

# **APPENDIX G**

## **Section 26**

Outfall 009 – November 20, 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 009 2010  
Routine Outfall 009

Sampled: 11/20/10  
Received: 11/20/10  
Issued: 12/30/10 11:27

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, 11 pages, are included and are an integral part of this report.  
This entire report was reviewed and approved for release.*

## SAMPLE CROSS REFERENCE

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

ADDITIONAL  
INFORMATION:

The continuing calibration standard [ST1129A] analyzed on November 30, 2010 at 5:13 has an internal standard recovery for 13C-1,2,3,6,7,8-HxCDD at 119% which is above the method recommended criteria of 118% deviation from the initial calibration curve. Also, the internal standard recovery for 13C-1,2,3,4,7,8,9-HpCDF is 130% which is above the method recommended criteria of 129% deviation from the initial calibration curve. This sample has recoveries for these internal standards within the method acceptance limits and no further action is required.

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**

ITK2126-01  
ITK2126-02

**CLIENT ID**

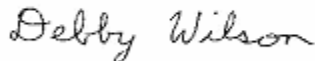
Outfall 009  
Outfall 009

**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 009 2010  
Routine Outfall 009  
Report Number: ITK2126

Sampled: 11/20/10  
Received: 11/20/10

## HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-02 (Outfall 009 - Water)</b>									
<b>Reporting Units: mg/l</b>									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	10L0691	1.3	4.7	ND	1	DA	12/07/10	

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

Project ID: Routine Outfall 009 2010  
 Routine Outfall 009  
 Report Number: ITK2126

Sampled: 11/20/10  
 Received: 11/20/10

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water)</b>									
Reporting Units: ug/l									
Mercury	EPA 245.1	10K3462	0.10	0.20	ND	1	DB	11/30/10	
Antimony	EPA 200.8	10L0590	0.30	2.0	<b>0.48</b>	1	RDC	12/06/10	Ja
Cadmium	EPA 200.8	10L0590	0.10	1.0	<b>0.12</b>	1	RDC	12/06/10	Ja
Copper	EPA 200.8	10L0590	0.500	2.00	<b>3.22</b>	1	RDC	12/06/10	
Lead	EPA 200.8	10L0590	0.20	1.0	<b>1.2</b>	1	RDC	12/06/10	
Thallium	EPA 200.8	10L0590	0.20	1.0	ND	1	RDC	12/06/10	

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 Report Number: ITK2126

Sampled: 11/20/10  
 Received: 11/20/10

## DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: ug/l									
Mercury	EPA 245.1-Diss	10K3461	0.10	0.20	ND	1	DB	11/30/10	
<b>Antimony</b>	EPA 200.8-Diss	10L0593	0.30	2.0	<b>0.48</b>	1	RDC	12/06/10	Ja
Cadmium	EPA 200.8-Diss	10L0593	0.10	1.0	ND	1	RDC	12/06/10	
<b>Copper</b>	EPA 200.8-Diss	10L0593	0.500	2.00	<b>2.94</b>	1	RDC	12/06/10	
<b>Lead</b>	EPA 200.8-Diss	10L0593	0.20	1.0	<b>0.25</b>	1	RDC	12/06/10	Ja
Thallium	EPA 200.8-Diss	10L0593	0.20	1.0	ND	1	RDC	12/06/10	

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## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	10K2637	0.25	0.50	<b>1.5</b>	1	KS	11/20/10	
Total Cyanide	SM4500CN-E	10L0113	0.0022	0.0050	ND	1	SLA	12/01/10	
Nitrate/Nitrite-N	EPA 300.0	10K2637	0.15	0.26	<b>0.46</b>	1	KS	11/20/10	
Sulfate	EPA 300.0	10K2637	0.20	0.50	<b>3.5</b>	1	KS	11/20/10	
Total Dissolved Solids	SM2540C	10K3246	1.0	10	<b>120</b>	1	MC	11/26/10	
Total Suspended Solids	SM 2540D	10K3228	1.0	10	<b>6.0</b>	1	DC	11/24/10	Ja

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Sampled: 11/20/10  
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## 8641

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: pCi/L									
Uranium, Total	8641	8641		1	0.046	1	CSS	12/15/10	Jb

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## 900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: pCi/L									
Gross Alpha	900	8641		3	<b>0.709</b>	1	DVP	12/07/10	Jb
Gross Beta	900	8641		4	<b>1.48</b>	1	DVP	12/07/10	Jb

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## 901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: pCi/L									
Cesium-137	901.1	8641		20	ND	1	LS	12/06/10	U
Potassium-40	901.1	8641		25	ND	1	LS	12/06/10	U

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## 903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: pCi/L									
Radium-226	903.1	8641		1	0.047	1	TM	12/08/10	U

