	1			1	1	1		4
TOTALS				8			8	8	8		32

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EBERLINE ANALYTICAL

SDG 8650

8654-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8650</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>ITL2485</u>
Lab sample id <u>S012369-03</u>	Client sample id <u>Lab Control Sample</u>
Dept sample id <u>8654-003</u>	Material/Matrix <u>WATER</u>

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	36.6	2.4	0.654	3.00	80A	40.4	1.6	91	80-120	70-130
Gross Beta	33.6	1.6	1.58	4.00	80B	35.0	1.4	96	88-112	70-130
Tritium	2420	260	271	500	H	2550	100	95	86-114	80-120
Radium-226	58.4	1.9	0.577	1.00	RA	55.7	2.2	105	82-118	80-120
Radium-228	4.53	0.30	0.432	1.00	AC	4.62	0.18	98	87-113	60-140
Strontium-90	17.9	1.4	0.597	2.00	SR	17.5	0.70	102	86-114	80-120
Uranium, Total	59.8	7.2	0.174	1.00	U_T	62.5	2.5	96	88-112	80-120
Cobalt-60	94.8	4.6	2.23	10.0	GAM	102	4.1	93	91-109	80-120
Cesium-137	114	4.2	2.92	20.0	GAM	110	4.4	104	91-109	80-120

QC-LCS #76728

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>01/31/11</u>

EBERLINE ANALYTICAL

SDG 8650

8654-005

ITL2489-03

DUPLICATE

SDG <u>8650</u>	Client <u>Test America, Inc.</u>	
Contact <u>N. Joseph Verville</u>	Contract <u>ITL2485</u>	
DUPLICATE	ORIGINAL	
Lab sample id <u>S012369-05</u>	Lab sample id <u>S012369-01</u>	Client sample id <u>ITL2489-03</u>
Dept sample id <u>8654-005</u>	Dept sample id <u>8654-001</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
	Received <u>12/29/10</u>	Collected/Volume <u>12/26/10 08:58</u> <u>10.0 L</u>
		Chain of custody id <u>ITL2489</u>

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	1.65	0.42	0.342	3.00	J	80A	1.89	0.47	0.400	J	14	69	0.6
Gross Beta	3.05	0.59	0.819	4.00	J	80B	3.06	0.63	0.885	J	0	48	0
Tritium	44.4	160	267	500	U	H	-40.3	150	270	U	-		0.8
Radium-226	-0.022	0.31	0.592	1.00	U	RA	0.097	0.36	0.653	U	-		0.5
Radium-228	0.035	0.16	0.446	1.00	U	AC	0.109	0.17	0.456	U	-		0.6
Strontium-90	-0.005	0.29	0.693	2.00	U	SR	0.222	0.33	0.684	U	-		1.0
Uranium, Total	0.164	0.023	0.017	1.00	J	U_T	0.177	0.022	0.017	J	8	28	0.8
Potassium-40	U		<u>53.7</u>	25.0	U	GAM	U		<u>53.7</u>	U	-		0
Cesium-137	U		2.68	20.0	U	GAM	U		2.68	U	-		0

QC-DUP#1 76730

DUPLICATES

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Version <u>Ver 1.0</u>
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Version <u>3.06</u>
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EBERLINE ANALYTICAL

SDG 8650

8650-001

ITL2485-02

DATA SHEET

SDG <u>8650</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>ITL2485</u>
Lab sample id <u>S012365-01</u>	Client sample id <u>ITL2485-02</u>
Dept sample id <u>8650-001</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
Received <u>12/29/10</u>	Collected/Volume <u>12/23/10 00:00</u> <u>10.0 L</u>
	Chain of custody id <u>ITL2485</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	1.66	0.54	0.646	3.00	J	80A
Gross Beta	12587472	4.16	0.66	0.923	4.00		80B
Tritium	10028178	18.3	160	275	500	U	H
Radium-226	13982633	0.303	0.42	0.701	1.00	U	RA
Radium-228	15262201	0.030	0.17	0.460	1.00	U	AC
Strontium-90	10098972	-0.112	0.30	0.752	2.00	U	SR
Uranium, Total		0.677	0.077	0.017	1.00	J	U_T
Potassium-40	13966002	U		18.9	25.0	U	GAM
Cesium-137	10045973	U		1.64	20.0	U	GAM

DATA SHEETS

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Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>01/31/11</u>

EBERLINE ANALYTICAL

SDG 8650

Test AC Matrix WATER
SDG 8650
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL2485

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-228

Preparation batch 7271-037

S012365-01	8650-001	ITL2485-02	U
S012369-03	8654-003	Lab Control Sample	ok
S012369-04	8654-004	Method Blank	U
S012369-05	8654-005	Duplicate (S012369-01)	- U

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-		
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7271-037 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.037

S012365-01	ITL2485-02	0.460	1.80				70		150			32	01/24/11	01/24	GRB-221
S012369-03	Lab Control Sample	0.432	1.80				74		150				01/24/11	01/24	GRB-230
S012369-04	Method Blank	0.473	1.80				73		150				01/24/11	01/24	GRB-231
S012369-05	Duplicate (S012369-01)	0.446	1.80				73		150			29	01/24/11	01/24	GRB-232

Nominal values and limits from method 1.00 1.80 30-105 50 180

PROCEDURES REFERENCE 904.0
DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD MDA 0.453 ± 0.035
FOR 4 SAMPLES YIELD 72 ± 3

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 01/31/11

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LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER
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Client Test America, Inc.
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RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Strontium-90

Preparation batch 7271-037

S012365-01	8650-001	ITL2485-02	U
S012369-03	8654-003	Lab Control Sample	ok
S012369-04	8654-004	Method Blank	U
S012369-05	8654-005	Duplicate (S012369-01)	- U

Nominal values and limits from method RDLs (pCi/L) 2.00

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7271-037 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.037

S012365-01	ITL2485-02	0.752	0.500	67	50	21	01/08/11	01/13	GRB-223
S012369-03	Lab Control Sample	0.597	0.500	83	50		01/08/11	01/13	GRB-222
S012369-04	Method Blank	0.666	0.500	82	50		01/08/11	01/13	GRB-201
S012369-05	Duplicate (S012369-01)	0.693	0.500	72	50	18	01/08/11	01/13	GRB-202

Nominal values and limits from method 2.00 0.500 30-105 50 180

PROCEDURES REFERENCE 905.0
 DWP-380 Strontium in Drinking Water, rev 8

AVERAGES ± 2 SD MDA 0.677 ± 0.129
 FOR 4 SAMPLES YIELD 76 ± 16

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 01/31/11

EBERLINE ANALYTICAL

SDG 8650

Test 80B Matrix WATER

SDG 8650

Contact N. Joseph Verville

Client Test America, Inc.

Contract TTL2485

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

RESULTS

LAB RAW SUF- SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Gross Beta

Preparation batch 7271-037

Table with 5 columns: Sample ID, Test Fix, Planchet, Client Sample ID, Gross Beta. Rows include S012365-01 (4.16), S012369-03 (ok), S012369-04 (U), and S012369-05 (ok J).

Nominal values and limits from method RDLs (pCi/L) 4.00

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- RESID EFF COUNT FWHM DRIFT DAYS ANAL- SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION mg % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7271-037 2σ prep error 11.0 % Reference Lab Notebook No. 7271 pg.037

Table with 13 columns: Sample ID, Test Fix, Client Sample ID, MDA, Aliq, Prep, Dilu, Resid, Eff, Count, FWHM, Drift, Days. Rows include S012365-01, S012369-03, S012369-04, and S012369-05.

Nominal values and limits from method 4.00 0.250 0-200 100 180

PROCEDURES REFERENCE 900.0 DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD MDA 1.08 ± 0.682 FOR 4 SAMPLES RESIDUE 53 ± 29

Lab id EAS Protocol TA Version Ver 1.0 Form DVD-LMS Version 3.06 Report date 01/31/11

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LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Test GAM Matrix WATER
 SDG 8650
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Client Test America, Inc.
 Contract ITL2485

RESULTS

LAB	RAW	SUF-				
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID		Cobalt-60	Cesium-137
Preparation batch 7271-037						
S012365-01		8650-001	ITL2485-02			U
S012369-03		8654-003	Lab Control Sample	ok		ok
S012369-04		8654-004	Method Blank			U
S012369-05		8654-005	Duplicate (S012369-01)			- U
Nominal values and limits from method			RDLs (pCi/L)		10.0	20.0

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7271-037			2σ prep error 7.0 %			Reference Lab Notebook No. 7271 pg.037									
S012365-01		ITL2485-02		2.00								13	01/05/11	01/05	MB,01,00
S012369-03		Lab Control Sample		2.00									01/05/11	01/05	MB,02,00
S012369-04		Method Blank		2.00									01/05/11	01/05	01,04,00
S012369-05		Duplicate (S012369-01)		2.00								10	01/05/11	01/05	MB,05,00
Nominal values and limits from method				6.00	2.00					400					180

PROCEDURES REFERENCE 901.1
 DWP-100 Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 01/31/11

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SDG 8650

Test U T Matrix WATER
 SDG 8650
 Contact N. Joseph Verville

Client Test America, Inc.
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LAB METHOD SUMMARY

URANIUM, TOTAL
 KINETIC PHOSPHORIMETRY, UG

RESULTS

LAB	RAW	SUF-		Uranium,	
SAMPLE ID	TEST	FIX	PLANCHET	CLIENT SAMPLE ID	Total
Preparation batch 7271-037					
S012365-01			8650-001	ITL2485-02	0.677 J
S012369-03			8654-003	Lab Control Sample	ok
S012369-04			8654-004	Method Blank	U
S012369-05			8654-005	Duplicate (S012369-01)	ok J

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB	RAW	SUF-	MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS	ANAL-				
SAMPLE ID	TEST	FIX	CLIENT	SAMPLE ID	pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR
Preparation batch 7271-037			2σ prep error		Reference Lab Notebook No. 7271 pg.037												
S012365-01			ITL2485-02		0.017	0.0200								28	01/20/11	01/20	KPA-001
S012369-03			Lab Control Sample		0.174	0.0200									01/20/11	01/20	KPA-001
S012369-04			Method Blank		0.017	0.0200									01/20/11	01/20	KPA-001
S012369-05			Duplicate (S012369-01)		0.017	0.0200								25	01/20/11	01/20	KPA-001

Nominal values and limits from method 1.00 0.0200 180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD MDA 0.056 ± 0.157
 FOR 4 SAMPLES YIELD _____ ± _____

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 Protocol TA
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 Report date 01/31/11

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LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H Matrix WATER
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RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Tritium

Preparation batch 7271-037

S012365-01	8650-001	ITL2485-02	U
S012369-03	8654-003	Lab Control Sample	ok
S012369-04	8654-004	Method Blank	U
S012369-05	8654-005	Duplicate (S012369-01)	- U

Nominal values and limits from method RDLs (pCi/L) 500

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7271-037 2σ prep error 10.0 % Reference Lab Notebook No. 7271 pg.037

S012365-01	ITL2485-02	275	0.0100	100	<u>50</u>	20	01/12/11	01/12	LSC-004
S012369-03	Lab Control Sample	271	0.100	10	<u>50</u>		01/12/11	01/12	LSC-004
S012369-04	Method Blank	272	0.100	10	<u>50</u>		01/12/11	01/12	LSC-004
S012369-05	Duplicate (S012369-01)	267	0.0100	100	<u>50</u>	17	01/12/11	01/12	LSC-004

Nominal values and limits from method 500 0.0100 100 180

PROCEDURES REFERENCE 906.0
 DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD MDA 271 ± 6.61
 FOR 4 SAMPLES YIELD 55 ± 104

Lab id EAS
 Protocol TA
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 Form DVD-LMS
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 Report date 01/31/11

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Contract ITL2485

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

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DATA SHEET

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

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DATA SHEET

may not be a good estimate of the 'real' minimum detectable activity.

- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

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SUMMARY DATA SECTION

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:

1. A fixed percentage specified in the protocol.

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DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- * The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- * The second limits are protocol defined upper and lower QC limits for the recovery.

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MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

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METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

REPORT GUIDES

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SUMMARY DATA SECTION

Page 31

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 01/31/11

EBERLINE ANALYTICAL

SDG 8650

SDG 8650
 Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.
 Contract ITL2485

METHOD SUMMARY

correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
 - * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.
- MDAs are underlined if greater than the printed RDL.
- * Aliquots are underlined if less than the nominal value specified for the method.
 - * Preparation factors are underlined if greater than the nominal value specified for the method.
 - * Dilution factors are underlined if greater than the nominal value specified for the method.
 - * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
 - * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
 - * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.
 - * Count times are underlined if less than the nominal value

Lab id EAS
 Protocol TA
 Version Ver 1.0
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 Version 3.06
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GUIDE, cont.

Client Test America, Inc.
Contract ITL2485

METHOD SUMMARY

specified for the method.

- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

REPORT GUIDES

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Lab id EAS
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GUIDE, cont.

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METHOD SUMMARY

No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

REPORT GUIDES

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SUMMARY DATA SECTION

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Protocol TA
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SUBCONTRACT ORDER
TestAmerica Irvine

ITL2485

8650

SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Debby Wilson

RECEIVING LABORATORY:

Eberline Services
2030 Wright Avenue
Richmond, CA 94804
Phone: (510) 235-2633
Fax: (510) 235-0438
Project Location: California
Receipt Temperature: _____ °C Ice: Y / N

Analysis	Units	Due	Expires	Comments
Sample ID: ITL2485-02 (Outfall 008 (Composite) - Water) Sampled: 12/23/10 00:00				
Gamma Spec-O	mg/kg	01/03/11	12/23/11 00:00	Out St Louis, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	01/03/11	06/21/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	01/03/11	06/21/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	01/03/11	01/20/11 00:00	
Radium, Combined-O	pCi/L	01/03/11	12/23/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	01/03/11	12/23/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	01/03/11	12/23/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	01/03/11	12/23/11 00:00	Out St Louis, Boeing permit, DO NOT FILTER!

Containers Supplied:

2.5 gal Poly (I) 500 mL Amber (J)

Stephanie Aida
Released By
FED EX
Released By

12/28/10 17:00
Date/Time
12/29/10
Date/Time

Fedex
Received By
Alex Klevy
Received By
12/28/10 17:00
Date/Time
12/29/10 10:00
Date/Time



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 12/29/10 10:00 CoC No. ITL 2272, 2485-2486, 2487, 2488, 2489

Container I.D. No. N/A Requested TAT (Days) STAND P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [] N/A []
2. Custody seals on shipping container dated & signed? Yes [✓] No [] N/A []
3. Custody seals on sample containers intact? Yes [✓] No [] N/A []
4. Custody seals on sample containers dated & signed? Yes [] No [] N/A [✓]
5. Packing material is: Wet [] Dry [] N/A [✓]
6. Number of samples in shipping container: 8 Sample Matrix WATER
7. Number of containers per sample: ≠ (Or see CoC ✓)
8. Samples are in correct container Yes [✓] No []
9. Paperwork agrees with samples? Yes [✓] No [✓]
10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels [✓]
11. Samples are: In good condition [✓] Leaking [] Broken Container [] Missing []
12. Samples are: Preserved [✓] Not preserved [] pH 2 Preservative HNO3
13. Describe any anomalies:
two client TRIP BLANKS not included
in CoC
14. Was P.M. notified of any anomalies? Yes [] No [] Date _____
15. Inspected by JHK Date: 12/29/10 Time: 14:20

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>All samples</u>	<u>< 60</u>						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 24 Sep 2010

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APPENDIX G

Section 19

Outfall 008 – December 29 & 30, 2010

MEC^X Data Validation Report

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DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITL2723

Prepared by

MEC^x, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Boeing SSFL NPDES
 Contract Task Order: 1261.100D.00
 Sample Delivery Group: ITL2723
 Project Manager: B. Kelly
 Matrix: Water
 QC Level: IV
 No. of Samples: 1
 No. of Reanalyses/Dilutions: 0
 Laboratory: TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 008 (Composite)	ITL2723-02	G0L310428-001, S101003-01	Water	12/30/2010 1:57:00 AM	245.1, 245.1-Diss, 900, 901.1, 903.1, 904, 905, 906, 1613B, SM 2540D, D5174

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at TestAmerica-Irvine and TestAmerica-West Sacramento below the control limit; however, the samples were not noted to be frozen or damaged. The temperature upon receipt was not noted by Eberline; however, due to the nonvolatile nature of the analytes, no qualifications were required. The remaining samples were received at the laboratories within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples in this SDG were delivered by courier, custody seals were not required. If necessary, the client ID was added to the sample result summary by the reviewer.

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 1613—Dioxin/Furans

Reviewed By: L. Calvin

Date Reviewed: January 21, 2011

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 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review (8/02)*.

- 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 1613 QC limits for all standards.
 - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.
- Blanks: The method blank had detects between the EDL and the RL for several isomers and totals. Most method blank detects were reported as EMPCs; however, due to the extent of the method blank contamination, the reviewer considered it appropriate to use the EMPCs to qualify sample results. All individual isomers detected in both the method blank and site sample were qualified as nondetected, "U" at the EDL, or at the level of

contamination in the sample. The sample totals containing one or more peaks detected in the method blank were qualified as estimated, "J."

- Blank Spikes and Laboratory Control Samples: LCS recoveries were within the acceptance criteria listed in Table 6 of Method 1613.
- 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.
- Internal Standards Performance: The labeled standard recoveries in the sample were within the acceptance criteria listed in Table 7 of Method 1613.
- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.
- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating a representative number of reportable sample results. Any individual isomers reported as EMPCs previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. Remaining isomers reported as EMPCs were qualified as estimated nondetects, "UJ," at the level of the EMPC. Any totals including EMPC peaks were qualified as estimated, "J." Any detects reported between the estimated detection limit (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.

The case narrative for this SDG noted that some results were reported below the EDL based on retention time and signal to noise ratio >2.5; however, the reviewer noted that all reported results were above the EDL.

B. EPA METHOD 245.1—Mercury

Reviewed By: P. Meeks

Date Reviewed: January 20, 2011

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 245.1*, and the *National Functional Guidelines for Inorganic Data Review (7/02)*.

- Holding Times: The analytical holding time, 28 days for mercury, was met.
- Tuning: Not applicable to this analysis.
- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥ 0.995 and all initial and continuing calibration recoveries were within 85-115%. CRA recoveries were within the control limits of 70-130%.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Not applicable to this analysis.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Internal Standards Performance: Not applicable to this analysis.
- 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 — Radionuclides

Reviewed By: P. Meeks

Date Reviewed: February 8, 2011

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174, and the National Functional Guidelines for Inorganic Data Review (10/04)*.

- **Holding Times:** The tritium sample was analyzed within 180 days of collection. The remaining aliquots were prepared within the five-day analytical holding time for unpreserved samples.
- **Calibration:** The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

The gross alpha detector efficiency was less than 20%; therefore, gross alpha detected in the sample was qualified as estimated, "J." The remaining detector efficiencies were greater than 20%.

The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis.

- **Blanks:** There were no analytes detected in the method blanks.
- **Blank Spikes and Laboratory Control Samples:** The recoveries were within laboratory-established control limits.
- **Laboratory Duplicates:** There were no laboratory duplicate analyses were performed on the sample in this SDG.
- **Matrix Spike/Matrix Spike Duplicate:** No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.
- **Sample Result Verification:** An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA 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 MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

A notation in the sample preparation logbook indicated that the aliquots for radium-226, radium-228, and strontium were filtered and that the filter was digested and added to the aliquot.

- 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.

D. VARIOUS EPA METHODS—General Minerals

Reviewed By: P. Meeks

Date Reviewed: January 20, 2011

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 Method 2540D*, and the *National Functional Guidelines for Inorganic Data Review (7102)*.