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## 904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: pCi/L									
Radium-228	904	8641		1	-0.066	1	ASM	12/09/10	U

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## 905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: pCi/L									
Strontium-90	905	8641		2	0.089	1	AI	12/06/10	U

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## 906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: pCi/L									
Tritium	906	8641		200	46.8	1	JO	12/09/10	U

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Sampled: 11/20/10  
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## EPA-5 1613Bx

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITK2126-01 (Outfall 009 - Water) - cont.</b>									
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	328385	0.00000029	0.00005	1.4e-005	0.98	SO	11/30/10	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	328385	0.00000019	0.00005	3.4e-006	0.98	SO	11/30/10	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	328385	0.00000024	0.00005	3.5e-007	0.98	SO	11/30/10	J, B
1,2,3,4,7,8-HxCDD	EPA-5 1613B	328385	0.0000002	0.00005	5.5e-007	0.98	SO	11/30/10	J, Q, B
1,2,3,4,7,8-HxCDF	EPA-5 1613B	328385	0.0000002	0.00005	ND	0.98	SO	11/30/10	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	328385	0.00000017	0.00005	6.8e-007	0.98	SO	11/30/10	J, B
1,2,3,6,7,8-HxCDF	EPA-5 1613B	328385	0.00000016	0.00005	ND	0.98	SO	11/30/10	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	328385	0.00000017	0.00005	8.5e-007	0.98	SO	11/30/10	J, B
1,2,3,7,8,9-HxCDF	EPA-5 1613B	328385	0.00000016	0.00005	ND	0.98	SO	11/30/10	
1,2,3,7,8-PeCDD	EPA-5 1613B	328385	0.00000045	0.00005	ND	0.98	SO	11/30/10	
1,2,3,7,8-PeCDF	EPA-5 1613B	328385	0.00000025	0.00005	ND	0.98	SO	11/30/10	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	328385	0.0000002	0.00005	ND	0.98	SO	11/30/10	
2,3,4,7,8-PeCDF	EPA-5 1613B	328385	0.0000003	0.00005	ND	0.98	SO	11/30/10	
2,3,7,8-TCDD	EPA-5 1613B	328385	0.00000029	0.00001	ND	0.98	SO	11/30/10	
2,3,7,8-TCDF	EPA-5 1613B	328385	0.00000033	0.00001	ND	0.98	SO	11/30/10	
OCDD	EPA-5 1613B	328385	0.00000043	0.0001	0.00016	0.98	SO	11/30/10	B
OCDF	EPA-5 1613B	328385	0.00000021	0.0001	9.2e-006	0.98	SO	11/30/10	J, B
Total HpCDD	EPA-5 1613B	328385	0.00000029	0.00005	3.3e-005	0.98	SO	11/30/10	J, B
Total HpCDF	EPA-5 1613B	328385	0.00000022	0.00005	8e-006	0.98	SO	11/30/10	J, Q, B
Total HxCDD	EPA-5 1613B	328385	0.00000018	0.00005	4.8e-006	0.98	SO	11/30/10	J, Q, B
Total HxCDF	EPA-5 1613B	328385	0.00000017	0.00005	2e-006	0.98	SO	11/30/10	J, Q, B
Total PeCDD	EPA-5 1613B	328385	0.00000045	0.00005	ND	0.98	SO	11/30/10	
Total PeCDF	EPA-5 1613B	328385	0.00000025	0.00005	ND	0.98	SO	11/30/10	
Total TCDD	EPA-5 1613B	328385	0.00000029	0.00001	1.6e-006	0.98	SO	11/30/10	J, Q, B
Total TCDF	EPA-5 1613B	328385	0.00000024	0.00001	ND	0.98	SO	11/30/10	

Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)	90 %
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)	96 %
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)	92 %
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)	73 %
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)	82 %
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)	88 %
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)	82 %
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)	90 %
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)	78 %
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)	80 %
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)	83 %
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	78 %
Surrogate: 13C-2,3,7,8-TCDD (25-164%)	77 %
Surrogate: 13C-2,3,7,8-TCDF (24-169%)	77 %
Surrogate: 13C-OCDD (17-157%)	86 %
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)	88 %

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Project Manager

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## SHORT HOLD TIME DETAIL REPORT

	<b>Hold Time (in days)</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>	<b>Date/Time Extracted</b>	<b>Date/Time Analyzed</b>
<b>Sample ID: Outfall 009 (ITK2126-01) - Water</b>					
EPA 300.0	2	11/20/2010 12:45	11/20/2010 16:20	11/20/2010 17:00	11/20/2010 19:55
Filtration	1	11/20/2010 12:45	11/20/2010 16:20	11/20/2010 18:30	11/20/2010 18:30