- Holding Times: The analytical holding time, seven days from collection, was met.
- Calibration: The balance logs were acceptable.
- Blanks: TSS was not detected in the method blank.
- Blank Spikes and Laboratory Control Samples: The recovery was within 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 not performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.
- 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 ITL2723

Analysis Method 8656

Sample Name	Outfall 008 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	ITL2723-02	Sample Date:	12/30/2010 1:57:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total	NA	0.749	1	0.017	pCi/L	Jb	J	DNQ

Analysis Method 900

Sample Name	Outfall 008 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	ITL2723-02	Sample Date:	12/30/2010 1:57:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Alpha	12587461	0.928	3	0.566	pCi/L	Jb	J	C, DNQ
Gross Beta	12587472	3.17	4	0.844	pCi/L	Jb	J	DNQ

Analysis Method 901.1

Sample Name	Outfall 008 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	ITL2723-02	Sample Date:	12/30/2010 1:57:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	ND	20	1.54	pCi/L	U	U	
Potassium-40	13966002	ND	25	39.2	pCi/L	U	U	

Analysis Method 903.1

Sample Name	Outfall 008 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	ITL2723-02	Sample Date:	12/30/2010 1:57:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.214	1	0.754	pCi/L	U	U	

Analysis Method 904

Sample Name	Outfall 008 (Composite)	Matrix Type:	WATER	Validation Level:	IV			
Lab Sample Name:	ITL2723-02	Sample Date:	12/30/2010 1:57:00 AM					
Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-228	15262201	-0.069	1	0.79	pCi/L	U	U	

Analysis Method 905

Sample Name Outfall 008 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: ITL2723-02 **Sample Date:** 12/30/2010 1:57:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.221	2	2.24	pCi/L	U	U	

Analysis Method 906

Sample Name Outfall 008 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: ITL2723-02 **Sample Date:** 12/30/2010 1:57:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	31.2	500	314	pCi/L	U	U	

Analysis Method EPA 245.1

Sample Name Outfall 008 (Composite) **Matrix Type:** Water **Validation Level:** IV
Lab Sample Name: ITL2723-02 **Sample Date:** 12/30/2010 1:57:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method EPA 245.1-Diss

Sample Name Outfall 008 (Composite) **Matrix Type:** Water **Validation Level:** IV
Lab Sample Name: ITL2723-02 **Sample Date:** 12/30/2010 1:57:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

Analysis Method EPA-5 1613B

Sample Name Outfall 008 (Composite) **Matrix Type:** WATER **Validation Level:** IV
Lab Sample Name: ITL2723-02 **Sample Date:** 12/30/2010 1:57:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.00005	0.0000008	ug/L	J, B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000003	ug/L	J, Q, B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000004	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.00005	0.0000007	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.00005	0.0000003	ug/L	J, Q	UJ	*III
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000003	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000002	ug/L	J, Q	UJ	*III
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000003	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000003	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000007	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000003	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000002	ug/L	J, Q	UJ	*III
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000003	ug/L	J, Q	UJ	*III
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000004	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000004	ug/L		U	
Total HpCDD	37871-00-4	2e-005	0.00005	0.0000008	ug/L	J, B	J	B, DNQ
Total HpCDF	38998-75-3	5.4e-006	0.00005	0.0000003	ug/L	J, Q, B	J	B, DNQ, *III
Total HxCDD	34465-46-8	1.1e-006	0.00005	0.0000004	ug/L	J	J	DNQ
Total HxCDF	55684-94-1	2.8e-006	0.00005	0.0000003	ug/L	J, Q	J	DNQ, *III
Total PeCDD	36088-22-9	ND	0.00005	0.0000007	ug/L		U	
Total PeCDF	30402-15-4	3.6e-007	0.00005	0.0000003	ug/L	J, Q	J	DNQ, *III
Total TCDD	41903-57-5	1.9e-006	0.00001	0.0000004	ug/L	J, Q	J	DNQ, *III
Total TCDF	55722-27-5	ND	0.00001	0.0000004	ug/L		U	

Analysis Method SM 2540D

Sample Name Outfall 008 (Composite) **Matrix Type:** Water **Validation Level:** IV
Lab Sample Name: ITL2723-02 **Sample Date:** 12/30/2010 1:57:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	TSS	12	10	1.0	mg/l			

APPENDIX G

Section 20

Outfall 008 – December 29 & 30, 2010

Test America Analytical Laboratory Report

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LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project: Routine Outfall 008 2010
Routine Outfall 008

Sampled: 12/29/10-12/30/10
Received: 12/29/10
Issued: 02/05/11 11:42

NELAP #01108CA California ELAP#2706 CSDLAC #10256 AZ #AZ0671 NV #CA01531

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.

This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 4°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the TestAmerica Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

ADDITIONAL INFORMATION: WATER, 1613B, Dioxins/Furans with Totals

Some analytes in this sample and the associated method blank have an ion abundance ratio that is outside of criteria. The analytes are considered as an "estimated maximum possible concentration" (EMPC) because the quantitation is based on the theoretical ion abundance ratio. Analytical results are reported with a "Q" flag.

LABORATORY ID

ITL2723-01

ITL2723-02

CLIENT ID

Outfall 008 (Grab)

Outfall 008 (Composite)

MATRIX

Water

Water

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.

Reviewed By:



TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-01 (Outfall 008 (Grab) - Water)					Sampled: 12/29/10				
Reporting Units: mg/l									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	11A0167	1.3	4.7	ND	1	DA	01/04/11	

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Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL2723

Sampled: 12/29/10-12/30/10
 Received: 12/29/10

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water)					Sampled: 12/30/10				
Reporting Units: ug/l									
Mercury	EPA 245.1	11A0093	0.10	0.20	ND	1	DB	01/03/11	
Antimony	EPA 200.8	11A0078	0.30	2.0	ND	1	RDC	01/03/11	
Cadmium	EPA 200.8	11A0078	0.10	1.0	ND	1	RDC	01/03/11	
Zinc	EPA 200.7	11A0077	6.00	20.0	11.8	1	VRS	01/03/11	Ja
Copper	EPA 200.8	11A0078	0.500	2.00	2.69	1	RDC	01/03/11	
Lead	EPA 200.8	11A0078	0.20	1.0	0.87	1	RDC	01/03/11	Ja
Selenium	EPA 200.8	11A0078	0.50	2.0	ND	1	RDC	01/03/11	
Thallium	EPA 200.8	11A0078	0.20	1.0	ND	1	RDC	01/03/11	

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 Routine Outfall 008
 Report Number: ITL2723

Sampled: 12/29/10-12/30/10
 Received: 12/29/10

DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont.					Sampled: 12/30/10				
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	11A0094	0.10	0.20	ND	1	DB	01/03/11	
Antimony	EPA 200.8-Diss	11A0064	0.30	2.0	ND	1	RDC	01/03/11	
Cadmium	EPA 200.8-Diss	11A0064	0.10	1.0	ND	1	RDC	01/03/11	
Zinc	EPA 200.7-Diss	11A0063	6.00	20.0	ND	1	VRS	01/03/11	
Copper	EPA 200.8-Diss	11A0064	0.500	2.00	2.03	1	RDC	01/03/11	
Lead	EPA 200.8-Diss	11A0064	0.20	1.0	ND	1	RDC	01/03/11	
Selenium	EPA 200.8-Diss	11A0064	0.50	2.0	ND	1	RDC	01/03/11	
Thallium	EPA 200.8-Diss	11A0064	0.20	1.0	ND	1	RDC	01/03/11	

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Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL2723

Sampled: 12/29/10-12/30/10
 Received: 12/29/10

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont.					Sampled: 12/30/10				
Reporting Units: mg/l									
Ammonia-N (Distilled)	SM4500NH3-C	11A0108	0.500	0.500	ND	1	TMK	01/03/11	
Chloride	EPA 300.0	10L3421	0.25	0.50	16	1	NN	12/30/10	
Nitrate-N	EPA 300.0	10L3421	0.060	0.11	0.79	1	NN	12/30/10	
Nitrite-N	EPA 300.0	10L3421	0.090	0.15	ND	1	NN	12/30/10	
Nitrate/Nitrite-N	EPA 300.0	10L3421	0.15	0.26	0.79	1	NN	12/30/10	
Sulfate	EPA 300.0	10L3421	0.20	0.50	15	1	NN	12/30/10	
Total Dissolved Solids	SM2540C	11A0030	1.0	10	200	1	MC	01/03/11	
Total Suspended Solids	SM 2540D	10L3516	1.0	10	12	1	DC	12/30/10	

Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water)

Sampled: 12/30/10

Reporting Units: ug/l

Perchlorate	EPA 314.0	11A0037	0.90	4.0	ND	1	MN	01/03/11	
Total Cyanide	SM4500CN-E	11A0118	2.2	5.0	ND	1	HH	01/03/11	

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Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

8656

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont.					Sampled: 12/30/10				
Reporting Units: pCi/L									
Uranium, Total	8656	8656		1	0.749	1	CSS	01/20/11	Jb

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Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL2723

Sampled: 12/29/10-12/30/10
 Received: 12/29/10

900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont.					Sampled: 12/30/10				
Reporting Units: pCi/L									
Gross Alpha	900	8656		3	0.928	1	KT	01/11/11	Jb
Gross Beta	900	8656		4	3.17	1	KT	01/11/11	Jb

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Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont.					Sampled: 12/30/10				
Reporting Units: pCi/L									
Cesium-137	901.1	8656		20	ND	1	LS	01/11/11	U
Potassium-40	901.1	8656		25	ND	1	LS	01/11/11	U

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Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont.					Sampled: 12/30/10				
Reporting Units: pCi/L									
Radium-226	903.1	8656		1	0.214	1	TM	01/21/11	U

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Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont.					Sampled: 12/30/10				
Reporting Units: pCi/L									
Radium-228	904	8656		1	-0.069	1	ASM	01/26/11	U

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Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont.					Sampled: 12/30/10				
Reporting Units: pCi/L									
Strontium-90	905	8656		2	-0.221	1	ASM	01/26/11	U

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Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont.					Sampled: 12/30/10				
Reporting Units: pCi/L									
Tritium	906	8656		500	31.2	1	JO	01/18/11	U

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ITL2723 <Page 12 of 32>

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Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