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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
<b>Batch: 10L0691 Extracted: 12/07/10</b>										
<b>Blank Analyzed: 12/07/2010 (10L0691-BLK1)</b>										
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
<b>LCS Analyzed: 12/07/2010 (10L0691-BS1)</b>										
Hexane Extractable Material (Oil & Grease)	19.8	5.0	mg/l	20.0		99	78-114			MNR1
<b>LCS Dup Analyzed: 12/07/2010 (10L0691-BSD1)</b>										
Hexane Extractable Material (Oil & Grease)	20.4	5.0	mg/l	20.0		102	78-114	3	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
<b>Batch: 10K3462 Extracted: 11/29/10</b>										
<b>Blank Analyzed: 11/30/2010 (10K3462-BLK1)</b>										
Mercury	ND	0.20	ug/l							
<b>LCS Analyzed: 11/30/2010 (10K3462-BS1)</b>										
Mercury	8.39	0.20	ug/l	8.00		105	85-115			
<b>Matrix Spike Analyzed: 11/30/2010 (10K3462-MS1)</b>										
					<b>Source: ITK2024-01</b>					
Mercury	5.75	0.20	ug/l	8.00	ND	72	70-130			
<b>Matrix Spike Dup Analyzed: 11/30/2010 (10K3462-MSD1)</b>										
					<b>Source: ITK2024-01</b>					
Mercury	5.55	0.20	ug/l	8.00	ND	69	70-130	4	20	M2
<b>Batch: 10L0590 Extracted: 12/06/10</b>										
<b>Blank Analyzed: 12/06/2010 (10L0590-BLK1)</b>										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
<b>LCS Analyzed: 12/06/2010 (10L0590-BS1)</b>										
Antimony	83.2	2.0	ug/l	80.0		104	85-115			
Cadmium	83.4	1.0	ug/l	80.0		104	85-115			
Copper	77.9	2.00	ug/l	80.0		97	85-115			
Lead	80.6	1.0	ug/l	80.0		101	85-115			
Thallium	80.6	1.0	ug/l	80.0		101	85-115			

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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
<b>Batch: 10L0590 Extracted: 12/06/10</b>										
<b>Matrix Spike Analyzed: 12/06/2010 (10L0590-MS1)</b>					<b>Source: ITK2645-01</b>					
Antimony	87.3	2.0	ug/l	80.0	0.578	108	70-130			
Cadmium	83.5	1.0	ug/l	80.0	ND	104	70-130			
Copper	84.1	2.00	ug/l	80.0	7.30	96	70-130			
Lead	76.4	1.0	ug/l	80.0	0.206	95	70-130			
Thallium	76.5	1.0	ug/l	80.0	ND	96	70-130			
<b>Matrix Spike Analyzed: 12/06/2010 (10L0590-MS2)</b>					<b>Source: ITL0002-03</b>					
Antimony	84.1	2.0	ug/l	80.0	ND	105	70-130			
Cadmium	82.7	1.0	ug/l	80.0	ND	103	70-130			
Copper	80.0	2.00	ug/l	80.0	4.25	95	70-130			
Lead	77.3	1.0	ug/l	80.0	1.30	95	70-130			
Thallium	75.4	1.0	ug/l	80.0	ND	94	70-130			
<b>Matrix Spike Dup Analyzed: 12/06/2010 (10L0590-MSD1)</b>					<b>Source: ITK2645-01</b>					
Antimony	86.4	2.0	ug/l	80.0	0.578	107	70-130	1	20	
Cadmium	82.0	1.0	ug/l	80.0	ND	102	70-130	2	20	
Copper	82.7	2.00	ug/l	80.0	7.30	94	70-130	2	20	
Lead	77.1	1.0	ug/l	80.0	0.206	96	70-130	1	20	
Thallium	76.9	1.0	ug/l	80.0	ND	96	70-130	0.6	20	

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Debby Wilson  
 Project Manager

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

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 Routine Outfall 009  
 Report Number: ITK2126

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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
<b>Batch: 10K3461 Extracted: 11/29/10</b>										
<b>Blank Analyzed: 11/30/2010 (10K3461-BLK1)</b>										
Mercury	ND	0.20	ug/l							
<b>LCS Analyzed: 11/30/2010 (10K3461-BS1)</b>										
Mercury	8.02	0.20	ug/l	8.00		100	85-115			
<b>Matrix Spike Analyzed: 11/30/2010 (10K3461-MS1)</b>										
					<b>Source: ITK2380-01</b>					
Mercury	8.06	0.20	ug/l	8.00	ND	101	70-130			
<b>Matrix Spike Dup Analyzed: 11/30/2010 (10K3461-MSD1)</b>										
					<b>Source: ITK2380-01</b>					
Mercury	8.25	0.20	ug/l	8.00	ND	103	70-130	2	20	
<b>Batch: 10L0593 Extracted: 12/06/10</b>										
<b>Blank Analyzed: 12/06/2010 (10L0593-BLK1)</b>										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
<b>LCS Analyzed: 12/06/2010 (10L0593-BS1)</b>										
Antimony	83.3	2.0	ug/l	80.0		104	85-115			
Cadmium	83.4	1.0	ug/l	80.0		104	85-115			
Copper	79.0	2.00	ug/l	80.0		99	85-115			
Lead	81.5	1.0	ug/l	80.0		102	85-115			
Thallium	81.6	1.0	ug/l	80.0		102	85-115			

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Debby Wilson  
 Project Manager

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

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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
<b>Batch: 10L0593 Extracted: 12/06/10</b>										
<b>Matrix Spike Analyzed: 12/06/2010 (10L0593-MS1)</b>					<b>Source: ITK2126-01</b>					
Antimony	85.2	2.0	ug/l	80.0	0.481	106	70-130			
Cadmium	83.1	1.0	ug/l	80.0	ND	104	70-130			
Copper	83.4	2.00	ug/l	80.0	2.94	101	70-130			
Lead	83.0	1.0	ug/l	80.0	0.250	103	70-130			
Thallium	82.1	1.0	ug/l	80.0	ND	103	70-130			
<b>Matrix Spike Dup Analyzed: 12/06/2010 (10L0593-MSD1)</b>					<b>Source: ITK2126-01</b>					
Antimony	85.1	2.0	ug/l	80.0	0.481	106	70-130	0.04	20	
Cadmium	83.8	1.0	ug/l	80.0	ND	105	70-130	0.8	20	
Copper	81.0	2.00	ug/l	80.0	2.94	98	70-130	3	20	
Lead	81.4	1.0	ug/l	80.0	0.250	101	70-130	2	20	
Thallium	80.8	1.0	ug/l	80.0	ND	101	70-130	2	20	

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Debby Wilson  
 Project Manager

MWH-Pasadena/Boeing  
618 Michillinda Avenue, Suite 200  
Arcadia, CA 91007  
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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
<b>Batch: 10K2637 Extracted: 11/20/10</b>										
<b>Blank Analyzed: 11/20/2010 (10K2637-BLK1)</b>										
Chloride	ND	0.50	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
<b>LCS Analyzed: 11/20/2010 (10K2637-BS1)</b>										
Chloride	4.68	0.50	mg/l	5.00		94	90-110			
Sulfate	9.37	0.50	mg/l	10.0		94	90-110			
<b>Matrix Spike Analyzed: 11/20/2010 (10K2637-MS1)</b>										
					<b>Source: ITK2063-06</b>					
Chloride	19.6	1.0	mg/l	5.00	15.1	89	80-120			
Sulfate	57.1	1.0	mg/l	10.0	47.1	100	80-120			MHA
<b>Matrix Spike Analyzed: 11/21/2010 (10K2637-MS2)</b>										
					<b>Source: ITK2126-01</b>					
Chloride	5.92	0.50	mg/l	5.00	1.53	88	80-120			
Sulfate	13.0	0.50	mg/l	10.0	3.51	95	80-120			
<b>Matrix Spike Dup Analyzed: 11/20/2010 (10K2637-MSD1)</b>										
					<b>Source: ITK2063-06</b>					
Chloride	19.7	1.0	mg/l	5.00	15.1	91	80-120	0.6	20	
Sulfate	57.3	1.0	mg/l	10.0	47.1	103	80-120	0.5	20	MHA
<b>Batch: 10K3228 Extracted: 11/24/10</b>										
<b>Blank Analyzed: 11/24/2010 (10K3228-BLK1)</b>										
Total Suspended Solids	ND	10	mg/l							
<b>LCS Analyzed: 11/24/2010 (10K3228-BS1)</b>										
Total Suspended Solids	999	10	mg/l	1000		100	85-115			

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Debby Wilson  
Project Manager