EPA-5 1613Bx

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) - cont.					Sampled: 12/30/10				
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	1012285	0.00000084	0.00005	8.5e-006	0.98	GV	01/13/11	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	1012285	0.00000034	0.00005	2.4e-006	0.98	GV	01/13/11	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	1012285	0.00000045	0.00005	ND	0.98	GV	01/13/11	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	1012285	0.00000077	0.00005	ND	0.98	GV	01/13/11	
1,2,3,4,7,8-HxCDF	EPA-5 1613B	1012285	0.00000031	0.00005	4.2e-007	0.98	GV	01/13/11	J, Q
1,2,3,6,7,8-HxCDD	EPA-5 1613B	1012285	0.00000038	0.00005	ND	0.98	GV	01/13/11	
1,2,3,6,7,8-HxCDF	EPA-5 1613B	1012285	0.00000029	0.00005	4.5e-007	0.98	GV	01/13/11	J, Q
1,2,3,7,8,9-HxCDD	EPA-5 1613B	1012285	0.00000039	0.00005	ND	0.98	GV	01/13/11	
1,2,3,7,8,9-HxCDF	EPA-5 1613B	1012285	0.00000034	0.00005	ND	0.98	GV	01/13/11	
1,2,3,7,8-PeCDD	EPA-5 1613B	1012285	0.00000077	0.00005	ND	0.98	GV	01/13/11	
1,2,3,7,8-PeCDF	EPA-5 1613B	1012285	0.00000031	0.00005	ND	0.98	GV	01/13/11	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	1012285	0.00000028	0.00005	4.1e-007	0.98	GV	01/13/11	J, Q
2,3,4,7,8-PeCDF	EPA-5 1613B	1012285	0.00000033	0.00005	3.6e-007	0.98	GV	01/13/11	J, Q
2,3,7,8-TCDD	EPA-5 1613B	1012285	0.00000043	0.00001	ND	0.98	GV	01/13/11	
2,3,7,8-TCDF	EPA-5 1613B	1012285	0.00000004	0.00001	ND	0.98	GV	01/13/11	
OCDD	EPA-5 1613B	1012285	0.0000018	0.0001	8.4e-005	0.98	GV	01/13/11	J, B
OCDF	EPA-5 1613B	1012285	0.00000057	0.0001	6.6e-006	0.98	GV	01/13/11	J, B
Total HpCDD	EPA-5 1613B	1012285	0.00000084	0.00005	2e-005	0.98	GV	01/13/11	J, B
Total HpCDF	EPA-5 1613B	1012285	0.00000039	0.00005	5.4e-006	0.98	GV	01/13/11	J, Q, B
Total HxCDD	EPA-5 1613B	1012285	0.0000004	0.00005	1.1e-006	0.98	GV	01/13/11	J
Total HxCDF	EPA-5 1613B	1012285	0.0000003	0.00005	2.8e-006	0.98	GV	01/13/11	J, Q
Total PeCDD	EPA-5 1613B	1012285	0.00000077	0.00005	ND	0.98	GV	01/13/11	
Total PeCDF	EPA-5 1613B	1012285	0.00000032	0.00005	3.6e-007	0.98	GV	01/13/11	J, Q
Total TCDD	EPA-5 1613B	1012285	0.00000043	0.00001	1.9e-006	0.98	GV	01/13/11	J, Q
Total TCDF	EPA-5 1613B	1012285	0.00000004	0.00001	ND	0.98	GV	01/13/11	

Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)	97 %
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)	101 %
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)	103 %
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)	77 %
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)	91 %
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)	106 %
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)	96 %
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)	94 %
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)	85 %
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)	86 %
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)	95 %
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	89 %
Surrogate: 13C-2,3,7,8-TCDD (25-164%)	82 %
Surrogate: 13C-2,3,7,8-TCDF (24-169%)	79 %
Surrogate: 13C-OCDD (17-157%)	104 %
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)	93 %

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Project Manager

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Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

SHORT HOLD TIME DETAIL REPORT

	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
Sample ID: Outfall 008 (Composite) (ITL2723-02) - Water					
EPA 300.0	2	12/30/2010 01:57	12/29/2010 16:55	12/30/2010 14:00	12/30/2010 20:05
Filtration	1	12/30/2010 01:57	12/29/2010 16:55	12/30/2010 20:31	12/30/2010 20:32

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METHOD BLANK/QC DATA

HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0167 Extracted: 01/04/11										
Blank Analyzed: 01/04/2011 (11A0167-BLK1)										
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
LCS Analyzed: 01/04/2011 (11A0167-BS1)										
Hexane Extractable Material (Oil & Grease)	18.8	5.0	mg/l	20.0		94	78-114			MNR1
LCS Dup Analyzed: 01/04/2011 (11A0167-BSD1)										
Hexane Extractable Material (Oil & Grease)	19.5	5.0	mg/l	20.0		98	78-114	4	11	

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METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0077 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0077-BLK1)										
Zinc	ND	20.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0077-BS1)										
Zinc	514	20.0	ug/l	500		103	85-115			
Matrix Spike Analyzed: 01/03/2011 (11A0077-MS1) Source: ITL2721-03										
Zinc	511	20.0	ug/l	500	ND	102	70-130			
Matrix Spike Dup Analyzed: 01/03/2011 (11A0077-MSD1) Source: ITL2721-03										
Zinc	518	20.0	ug/l	500	ND	104	70-130	1	20	
Batch: 11A0078 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0078-BLK1)										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0078-BS1)										
Antimony	81.8	2.0	ug/l	80.0		102	85-115			
Cadmium	82.6	1.0	ug/l	80.0		103	85-115			
Copper	81.0	2.00	ug/l	80.0		101	85-115			
Lead	82.3	1.0	ug/l	80.0		103	85-115			
Selenium	81.7	2.0	ug/l	80.0		102	85-115			
Thallium	82.3	1.0	ug/l	80.0		103	85-115			

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METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0078 Extracted: 01/03/11										
Matrix Spike Analyzed: 01/03/2011 (11A0078-MS1)					Source: ITL2724-02					
Antimony	82.2	2.0	ug/l	80.0	1.69	101	70-130			
Cadmium	81.3	1.0	ug/l	80.0	ND	102	70-130			
Copper	79.8	2.00	ug/l	80.0	3.47	95	70-130			
Lead	90.9	1.0	ug/l	80.0	1.50	112	70-130			
Selenium	81.1	2.0	ug/l	80.0	ND	101	70-130			
Thallium	89.1	1.0	ug/l	80.0	ND	111	70-130			
Matrix Spike Dup Analyzed: 01/03/2011 (11A0078-MSD1)					Source: ITL2724-02					
Antimony	83.3	2.0	ug/l	80.0	1.69	102	70-130	1	20	
Cadmium	80.5	1.0	ug/l	80.0	ND	101	70-130	1	20	
Copper	78.5	2.00	ug/l	80.0	3.47	94	70-130	2	20	
Lead	85.2	1.0	ug/l	80.0	1.50	105	70-130	6	20	
Selenium	81.4	2.0	ug/l	80.0	ND	102	70-130	0.4	20	
Thallium	84.0	1.0	ug/l	80.0	ND	105	70-130	6	20	
Batch: 11A0093 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0093-BLK1)										
Mercury	ND	0.20	ug/l							
LCS Analyzed: 01/03/2011 (11A0093-BS1)										
Mercury	7.96	0.20	ug/l	8.00		99	85-115			
Matrix Spike Analyzed: 01/03/2011 (11A0093-MS1)					Source: ITL2721-03					
Mercury	8.05	0.20	ug/l	8.00	ND	101	70-130			
Matrix Spike Dup Analyzed: 01/03/2011 (11A0093-MSD1)					Source: ITL2721-03					
Mercury	8.07	0.20	ug/l	8.00	ND	101	70-130	0.2	20	

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METHOD BLANK/QC DATA

DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0063 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0063-BLK1)										
Zinc	ND	20.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0063-BS1)										
Zinc	496	20.0	ug/l	500		99	85-115			
Matrix Spike Analyzed: 01/03/2011 (11A0063-MS1)										
Zinc	786	20.0	ug/l	500	287	100	70-130			
Matrix Spike Analyzed: 01/03/2011 (11A0063-MS2)										
Zinc	520	20.0	ug/l	500	6.20	103	70-130			
Matrix Spike Dup Analyzed: 01/03/2011 (11A0063-MSD1)										
Zinc	794	20.0	ug/l	500	287	101	70-130	1	20	
Batch: 11A0064 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0064-BLK1)										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Selenium	ND	2.0	ug/l							
Thallium	ND	1.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0064-BS1)										
Antimony	79.3	2.0	ug/l	80.0		99	85-115			
Cadmium	79.2	1.0	ug/l	80.0		99	85-115			
Copper	82.4	2.00	ug/l	80.0		103	85-115			
Lead	80.2	1.0	ug/l	80.0		100	85-115			
Selenium	80.6	2.0	ug/l	80.0		101	85-115			
Thallium	81.3	1.0	ug/l	80.0		102	85-115			

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DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0064 Extracted: 01/03/11										
Matrix Spike Analyzed: 01/03/2011 (11A0064-MS1)					Source: ITL2724-02					
Antimony	81.6	2.0	ug/l	80.0	1.58	100	70-130			
Cadmium	81.2	1.0	ug/l	80.0	ND	102	70-130			
Copper	84.8	2.00	ug/l	80.0	3.50	102	70-130			
Lead	82.3	1.0	ug/l	80.0	0.404	102	70-130			
Selenium	79.6	2.0	ug/l	80.0	ND	100	70-130			
Thallium	81.7	1.0	ug/l	80.0	ND	102	70-130			
Matrix Spike Analyzed: 01/03/2011 (11A0064-MS2)					Source: ITL2299-02					
Antimony	80.1	2.0	ug/l	80.0	ND	100	70-130			
Cadmium	81.6	1.0	ug/l	80.0	ND	102	70-130			
Copper	81.2	2.00	ug/l	80.0	1.94	99	70-130			
Lead	82.1	1.0	ug/l	80.0	0.209	102	70-130			
Selenium	79.5	2.0	ug/l	80.0	ND	99	70-130			
Thallium	82.1	1.0	ug/l	80.0	ND	103	70-130			
Matrix Spike Dup Analyzed: 01/03/2011 (11A0064-MSD1)					Source: ITL2724-02					
Antimony	79.3	2.0	ug/l	80.0	1.58	97	70-130	3	20	
Cadmium	77.9	1.0	ug/l	80.0	ND	97	70-130	4	20	
Copper	82.5	2.00	ug/l	80.0	3.50	99	70-130	3	20	
Lead	81.6	1.0	ug/l	80.0	0.404	102	70-130	0.8	20	
Selenium	78.6	2.0	ug/l	80.0	ND	98	70-130	1	20	
Thallium	80.8	1.0	ug/l	80.0	ND	101	70-130	1	20	
Batch: 11A0094 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0094-BLK1)										
Mercury	ND	0.20	ug/l							

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DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0094 Extracted: 01/03/11										
LCS Analyzed: 01/03/2011 (11A0094-BS1)										
Mercury	8.07	0.20	ug/l	8.00		101	85-115			
Matrix Spike Analyzed: 01/03/2011 (11A0094-MS1)										
					Source: ITL2721-04					
Mercury	8.25	0.20	ug/l	8.00	ND	103	70-130			
Matrix Spike Dup Analyzed: 01/03/2011 (11A0094-MSD1)										
					Source: ITL2721-04					
Mercury	8.13	0.20	ug/l	8.00	ND	102	70-130	1	20	