MWH-Pasadena/Boeing  
 618 Michillinda Avenue, Suite 200  
 Arcadia, CA 91007  
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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
<b>Batch: 10K3228 Extracted: 11/24/10</b>										
<b>Duplicate Analyzed: 11/24/2010 (10K3228-DUP1)</b>										
Total Suspended Solids	8.00	10	mg/l		8.00			0	10	Ja
<b>Source: ITK2232-01</b>										
<b>Batch: 10K3246 Extracted: 11/26/10</b>										
<b>Blank Analyzed: 11/26/2010 (10K3246-BLK1)</b>										
Total Dissolved Solids	ND	10	mg/l							
<b>LCS Analyzed: 11/26/2010 (10K3246-BS1)</b>										
Total Dissolved Solids	1010	10	mg/l	1000		101	90-110			
<b>Duplicate Analyzed: 11/26/2010 (10K3246-DUP1)</b>										
Total Dissolved Solids	675	10	mg/l		657			3	10	
<b>Source: ITK2028-01</b>										
<b>Batch: 10L0113 Extracted: 12/01/10</b>										
<b>Blank Analyzed: 12/01/2010 (10L0113-BLK1)</b>										
Total Cyanide	ND	0.0050	mg/l							
<b>LCS Analyzed: 12/01/2010 (10L0113-BS1)</b>										
Total Cyanide	0.202	0.0050	mg/l	0.200		101	90-110			
<b>Matrix Spike Analyzed: 12/01/2010 (10L0113-MS1)</b>										
Total Cyanide	0.183	0.0050	mg/l	0.200	ND	91	70-115			
<b>Source: ITK2733-02</b>										
<b>Matrix Spike Dup Analyzed: 12/01/2010 (10L0113-MSD1)</b>										
Total Cyanide	0.199	0.0050	mg/l	0.200	ND	99	70-115	8	15	
<b>Source: ITK2733-02</b>										

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Debby Wilson  
 Project Manager

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

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## METHOD BLANK/QC DATA

### 8641

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8641 Extracted: 12/15/10</b>										
<b>LCS Analyzed: 12/15/2010 (S011232-02)</b>										
Uranium, Total	63.5	1	pCi/L	62.5		102	80-120			
<b>Blank Analyzed: 12/15/2010 (S011232-03)</b>										
Uranium, Total	0	1	pCi/L							U
<b>Duplicate Analyzed: 12/15/2010 (S011232-04)</b>										
Uranium, Total	0.042	1	pCi/L		0.046			9		Jb

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Debby Wilson  
 Project Manager



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

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## METHOD BLANK/QC DATA

### 900

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8641 Extracted: 12/07/10</u></b>										
<b>LCS Analyzed: 12/07/2010 (S011232-02)</b>										
Gross Alpha	53.1	3	pCi/L	44.4		120	70-130			
Gross Beta	42.7	4	pCi/L	42		102	70-130			
<b>Blank Analyzed: 12/09/2010 (S011232-03)</b>										
Gross Alpha	0.145	3	pCi/L							U
Gross Beta	-0.22	4	pCi/L							U
<b>Duplicate Analyzed: 12/09/2010 (S011232-04)</b>										
Gross Alpha	0.437	3	pCi/L		0.709			47		Jb
Gross Beta	0.776	4	pCi/L		1.48			62		U

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Debby Wilson  
 Project Manager

MWH-Pasadena/Boeing  
 618 Michillinda Avenue, Suite 200  
 Arcadia, CA 91007  
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## METHOD BLANK/QC DATA

### 901.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8641 Extracted: 11/30/10</u></b>										
<b>LCS Analyzed: 12/06/2010 (S011232-02)</b>										
Cobalt-60	103	10	pCi/L	104		99	80-120			
Cesium-137	115	20	pCi/L	110		104	80-120			
<b>Blank Analyzed: 12/06/2010 (S011232-03)</b>										
Cesium-137	ND	20	pCi/L				-			U
Potassium-40	ND	25	pCi/L				-			U
<b>Duplicate Analyzed: 12/07/2010 (S011232-04)</b>										
Cesium-137	ND	20	pCi/L		0		-	0		U
Potassium-40	ND	25	pCi/L		0		-	0		U

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 Project Manager

MWH-Pasadena/Boeing  
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 Arcadia, CA 91007  
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## METHOD BLANK/QC DATA

### 903.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8641 Extracted: 12/08/10</b>										
<b>LCS Analyzed: 12/08/2010 (S011232-02)</b>										
Radium-226	61.5	1	pCi/L	66.9		92	80-120			
<b>Blank Analyzed: 12/08/2010 (S011232-03)</b>										
Radium-226	0.042	1	pCi/L				-			U
<b>Duplicate Analyzed: 12/08/2010 (S011232-04)</b>										
Radium-226	-0.16	1	pCi/L		0.047		-	0		U

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Debby Wilson  
 Project Manager

MWH-Pasadena/Boeing  
 618 Michillinda Avenue, Suite 200  
 Arcadia, CA 91007  
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## METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8641 Extracted: 12/09/10</b>										
<b>LCS Analyzed: 12/09/2010 (S011232-02)</b>										
Radium-228	4.43	1	pCi/L	4.69		94	60-140			
<b>Blank Analyzed: 12/09/2010 (S011232-03)</b>										
Radium-228	0.069	1	pCi/L				-			U
<b>Duplicate Analyzed: 12/09/2010 (S011232-04)</b>										
Radium-228	0.203	1	pCi/L				-	0		U

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Debby Wilson  
 Project Manager

MWH-Pasadena/Boeing  
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## METHOD BLANK/QC DATA

### 905

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8641 Extracted: 12/04/10</b>										
<b>LCS Analyzed: 12/06/2010 (S011232-02)</b>										
Strontium-90	17	2	pCi/L	19.3		88	80-120			
<b>Blank Analyzed: 12/06/2010 (S011232-03)</b>										
Strontium-90	0.054	2	pCi/L				-			U
<b>Duplicate Analyzed: 12/06/2010 (S011232-04)</b>										
Strontium-90	-0.042	2	pCi/L		0.089		-	0		U

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Debby Wilson  
 Project Manager

MWH-Pasadena/Boeing  
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## METHOD BLANK/QC DATA

906

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8641 Extracted: 12/08/10</b>										
<b>LCS Analyzed: 12/09/2010 (S011232-02)</b>										
Tritium	2390	200	pCi/L	2560		93	80-120			
<b>Blank Analyzed: 12/09/2010 (S011232-03)</b>										
Tritium	-47.8	200	pCi/L				-			U
<b>Duplicate Analyzed: 12/09/2010 (S011232-04)</b>										
Tritium	-47.5	200	pCi/L			46.8	-	0		U

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Debby Wilson  
 Project Manager

MWH-Pasadena/Boeing  
618 Michillinda Avenue, Suite 200  
Arcadia, CA 91007  
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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
<b>Batch: 328385 Extracted: 11/24/10</b>										
<b>Blank Analyzed: 11/30/2010 (G0K240000385B)</b>					<b>Source:</b>					
1,2,3,4,6,7,8-HpCDD	0.0000014	0.00005	ug/L				-			J
1,2,3,4,6,7,8-HpCDF	0.000001	0.00005	ug/L				-			J, Q
1,2,3,4,7,8,9-HpCDF	0.00000083	0.00005	ug/L				-			J, Q
1,2,3,4,7,8-HxCDD	0.00000085	0.00005	ug/L				-			J, Q
1,2,3,4,7,8-HxCDF	0.00000063	0.00005	ug/L				-			J, Q
1,2,3,6,7,8-HxCDD	0.00000076	0.00005	ug/L				-			J
1,2,3,6,7,8-HxCDF	0.00000085	0.00005	ug/L				-			J, Q
1,2,3,7,8,9-HxCDD	0.0000012	0.00005	ug/L				-			J
1,2,3,7,8,9-HxCDF	0.00000063	0.00005	ug/L				-			J
1,2,3,7,8-PeCDD	ND	0.00005	ug/L				-			
1,2,3,7,8-PeCDF	0.0000009	0.00005	ug/L				-			J
2,3,4,6,7,8-HxCDF	0.00000072	0.00005	ug/L				-			J
2,3,4,7,8-PeCDF	0.00000082	0.00005	ug/L				-			J
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	0.0000052	0.0001	ug/L				-			J
OCDF	0.0000024	0.0001	ug/L				-			J
Total HpCDD	0.000002	0.00005	ug/L				-			J, Q
Total HpCDF	0.0000019	0.00005	ug/L				-			J, Q
Total HxCDD	0.0000028	0.00005	ug/L				-			J, Q
Total HxCDF	0.0000028	0.00005	ug/L				-			J, Q
Total PeCDD	0.0000024	0.00005	ug/L				-			J
Total PeCDF	0.0000017	0.00005	ug/L				-			J
Total TCDD	0.0000015	0.00001	ug/L				-			J, Q
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.002		ug/L	0.002		100	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.002		ug/L	0.002		102	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.002		ug/L	0.002		101	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.0017		ug/L	0.002		85	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0019		ug/L	0.002		96	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0018		ug/L	0.002		90	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.002		ug/L	0.002		98	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0021		ug/L	0.002		104	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0018		ug/L	0.002		89	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0017		ug/L	0.002		87	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0019		ug/L	0.002		94	28-136			