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 10L3421 Extracted: 12/30/10										
Blank Analyzed: 12/30/2010 (10L3421-BLK1)										
Chloride	ND	0.50	mg/l							
Nitrate-N	ND	0.11	mg/l							
Nitrite-N	ND	0.15	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
LCS Analyzed: 12/30/2010 (10L3421-BS1)										
Chloride	5.09	0.50	mg/l	5.00		102	90-110			M-3
Nitrate-N	1.13	0.11	mg/l	1.13		100	90-110			
Nitrite-N	1.58	0.15	mg/l	1.52		104	90-110			
Sulfate	10.2	0.50	mg/l	10.0		102	90-110			
Matrix Spike Analyzed: 12/30/2010 (10L3421-MS1) Source: ITL2761-02										
Nitrate-N	6.04	0.55	mg/l	1.13	4.86	105	80-120			MHA
Nitrite-N	1.92	0.75	mg/l	1.52	ND	126	80-120			MI
Sulfate	34.6	2.5	mg/l	10.0	25.2	94	80-120			
Matrix Spike Dup Analyzed: 12/30/2010 (10L3421-MSD1) Source: ITL2761-02										
Nitrate-N	6.37	0.55	mg/l	1.13	4.86	134	80-120	5	20	MHA
Nitrite-N	1.92	0.75	mg/l	1.52	ND	126	80-120	0.02	20	MI
Sulfate	34.5	2.5	mg/l	10.0	25.2	93	80-120	0.3	20	
Batch: 10L3516 Extracted: 12/30/10										
Blank Analyzed: 12/30/2010 (10L3516-BLK1)										
Total Suspended Solids	ND	10	mg/l							

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<u>Batch: 10L3516 Extracted: 12/30/10</u>										
LCS Analyzed: 12/30/2010 (10L3516-BS1)										
Total Suspended Solids	996	10	mg/l	1000		100	85-115			
Duplicate Analyzed: 12/30/2010 (10L3516-DUP1)										
Total Suspended Solids	3.00	10	mg/l		3.00			0	10	Ja
<u>Batch: 11A0030 Extracted: 01/03/11</u>										
Blank Analyzed: 01/03/2011 (11A0030-BLK1)										
Total Dissolved Solids	ND	10	mg/l							
LCS Analyzed: 01/03/2011 (11A0030-BS1)										
Total Dissolved Solids	986	10	mg/l	1000		99	90-110			
Duplicate Analyzed: 01/03/2011 (11A0030-DUP1)										
Total Dissolved Solids	580	10	mg/l		582			0.3	10	
<u>Batch: 11A0037 Extracted: 01/03/11</u>										
Blank Analyzed: 01/03/2011 (11A0037-BLK1)										
Perchlorate	ND	4.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0037-BS1)										
Perchlorate	24.1	4.0	ug/l	25.0		96	85-115			
Matrix Spike Analyzed: 01/03/2011 (11A0037-MS1)										
Perchlorate	26.4	4.0	ug/l	25.0	1.25	101	80-120			

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0037 Extracted: 01/03/11										
Matrix Spike Dup Analyzed: 01/03/2011 (11A0037-MSD1)					Source: ITL2774-03					
Perchlorate	26.5	4.0	ug/l	25.0	1.25	101	80-120	0.3	20	
Batch: 11A0108 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0108-BLK1)										
Ammonia-N (Distilled)	ND	0.500	mg/l							
LCS Analyzed: 01/03/2011 (11A0108-BS1)										
Ammonia-N (Distilled)	10.1	0.500	mg/l	10.0		101	80-115			
Matrix Spike Analyzed: 01/03/2011 (11A0108-MS1)					Source: ITL2721-04					
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120			
Matrix Spike Dup Analyzed: 01/03/2011 (11A0108-MSD1)					Source: ITL2721-04					
Ammonia-N (Distilled)	9.80	0.500	mg/l	10.0	ND	98	70-120	0	15	
Batch: 11A0118 Extracted: 01/03/11										
Blank Analyzed: 01/03/2011 (11A0118-BLK1)										
Total Cyanide	ND	5.0	ug/l							
LCS Analyzed: 01/03/2011 (11A0118-BS1)										
Total Cyanide	192	5.0	ug/l	200		96	90-110			
Matrix Spike Analyzed: 01/03/2011 (11A0118-MS1)					Source: ITL2724-02					
Total Cyanide	163	5.0	ug/l	200	ND	81	70-115			

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INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 11A0118 Extracted: 01/03/11										
Matrix Spike Dup Analyzed: 01/03/2011 (11A0118-MSD1)										
Total Cyanide	163	5.0	ug/l	200	ND	81	70-115	0.1	15	

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1012285 Extracted: 01/12/11										
Blank Analyzed: 01/13/2011 (G1A120000285B)					Source:					
1,2,3,4,6,7,8-HpCDD	8.4e-007	0.00005	ug/L				-			J, Q
1,2,3,4,6,7,8-HpCDF	9.6e-007	0.00005	ug/L				-			J, Q
1,2,3,4,7,8,9-HpCDF	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,4,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDD	ND	0.00005	ug/L				-			
1,2,3,6,7,8-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDD	ND	0.00005	ug/L				-			
1,2,3,7,8,9-HxCDF	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,4,6,7,8-HxCDF	ND	0.00005	ug/L				-			
2,3,4,7,8-PeCDF	ND	0.00005	ug/L				-			
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	4.6e-006	0.0001	ug/L				-			J, Q
OCDF	1e-006	0.0001	ug/L				-			J, Q
Total HpCDD	1.9e-006	0.00005	ug/L				-			J, Q
Total HpCDF	9.6e-007	0.00005	ug/L				-			J, Q
Total HxCDD	ND	0.00005	ug/L				-			
Total HxCDF	ND	0.00005	ug/L				-			
Total PeCDD	ND	0.00005	ug/L				-			
Total PeCDF	ND	0.00005	ug/L				-			
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0018		ug/L	0.002		89	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0019		ug/L	0.002		94	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0019		ug/L	0.002		95	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0015		ug/L	0.002		73	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0016		ug/L	0.002		82	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0021		ug/L	0.002		104	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0017		ug/L	0.002		88	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0016		ug/L	0.002		82	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0016		ug/L	0.002		82	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0016		ug/L	0.002		78	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0017		ug/L	0.002		87	28-136			

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METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1012285 Extracted: 01/12/11										
Blank Analyzed: 01/13/2011 (G1A120000285B)					Source:					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0017		ug/L	0.002		84	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0014		ug/L	0.002		71	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0013		ug/L	0.002		68	24-169			
Surrogate: 13C-OCDD	0.0038		ug/L	0.004		95	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00073		ug/L	0.0008		92	35-197			
LCS Analyzed: 01/14/2011 (G1A120000285C)					Source:					
1,2,3,4,6,7,8-HpCDD	0.00111	0.00005	ug/L	0.001		111	70-140			B
1,2,3,4,6,7,8-HpCDF	0.00106	0.00005	ug/L	0.001		106	82-122			B
1,2,3,4,7,8,9-HpCDF	0.00102	0.00005	ug/L	0.001		102	78-138			
1,2,3,4,7,8-HxCDD	0.00111	0.00005	ug/L	0.001		111	70-164			
1,2,3,4,7,8-HxCDF	0.001	0.00005	ug/L	0.001		100	72-134			
1,2,3,6,7,8-HxCDD	0.00112	0.00005	ug/L	0.001		112	76-134			
1,2,3,6,7,8-HxCDF	0.00109	0.00005	ug/L	0.001		109	84-130			
1,2,3,7,8,9-HxCDD	0.00118	0.00005	ug/L	0.001		118	64-162			
1,2,3,7,8,9-HxCDF	0.00105	0.00005	ug/L	0.001		105	78-130			
1,2,3,7,8-PeCDD	0.00111	0.00005	ug/L	0.001		111	70-142			
1,2,3,7,8-PeCDF	0.00107	0.00005	ug/L	0.001		107	80-134			
2,3,4,6,7,8-HxCDF	0.000997	0.00005	ug/L	0.001		100	70-156			
2,3,4,7,8-PeCDF	0.00106	0.00005	ug/L	0.001		106	68-160			
2,3,7,8-TCDD	0.000216	0.00001	ug/L	0.0002		108	67-158			
2,3,7,8-TCDF	0.000206	0.00001	ug/L	0.0002		103	75-158			
OCDD	0.00196	0.0001	ug/L	0.002		98	78-144			B
OCDF	0.00223	0.0001	ug/L	0.002		111	63-170			B
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00157		ug/L	0.002		79	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0018		ug/L	0.002		90	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.00188		ug/L	0.002		94	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00133		ug/L	0.002		66	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00162		ug/L	0.002		81	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00176		ug/L	0.002		88	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00168		ug/L	0.002		84	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00168		ug/L	0.002		84	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00143		ug/L	0.002		72	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.00161		ug/L	0.002		81	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00176		ug/L	0.002		88	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00167		ug/L	0.002		83	13-328			

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
 618 Michillinda Avenue, Suite 200
 Arcadia, CA 91007
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
 Routine Outfall 008
 Report Number: ITL2723

Sampled: 12/29/10-12/30/10
 Received: 12/29/10

METHOD BLANK/QC DATA

EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 1012285 Extracted: 01/12/11										
LCS Analyzed: 01/14/2011 (G1A120000285C)										
Surrogate: 13C-2,3,7,8-TCDD	0.00135		ug/L	0.002		68	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00145		ug/L	0.002		73	22-152			
Surrogate: 13C-OCDD	0.00276		ug/L	0.004		69	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000714		ug/L	0.0008		89	31-191			

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Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ITL2723-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0	4.7	15

Compliance Check

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
ITL2723-02	Ammonia-N, Titr 4500NH3-C (w/di:Ammonia-N (Distilled)	Ammonia-N	mg/l	0	0.500	10.1
ITL2723-02	Antimony-200.8	Antimony	ug/l	0.22	2.0	6
ITL2723-02	Cadmium-200.8	Cadmium	ug/l	0.051	1.0	3.1
ITL2723-02	Chloride - 300.0	Chloride	mg/l	16	0.50	150
ITL2723-02	Copper-200.8	Copper	ug/l	2.69	2.00	14
ITL2723-02	Lead-200.8	Lead	ug/l	0.87	1.0	5.2
ITL2723-02	Mercury - 245.1	Mercury	ug/l	0	0.20	0.13
ITL2723-02	Nitrate-N, 300.0	Nitrate-N	mg/l	0.79	0.11	8
ITL2723-02	Nitrite-N, 300.0	Nitrite-N	mg/l	0	0.15	1
ITL2723-02	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.79	0.26	8
ITL2723-02	Perchlorate 314.0 - Default	Perchlorate	ug/l	0	4.0	6
ITL2723-02	Selenium-200.8	Selenium	ug/l	0.45	2.0	5
ITL2723-02	Sulfate-300.0	Sulfate	mg/l	15	0.50	300
ITL2723-02	TDS - SM2540C	Total Dissolved Solids	mg/l	198	10	950
ITL2723-02	Thallium-200.8	Thallium	ug/l	0.032	1.0	2
ITL2723-02	Zinc-200.7	Zinc	ug/l	12	20.0	159

TestAmerica Irvine

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Project Manager

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Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
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DATA QUALIFIERS AND DEFINITIONS

- B** Method blank contamination. The associated method blank contains the target analyte at a reportable level.
- J** Estimated result. Result is less than the reporting limit.
- Ja** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- Jb** The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M-3** Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).
- MHA** Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
- MNR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- Q** Estimated maximum possible concentration (EMPC).
- U** The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

TestAmerica Irvine

Debby Wilson
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from TestAmerica.

ITL2723 <Page 29 of 32>

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

Certification Summary

TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	Water	X	X
EPA 200.7-Diss	Water	X	X
EPA 200.7	Water	X	X
EPA 200.8-Diss	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1-Diss	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 314.0	Water	X	X
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2540C	Water	X	
SM4500CN-E	Water	X	X
SM4500NH3-C	Water	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

TestAmerica Irvine

Debby Wilson
Project Manager

MWH-Pasadena/Boeing
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec
Samples: ITL2723-02

Analysis Performed: Gross Alpha
Samples: ITL2723-02

Analysis Performed: Gross Beta
Samples: ITL2723-02

Analysis Performed: Level 4 Data Package
Samples: ITL2723-02

Analysis Performed: Radium, Combined
Samples: ITL2723-02

Analysis Performed: Strontium 90
Samples: ITL2723-02

Analysis Performed: Tritium
Samples: ITL2723-02

Analysis Performed: Uranium, Combined
Samples: ITL2723-02

TestAmerica Irvine

Debby Wilson
Project Manager

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618 Michillinda Avenue, Suite 200
Arcadia, CA 91007
Attention: Bronwyn Kelly

Project ID: Routine Outfall 008 2010
Routine Outfall 008
Report Number: ITL2723

Sampled: 12/29/10-12/30/10
Received: 12/29/10

TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8656
Samples: ITL2723-02

Method Performed: 900
Samples: ITL2723-02

Method Performed: 901.1
Samples: ITL2723-02

Method Performed: 903.1
Samples: ITL2723-02

Method Performed: 904
Samples: ITL2723-02

Method Performed: 905
Samples: ITL2723-02

Method Performed: 906
Samples: ITL2723-02

TestAmerica West Sacramento *NELAC Cert #1119CA, Nevada Cert #CA44*

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B
Samples: ITL2723-02

TestAmerica Irvine

Debby Wilson
Project Manager

Client Name/Address: MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Project: Boeing-SSFL NPDES Routine Outfall 008 COMPOSITE <i>LOW</i> Stormwater at Happy Valley	ANALYSIS REQUIRED										Comments
Project Manager: Bronwyn Kelly Sampler: <i>RICK BANAGA</i>	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Ti, Se, Zn	TCDD (and all congeners)	Cl, SO ₄ , NO ₃ +NO ₂ -N, Perchlorate	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Ti, Se, Zn	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Chlorine Toxicity	Nitrate-N, Nitrite-N	Ammonia-N (350.2)	Cyanide	

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg, Ti, Se, Zn	TCDD (and all congeners)	Cl, SO ₄ , NO ₃ +NO ₂ -N, Perchlorate	TDS, TSS	Total Dissolved Metals: Sb, Cd, Cu, Pb, Hg, Ti, Se, Zn	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Chlorine Toxicity	Nitrate-N, Nitrite-N	Ammonia-N (350.2)	Cyanide	Comments	
Outfall 008	W	1L Poly	1	<i>12-30-2010</i>	HNO ₃	2A	X											
Outfall 008 Dup	W	1L Poly	1	<i>01:57</i>	HNO ₃	2B	X											
Outfall 008	W	1L Amber	2		None	3A, 3B		X										
Outfall 008	W	500 mL Poly	2		None	4A, 4B		X										
Outfall 008	W	500 mL Poly	1		None	5			X									
Outfall 008	W	1L Poly	1		None	6				X							Filter w/in 24hrs of receipt at lab	
Outfall 008	W	2.5 Gal Cube	1	<i>12-30-2010</i>	None	7A											Unfiltered and unpreserved analysis	
		500 mL Amber	1	<i>01:57</i>	None	7B					X							
Outfall 008	W	1 Gal Poly	1		None	8												Only test if first or second rain events of the year
Outfall 008	W	500 mL Poly	1	<i>12-30-2010</i>	None	9							X					
Outfall 008	W	500 mL Poly	1	<i>01:57</i>	H ₂ SO ₄	10								X				
Outfall 008	W	500 mL Poly	1	<i>12-30-2010</i>	NaOH	11									X			

12/30/10
MP

COC Page 2 of 2 list the Composite Samples for Outfall 008 for this storm event.
 These must be added to the same work order for COC Page 1 of 2 for Outfall 008 for the same event.

Relinquished By <i>Rick Banaga</i>	Date/Time: <i>12-30-2010</i>	Received By <i>Matt Orndy</i>	Date/Time: <i>12-30-10</i> <i>13:50</i>	Turn-around time: (Check) 24 Hour: _____ 72 Hour: _____ 10 Day: _____ 48 Hour: _____ 5 Day: <input checked="" type="checkbox"/> Normal: _____
Relinquished By <i>Matt Orndy</i>	Date/Time: <i>12-30-10</i> <i>19:15</i>	Received By	Date/Time:	Sample Integrity: (Check) Intact: <input checked="" type="checkbox"/> On Ice: <input checked="" type="checkbox"/>
Relinquished By	Date/Time:	Received By	Date/Time:	Data Requirements: (Check) No Level IV: _____ All Level IV: _____ NPDES Level IV: <input checked="" type="checkbox"/>

30ms3 1-1



EBERLINE

SERVICES

EBERLINE ANALYTICAL CORPORATION

2030 Wright Avenue

Richmond, California 94804-3849

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Toll Free (800) 841-5487

www.eberlineservices.com

February 2, 2011

Ms. Debby Wilson
Test America Irvine
17461 Derian Ave., Ste. 100
Irvine, CA 92614

**Reference: Test America-Irvine ITL2723
Eberline Analytical Report S101003-8656
Sample Delivery Group 8656**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITL2723. The sample was received on December 31, 2010.

Please call me, if you have any questions concerning the enclosed report.

Sincerely,

N. Joseph Verville
Client Services Manager

NJV/ljb

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8656 consists of the analytical results and supporting documentation for one water sample. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The sample was received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

Tritium and gamma analyses were performed on the sample as received i.e. the sample was not filtered. The analytical volumes for all other analyses were subjected to a full nitric acid/hydrofluoric acid dissolution, and analyses were performed on the dissolution volume.

2.0 Quality Control

For efficiency of analysis, sample ITL2723-02 was analyzed in a common prep batch with other TA samples. The QC samples from that common prep batch were assigned to SDG 8657 and are reported herein. Quality Control Samples consisted of laboratory control samples (LCS), method blanks, duplicate analyses and matrix spike analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

The error for each result is an estimate of the significant random uncertainties incurred in the measurement process. These are propagated to each final result. They include the counting (Poisson) uncertainty, as well as those intrinsic errors due to carrier or tracer standardization, aliquoting, counter efficiencies, weights, or volumes. The following method errors were propagated to the count error to calculate the 2 σ error (Total):

Analysis	Method Error
Gross alpha	20.6%
Gross beta	11.0%
Tritium	10.0%
Sr-90	10.4%
Ra-226	16.4%
Ra-228	10.4%
Uranium, Total	
Gamma Spec.	7.0%

4.0 Analysis Notes

- 4.1 **Gross Alpha/Gross Beta Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.2 **Tritium Analysis** – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.3 **Strontium-90 Analysis** - The Sr-90 MDA in the QC Method Blank (2.02 pCi/L) and sample ITL2723-02 (2.24 pCi/L) was greater than the required detection limit of 2.00 pCi/L. No other problems were encountered during the processing of the samples. All other quality control sample results were within required control limits.
- 4.4 **Radium-226 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.5 **Radium-228 Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.6 **Total Uranium Analysis** - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.
- 4.7 **Gamma Spectroscopy** – The K-40 MDA for the duplicate of sample ITL2724-02 (28.0 pCi/L) and sample ITL2723-02 (39.2 pCi/L) were greater than the required detection limit of 25 pCi/L due to an elevated K40 background in the ROI for K40 on the detector used for analysis. No other problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

5.0 Case Narrative Certification Statement

“I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.”