#### TestAmerica Irvine

Debby Wilson  
Project Manager

MWH-Pasadena/Boeing  
618 Michillinda Avenue, Suite 200  
Arcadia, CA 91007  
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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
<b>Batch: 328385 Extracted: 11/24/10</b>										
<b>Blank Analyzed: 11/30/2010 (G0K240000385B)</b>					<b>Source:</b>					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0017		ug/L	0.002		87	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.0016		ug/L	0.002		82	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0017		ug/L	0.002		83	24-169			
Surrogate: 13C-OCDD	0.0037		ug/L	0.004		93	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00076		ug/L	0.0008		95	35-197			
<b>LCS Analyzed: 11/30/2010 (G0K240000385C)</b>					<b>Source:</b>					
1,2,3,4,6,7,8-HpCDD	0.00109	0.00005	ug/L	0.001		109	70-140			
1,2,3,4,6,7,8-HpCDF	0.00117	0.00005	ug/L	0.001		117	82-122			
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	0.00127	0.00005	ug/L	0.001		127	70-164			
1,2,3,4,7,8-HxCDF	0.00116	0.00005	ug/L	0.001		116	72-134			
1,2,3,6,7,8-HxCDD	0.00118	0.00005	ug/L	0.001		118	76-134			
1,2,3,6,7,8-HxCDF	0.00114	0.00005	ug/L	0.001		114	84-130			
1,2,3,7,8,9-HxCDD	0.00126	0.00005	ug/L	0.001		126	64-162			
1,2,3,7,8,9-HxCDF	0.00116	0.00005	ug/L	0.001		116	78-130			
1,2,3,7,8-PeCDD	0.00116	0.00005	ug/L	0.001		116	70-142			
1,2,3,7,8-PeCDF	0.00116	0.00005	ug/L	0.001		116	80-134			
2,3,4,6,7,8-HxCDF	0.00112	0.00005	ug/L	0.001		112	70-156			
2,3,4,7,8-PeCDF	0.00121	0.00005	ug/L	0.001		121	68-160			
2,3,7,8-TCDD	0.000226	0.00001	ug/L	0.0002		113	67-158			
2,3,7,8-TCDF	0.000225	0.00001	ug/L	0.0002		113	75-158			
OCDD	0.00229	0.0001	ug/L	0.002		114	78-144			
OCDF	0.00227	0.0001	ug/L	0.002		114	63-170			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00193		ug/L	0.002		97	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.00185		ug/L	0.002		93	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0019		ug/L	0.002		95	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.00158		ug/L	0.002		79	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0017		ug/L	0.002		85	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00175		ug/L	0.002		87	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00173		ug/L	0.002		87	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00187		ug/L	0.002		94	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.00186		ug/L	0.002		93	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0018		ug/L	0.002		90	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00179		ug/L	0.002		89	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00176		ug/L	0.002		88	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 009 2010  
 Routine Outfall 009  
 Report Number: ITK2126

Sampled: 11/20/10  
 Received: 11/20/10

## METHOD BLANK/QC DATA

### EPA-5 1613Bx

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 328385 Extracted: 11/24/10</b>										
<b>LCS Analyzed: 11/30/2010 (G0K240000385C)</b>										
Surrogate: 13C-2,3,7,8-TCDD	0.00163		ug/L	0.002		82	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00162		ug/L	0.002		81	22-152			
Surrogate: 13C-OCDD	0.00345		ug/L	0.004		86	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000742		ug/L	0.0008		93	31-191			

TestAmerica Irvine

Debby Wilson  
 Project Manager

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

Project ID: Routine Outfall 009 2010  
 Routine Outfall 009  
 Report Number: ITK2126

Sampled: 11/20/10  
 Received: 11/20/10

## 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
ITK2126-01	Cadmium-200.8	Cadmium	ug/l	0.12	1.0	3.1
ITK2126-01	Chloride - 300.0	Chloride	mg/l	1.53	0.50	150
ITK2126-01	Copper-200.8	Copper	ug/l	3.22	2.00	14
ITK2126-01	Lead-200.8	Lead	ug/l	1.16	1.0	5.2
ITK2126-01	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.46	0.26	8
ITK2126-01	Sulfate-300.0	Sulfate	mg/l	3.51	0.50	300
ITK2126-01	TDS - SM2540C	Total Dissolved Solids	mg/l	118	10	950

## 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
ITK2126-02	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0.095	4.7	15

TestAmerica Irvine

Debby Wilson  
 Project Manager

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

Project ID: Routine Outfall 009 2010  
Routine Outfall 009  
Report Number: ITK2126

Sampled: 11/20/10  
Received: 11/20/10

## 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.
- M2** The MS and/or MSD were below the acceptance limits due to sample matrix interference. See 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.*

**ITK2126 <Page 33 of 36>**

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

Project ID: Routine Outfall 009 2010  
Routine Outfall 009  
Report Number: ITK2126

Sampled: 11/20/10  
Received: 11/20/10

## Certification Summary

### TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	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
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2540C	Water	X	
SM4500CN-E	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](http://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 009 2010  
Routine Outfall 009  
Report Number: ITK2126