N. Joseph Verville
Client Services Manager

2/2/11

Date

EBERLINE ANALYTICAL
SDG 8656

SDG 8656
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL2723

S U M M A R Y D A T A S E C T I O N

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VB

Prepared by

N. Joseph Verville

Reviewed by

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 02/01/11

EBERLINE ANALYTICAL

SDG 8656

SDG 8656
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract ITL2723

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DUPLICATES

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 1

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/01/11

EBERLINE ANALYTICAL

SDG 8656

SDG 8656
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract ITL2723

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

Page 2

SUMMARY DATA SECTION

Page 2

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/01/11

EBERLINE ANALYTICAL

SDG 8656

SDG 8656
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL2723

LAB SAMPLE SUMMARY

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S101003-01	ITL2723-02	Boeing - SSFL	WATER			ITL2723	12/30/10 01:57
S101004-02	Lab Control Sample		WATER				
S101004-03	Method Blank		WATER				
S101004-04	Duplicate (S101004-01)	Boeing - SSFL	WATER				12/30/10 02:55

LAB SUMMARY

Page 1

SUMMARY DATA SECTION

Page 3

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 02/01/11

EBERLINE ANALYTICAL

SDG 8656

SDG 8656
 Contact N. Joseph Verville

QC SUMMARY

Client Test America, Inc.
 Contract ITL2723

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	DEPARTMENT SAMPLE ID
8656	ITL2723	ITL2723-02	WATER		10.0 L		12/31/10 1	S101003-01	8656-001
8657		Method Blank	WATER					S101004-03	8657-003
		Lab Control Sample	WATER					S101004-02	8657-002
		Duplicate (S101004-01)	WATER		10.0 L		12/31/10 1	S101004-04	8657-004

QC SUMMARY

Page 1

SUMMARY DATA SECTION

Page 4

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 02/01/11

EBERLINE ANALYTICAL

SDG 8656

SDG 8656
Contact N. Joseph Verville

PREP BATCH SUMMARY

Client Test America, Inc.
Contract ITL2723

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALIFIERS
			BATCH	2σ %	CLIENT	MORE	RE BLANK	LCS	
Beta Counting									
AC	WATER	Radium-228 in Water	7271-039	10.4	1		1	1	1/0/1
SR	WATER	Strontium-90 in Water	7271-039	10.4	1		1	1	1/0/1
Gas Proportional Counting									
80A	WATER	Gross Alpha in Water	7271-039	20.6	1		1	1	1/0/1
80B	WATER	Gross Beta in Water	7271-039	11.0	1		1	1	1/0/1
Gamma Spectroscopy									
GAM	WATER	Gamma Emitters in Water	7271-039	7.0	1		1	1	1/0/1
Kinetic Phosphorimetry, ug									
U_T	WATER	Uranium, Total	7271-039		1		1	1	1/0/1
Liquid Scintillation Counting									
H	WATER	Tritium in Water	7271-039	10.0	1		1	1	1/0/1
Radon Counting									
RA	WATER	Radium-226 in Water	7271-039	16.4	1		1	1	1/0/1

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.
In counts like 'a/b/c', 'a' = QC planchets, 'b' = Originals in this SDG, 'c' = Originals in other SDGs.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 02/01/11

EBERLINE ANALYTICAL

SDG 8656

SDG 8656
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL2723

LAB WORK SUMMARY

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX		SUF-						
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S101003-01	ITL2723-02		8656-001	80A/80		01/11/11	01/12/11	BW	Gross Alpha in Water	
12/30/10	Boeing - SSFL	WATER	8656-001	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water	
12/31/10	ITL2723		8656-001	AC		01/26/11	01/31/11	BW	Radium-228 in Water	
			8656-001	GAM		01/11/11	01/31/11	MWT	Gamma Emitters in Water	
			8656-001	H		01/18/11	01/24/11	BW	Tritium in Water	
			8656-001	RA		01/21/11	01/24/11	BW	Radium-226 in Water	
			8656-001	SR		01/26/11	01/31/11	BW	Strontium-90 in Water	
			8656-001	U_T		01/20/11	01/24/11	BW	Uranium, Total	
S101004-02	Lab Control Sample		8657-002	80A/80		01/11/11	01/12/11	BW	Gross Alpha in Water	
		WATER	8657-002	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water	
			8657-002	AC		01/26/11	01/31/11	BW	Radium-228 in Water	
			8657-002	GAM		01/10/11	01/31/11	MWT	Gamma Emitters in Water	
			8657-002	H		01/18/11	01/24/11	BW	Tritium in Water	
			8657-002	RA		01/21/11	01/24/11	BW	Radium-226 in Water	
			8657-002	SR		01/26/11	01/31/11	BW	Strontium-90 in Water	
			8657-002	U_T		01/20/11	01/24/11	BW	Uranium, Total	
S101004-03	Method Blank		8657-003	80A/80		01/11/11	01/12/11	BW	Gross Alpha in Water	
		WATER	8657-003	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water	
			8657-003	AC		01/26/11	01/31/11	BW	Radium-228 in Water	
			8657-003	GAM		01/10/11	01/31/11	MWT	Gamma Emitters in Water	
			8657-003	H		01/18/11	01/24/11	BW	Tritium in Water	
			8657-003	RA		01/21/11	01/24/11	BW	Radium-226 in Water	
			8657-003	SR		01/26/11	01/31/11	BW	Strontium-90 in Water	
			8657-003	U_T		01/20/11	01/24/11	BW	Uranium, Total	
S101004-04	Duplicate (S101004-01)		8657-004	80A/80		01/11/11	01/12/11	BW	Gross Alpha in Water	
12/30/10	Boeing - SSFL	WATER	8657-004	80B/80		01/11/11	01/12/11	BW	Gross Beta in Water	
12/31/10			8657-004	AC		01/26/11	01/31/11	BW	Radium-228 in Water	
			8657-004	GAM		01/11/11	01/31/11	MWT	Gamma Emitters in Water	
			8657-004	H		01/18/11	01/24/11	BW	Tritium in Water	
			8657-004	RA		01/21/11	01/24/11	BW	Radium-226 in Water	
			8657-004	SR		01/26/11	01/31/11	BW	Strontium-90 in Water	
			8657-004	U_T		01/20/11	01/24/11	BW	Uranium, Total	

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LWS
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EBERLINE ANALYTICAL

SDG 8656

WORK SUMMARY, cont.

SDG 8656
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL2723

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	1			1	1	1	4
80B/80		Gross Beta in Water	900.0	1			1	1	1	4
AC		Radium-228 in Water	904.0	1			1	1	1	4
GAM		Gamma Emitters in Water	901.1	1			1	1	1	4
H		Tritium in Water	906.0	1			1	1	1	4
RA		Radium-226 in Water	903.1	1			1	1	1	4
SR		Strontium-90 in Water	905.0	1			1	1	1	4
U_T		Uranium, Total	D5174	1			1	1	1	4
TOTALS				8			8	8	8	32

WORK SUMMARY

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SUMMARY DATA SECTION

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Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LWS
 Version 3.06
 Report date 02/01/11

EBERLINE ANALYTICAL
SDG 8656

8657-003

Method Blank

METHOD BLANK

SDG <u>8656</u> Contact <u>N. Joseph Verville</u>	Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>
Lab sample id <u>S101004-03</u> Dept sample id <u>8657-003</u>	Client sample id <u>Method Blank</u> Material/Matrix _____ <u>WATER</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.035	0.30	0.620	3.00	U	80A
Gross Beta	12587472	-0.211	0.63	1.11	4.00	U	80B
Tritium	10028178	84.6	190	319	500	U	H
Radium-226	13982633	0.053	0.35	0.627	1.00	U	RA
Radium-228	15262201	-0.165	0.28	0.717	1.00	U	AC
Strontium-90	10098972	0.357	0.92	<u>2.02</u>	2.00	U	SR
Uranium, Total		0	0.007	0.017	1.00	U	U_T
Potassium-40	13966002	U		22.5	25.0	U	GAM
Cesium-137	10045973	U		0.916	20.0	U	GAM

QC-BLANK #76735

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/01/11</u>

EBERLINE ANALYTICAL

SDG 8656

8657-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8656</u> Contact <u>N. Joseph Verville</u>	Client <u>Test America, Inc.</u> Contract <u>ITL2723</u>
Lab sample id <u>S101004-02</u> Dept sample id <u>8657-002</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix <u>WATER</u>

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	36.1	2.2	0.821	3.00	80A	40.4	1.6	89	80-120	70-130
Gross Beta	33.7	1.4	1.13	4.00	80B	35.0	1.4	96	88-112	70-130
Tritium	2470	300	327	500	H	2540	100	97	84-116	80-120
Radium-226	59.0	2.5	0.639	1.00	RA	55.7	2.2	106	82-118	80-120
Radium-228	4.07	0.98	0.438	1.00	AC	4.62	0.18	88	77-123	60-140
Strontium-90	17.8	1.9	1.12	2.00	SR	17.5	0.70	102	84-116	80-120
Uranium, Total	60.8	7.3	0.174	1.00	U_T	62.5	2.5	97	88-112	80-120
Cobalt-60	104	5.2	2.76	10.0	GAM	102	4.1	102	90-110	80-120
Cesium-137	117	4.6	3.40	20.0	GAM	110	4.4	106	91-109	80-120

QC-LCS #76734

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>02/01/11</u>

EBERLINE ANALYTICAL

SDG 8656

8657-004

ITL2724-02

DUPLICATE

SDG <u>8656</u> Contact <u>N. Joseph Verville</u> Duplicates Lab sample id <u>S101004-04</u> Dept sample id <u>8657-004</u>	ORIGINAL Lab sample id <u>S101004-01</u> Dept sample id <u>8657-001</u> Received <u>12/31/10</u>	Client <u>Test America, Inc.</u> Contract <u>ITL2723</u> Client sample id <u>ITL2724-02</u> Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u> Collected/Volume <u>12/30/10 02:55</u> <u>10.0 L</u> Chain of custody id <u>ITL2724</u>
---	---	--

ANALYTE	DUPLICATE		MDA		RDL		QUALI- FIERS	TEST	ORIGINAL		MDA		QUALI- FIERS	RPD %	3σ TOT	DER σ
	pCi/L	2σ ERR (COUNT)	pCi/L		pCi/L				pCi/L	2σ ERR (COUNT)	pCi/L					
Gross Alpha	0.672	0.31	0.372		3.00		J	80A	0.336	0.29	0.412		U	67	134	1.5
Gross Beta	1.60	0.58	0.884		4.00		J	80B	1.23	0.54	0.835		J	26	87	0.9
Tritium	-26.6	180	321		500		U	H	80.3	190	323		U	-		0.8
Radium-226	0.082	0.32	0.566		1.00		U	RA	0.146	0.31	0.541		U	-		0.3
Radium-228	0.063	0.29	0.734		1.00		U	AC	0.030	0.21	0.458		U	-		0.2
Strontium-90	-0.236	0.71	1.75		2.00		U	SR	-0.099	0.80	1.94		U	-		0.3
Uranium, Total	0.082	0.012	0.017		1.00		J	U_T	0.093	0.013	0.017		J	13	30	1.2
Potassium-40	U		<u>28.0</u>		25.0		U	GAM	U		16.2		U	-		0.7
Cesium-137	U		1.50		20.0		U	GAM	U		1.25		U	-		0.3

QC-DUP#1 76736

DUPLICATES

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SUMMARY DATA SECTION

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Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>02/01/11</u>

EBERLINE ANALYTICAL
SDG 8656

8656-001

ITL2723-02

DATA SHEET

SDG <u>8656</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>ITL2723</u>
Lab sample id <u>S101003-01</u>	Client sample id <u>ITL2723-02</u>
Dept sample id <u>8656-001</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
Received <u>12/31/10</u>	Collected/Volume <u>12/30/10 01:57</u> <u>10.0 L</u>
	Chain of custody id <u>ITL2723</u>

ANALYTE	CAS NO	RESULT pCi/L	2 σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.928	0.46	0.566	3.00	J	80A
Gross Beta	12587472	3.17	0.60	0.844	4.00	J	80B
Tritium	10028178	31.2	180	314	500	U	H
Radium-226	13982633	0.214	0.43	0.754	1.00	U	RA
Radium-228	15262201	-0.069	0.28	0.790	1.00	U	AC
Strontium-90	10098972	-0.221	1.0	<u>2.24</u>	2.00	U	SR
Uranium, Total		0.749	0.085	0.017	1.00	J	U_T
Potassium-40	13966002	U		<u>39.2</u>	25.0	U	GAM
Cesium-137	10045973	U		1.54	20.0	U	GAM

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>02/01/11</u>

EBERLINE ANALYTICAL

SDG 8656

Test AC Matrix WATER
 SDG 8656
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL2723

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-228

Preparation batch 7271-039

S101003-01	8656-001	ITL2723-02	U
S101004-02	8657-002	Lab Control Sample	ok
S101004-03	8657-003	Method Blank	U
S101004-04	8657-004	Duplicate (S101004-01)	- U

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7271-039 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.039

S101003-01	ITL2723-02	0.790	1.80	78	150	27	01/26/11	01/26	GRB-231
S101004-02	Lab Control Sample	0.438	1.80	85	150		01/26/11	01/26	GRB-204
S101004-03	Method Blank	0.717	1.80	88	150		01/26/11	01/26	GRB-229
S101004-04	Duplicate (S101004-01)	0.734	1.80	78	150	27	01/26/11	01/26	GRB-230

Nominal values and limits from method 1.00 1.80 30-105 50 180

PROCEDURES REFERENCE 904.0
 DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD MDA 0.670 ± 0.315
 FOR 4 SAMPLES YIELD 82 ± 10

Lab id EAS
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EBERLINE ANALYTICAL

SDG 8656

Test SR Matrix WATER
 SDG 8656
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL2723

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Strontium-90

Preparation batch 7271-039

S101003-01	8656-001	ITL2723-02	U
S101004-02	8657-002	Lab Control Sample	ok
S101004-03	8657-003	Method Blank	U
S101004-04	8657-004	Duplicate (S101004-01)	- U

Nominal values and limits from method RDLs (pCi/L) 2.00

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7271-039 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.039

S101003-01	ITL2723-02	<u>2.24</u>	0.500			49	50		27	01/19/11	01/26	GRB-206
S101004-02	Lab Control Sample	1.12	0.500			59	50			01/19/11	01/26	GRB-221
S101004-03	Method Blank	<u>2.02</u>	0.500			44	50			01/19/11	01/26	GRB-230
S101004-04	Duplicate (S101004-01)	1.75	0.500			55	50		27	01/19/11	01/26	GRB-231

Nominal values and limits from method 2.00 0.500 30-105 50 180

PROCEDURES REFERENCE 905.0
 DWP-380 Strontium in Drinking Water, rev 8

AVERAGES ± 2 SD MDA 1.78 ± 0.970
 FOR 4 SAMPLES YIELD 52 ± 13

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
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EBERLINE ANALYTICAL

SDG 8656

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Test GAM Matrix WATER
 SDG 8656
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL2723

RESULTS

LAB RAW SUF-
 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Cobalt-60 Cesium-137

Preparation batch 7271-039

S101003-01	8656-001	ITL2723-02			U
S101004-02	8657-002	Lab Control Sample	ok		ok
S101004-03	8657-003	Method Blank			U
S101004-04	8657-004	Duplicate (S101004-01)			- U

Nominal values and limits from method RDLs (pCi/L) 10.0 20.0

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
 SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Preparation batch 7271-039 2σ prep error 7.0 % Reference Lab Notebook No. 7271 pg.039

S101003-01	ITL2723-02		2.00						596		12	01/10/11	01/11	MB,01,00
S101004-02	Lab Control Sample		2.00						946			01/10/11	01/10	MB,05,00
S101004-03	Method Blank		2.00						924			01/10/11	01/10	MB,08,00
S101004-04	Duplicate (S101004-01)		2.00						596		12	01/10/11	01/11	01,02,00

Nominal values and limits from method 6.00 2.00 400 180

PROCEDURES REFERENCE 901.1
 DWP-100 Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 02/01/11

EBERLINE ANALYTICAL

SDG 8656

LAB METHOD SUMMARY

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Test U T Matrix WATER
 SDG 8656
 Contact N. Joseph Verville

Client Test America, Inc.
 Contract ITL2723

RESULTS

LAB	RAW	SUF-		Uranium,
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total

Preparation batch 7271-039				
S101003-01		8656-001	ITL2723-02	0.749 J
S101004-02		8657-002	Lab Control Sample	ok
S101004-03		8657-003	Method Blank	U
S101004-04		8657-004	Duplicate (S101004-01)	ok J

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB	RAW	SUF-		MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
SAMPLE ID	TEST FIX	CLIENT SAMPLE ID		pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7271-039		2σ prep error	Reference Lab Notebook No. 7271 pg.039													
S101003-01		ITL2723-02	0.017	0.0200									21	01/20/11	01/20	KPA-001
S101004-02		Lab Control Sample	0.174	0.0200										01/20/11	01/20	KPA-001
S101004-03		Method Blank	0.017	0.0200										01/20/11	01/20	KPA-001
S101004-04		Duplicate (S101004-01)	0.017	0.0200									21	01/20/11	01/20	KPA-001

Nominal values and limits from method 1.00 0.0200 180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD MDA 0.056 ± 0.157
 FOR 4 SAMPLES YIELD _____ ± _____

Lab id EAS
 Protocol TA
 Version Ver 1.0
 Form DVD-LMS
 Version 3.06
 Report date 02/01/11

EBERLINE ANALYTICAL

SDG 8656

Test RA Matrix WATER
SDG 8656
Contact N. Joseph Verville

Client Test America, Inc.
Contract ITL2723

LAB METHOD SUMMARY

RADIUM-226 IN WATER
RADON COUNTING

RESULTS

LAB RAW SUF-
SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Radium-226

Table with 4 columns: Sample ID, Test Fix, Planchet, Client Sample ID. Rows include preparation batch 7271-039 and samples S101003-01 through S101004-04.

Nominal values and limits from method RDLs (pCi/L) 1.00

METHOD PERFORMANCE

LAB RAW SUF- MDA ALIQ PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-
SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/L L FAC TION % % min keV KeV HELD PREPARED YZED DETECTOR

Table with 12 columns: Sample ID, Test Fix, Client Sample ID, MDA, Aliq, Prep, Dilu, Yield, Eff, Count, FWHM, Drift, Days, Anal. Rows include preparation batch 7271-039 and samples S101003-01 through S101004-04.

Nominal values and limits from method 1.00 0.100 100 180

PROCEDURES REFERENCE 903.1
DWP-881A Ra-226 Screening in Drinking Water, rev 6

AVERAGES ± 2 SD MDA 0.646 ± 0.157
FOR 4 SAMPLES YIELD 100 ± 0

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 02/01/11

EBERLINE ANALYTICAL

SDG 8656

SDG 8656
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract ITL2723

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

- U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

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- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- * An MDA is underlined if it is bigger than its RDL.
- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

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may not be a good estimate of the 'real' minimum detectable activity.

- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:

1. A fixed percentage specified in the protocol.

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2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- * The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- * The second limits are protocol defined upper and lower QC limits for the recovery.

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MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

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METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

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correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
 - * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.
- MDAs are underlined if greater than the printed RDL.
- * Aliquots are underlined if less than the nominal value specified for the method.
 - * Preparation factors are underlined if greater than the nominal value specified for the method.
 - * Dilution factors are underlined if greater than the nominal value specified for the method.
 - * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
 - * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
 - * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.
 - * Count times are underlined if less than the nominal value

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specified for the method.

- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1+3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

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No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

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SUBCONTRACT ORDER

TestAmerica Irvine

ITL2723

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SENDING LABORATORY:

TestAmerica Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 260-3297
Project Manager: Debby Wilson

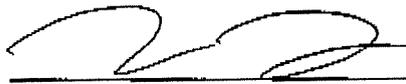
RECEIVING LABORATORY:

Eberline Services
2030 Wright Avenue
Richmond, CA 94804
Phone : (510) 235-2633
Fax: (510) 235-0438
Project Location: California
Receipt Temperature: _____ °C Ice: Y / N

Analysis	Units	Due	Expires	Comments
Sample ID: ITL2723-02 (Outfall 008 (Composite) - Water) Sampled: 12/30/10 01:57				
Gamma Spec-O	mg/kg	01/04/11	12/30/11 01:57	Out St Louis, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	01/04/11	06/28/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	01/04/11	06/28/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	01/04/11	01/27/11 01:57	
Radium, Combined-O	pCi/L	01/04/11	12/30/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	01/04/11	12/30/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	01/04/11	12/30/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	01/04/11	12/30/11 01:57	Out St Louis, Boeing permit, DO NOT FILTER!

Containers Supplied:

2.5 gal Poly (I) 500 mL Amber (J)

 12/30/10

Released By: FED EX Date/Time: 12/31/10

Received By: Alan Kellogg KELENSON Date/Time: 12/31/10 10:50



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 12/31/10 10:00 CoC No. ITL 2721, ITL 2723, ITL-2724

Container I.D. No. L 706 Requested TAT (Days) _____ P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [] No [] N/A []
2. Custody seals on shipping container dated & signed? Yes [] No [] N/A []
3. Custody seals on sample containers intact? Yes [] No [] N/A []
4. Custody seals on sample containers dated & signed? Yes [] No [] N/A []
5. Packing material is: Wet [] Dry [] N/A []
6. Number of samples in shipping container: 3 Sample Matrix WATER
7. Number of containers per sample: 2 (Or see CoC _____) Yes [] No []
8. Samples are in correct container Yes [] No []
9. Paperwork agrees with samples? Yes [] No []
10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []
11. Samples are: In good condition [] Leaking [] Broken Container [] Missing []
12. Samples are: Preserved [] Not preserved [] pH 2 Preservative HNO3
13. Describe any anomalies: _____

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____

15. Inspected by JK Date: 12/31/10 Time: 12:30

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>All samples < 60</u>							

Ion Chamber Ser. No. _____ Calibration date _____
 Alpha Meter Ser. No. _____ Calibration date _____
 Beta/Gamma Meter Ser. No. 100482 Calibration date 24 Sep. 2010