Sampled: 11/20/10  
Received: 11/20/10

## Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec  
Samples: ITK2126-01

Analysis Performed: Gross Alpha  
Samples: ITK2126-01

Analysis Performed: Gross Beta  
Samples: ITK2126-01

Analysis Performed: Level 4 Data Package  
Samples: ITK2126-01

Analysis Performed: Radium, Combined  
Samples: ITK2126-01

Analysis Performed: Strontium 90  
Samples: ITK2126-01

Analysis Performed: Tritium  
Samples: ITK2126-01

Analysis Performed: Uranium, Combined  
Samples: ITK2126-01

## TestAmerica Irvine

Debby Wilson  
Project Manager

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

Project ID: Routine Outfall 009 2010  
Routine Outfall 009  
Report Number: ITK2126

Sampled: 11/20/10  
Received: 11/20/10

## TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8641  
Samples: ITK2126-01

Method Performed: 900  
Samples: ITK2126-01

Method Performed: 901.1  
Samples: ITK2126-01

Method Performed: 903.1  
Samples: ITK2126-01

Method Performed: 904  
Samples: ITK2126-01

Method Performed: 905  
Samples: ITK2126-01

Method Performed: 906  
Samples: ITK2126-01

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

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B  
Samples: ITK2126-01

## 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 009 GRAB Stormwater at <del>SW-13</del> WS-13		ANALYSIS REQUIRED																			
Project Manager: Bronwyn Kelly  Sampler: <i>Rick Banaea</i>		Phone Number: (626) 568-6691  Fax Number: (626) 568-6515		Oil & Grease (1664-HEM)																	Field readings: (Log in and include in report Temp and pH)  Temp °F = <i>11.51F</i>  pH = <i>8.0</i>  Time of readings = <i>10:40</i>  Comments		
Sample Description	Sample Matrix	Container Type	# of Cont.		Sampling Date/Time	Preservative	Bottle #																
Outfall 009	W	1L Amber	2		<i>11-20-2010 10:40</i>	HCl	1A, 1B	X															
These Samples are the Grab Portion of Outfall 009 for this storm event. Composite samples will follow and are to be added to this work order.																							
Relinquished By <i>Rick Banaea</i> Date/Time: <i>11-20-2010 1425</i>					Received By <i>[Signature]</i> Date/Time: <i>11-20-10 1425</i>					Turn-around time: (Check) 24 Hour: _____ 72 Hour: _____ 10 Day: _____ 48 Hour: _____ 5 Day: _____ Normal: <input checked="" type="checkbox"/>													
Relinquished By _____ Date/Time: _____					Received By _____ Date/Time: _____					Sample Integrity: (Check) Intact: _____ On Ice: _____													
Relinquished By _____ Date/Time: _____					Received By _____ Date/Time: _____					Data Requirements: (Check) No Level IV: _____ All Level IV: _____ NPDES Level IV: <input checked="" type="checkbox"/>													











# EBERLINE

SERVICES

EBERLINE ANALYTICAL CORPORATION

2030 Wright Avenue

Richmond, California 94804-3849

Phone (510) 235-2633 Fax (510) 235-0438

Toll Free (800) 841-5487

[www.eberlineservices.com](http://www.eberlineservices.com)

December 28, 2010

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

**Reference: Test America-Irvine ITK2126  
Eberline Analytical Report S011232-8641  
Sample Delivery Group 8641**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITK2126. The sample was received on November 23, 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 8641 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

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  $2\sigma$  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 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**

12/29/10  
\_\_\_\_\_  
**Date**

EBERLINE ANALYTICAL  
SDG 8641

SDG 8641  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITK2126

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 \_\_\_\_\_

*njwill*

Reviewed by \_\_\_\_\_

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
Report date 12/28/10

EBERLINE ANALYTICAL

SDG 8641

SDG 8641  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITK2126

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 12/28/10

EBERLINE ANALYTICAL

SDG 8641

SDG 8641  
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract ITK2126

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 12/28/10



EBERLINE ANALYTICAL

SDG 8641

Client Test America, Inc.

SDG 8641  
Contact N. Joseph Verville

LAB SAMPLE SUMMARY

Contract ITK2126

LAB							CHAIN OF	
SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CUSTODY	COLLECTED	
S011232-01	ITK2126-01	Boeing-SSFL	WATER			ITK2126	11/20/10 12:45	
S011232-02	Lab Control Sample		WATER					
S011232-03	Method Blank		WATER					
S011232-04	Duplicate (S011232-01)	Boeing-SSFL	WATER				11/20/10 12:45	

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 12/28/10

**EBERLINE ANALYTICAL**

SDG 8641

SDG 8641  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITK2126

**QC SUMMARY**

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL SAMPLE ID	DEPARTMENT SAMPLE ID
8641	ITK2126	ITK2126-01	WATER		10.0 L		11/23/10 3	S011232-01	8641-001
		Method Blank	WATER					S011232-03	8641-003
		Lab Control Sample	WATER					S011232-02	8641-002
		Duplicate (S011232-01)	WATER		10.0 L		11/23/10 3	S011232-04	8641-004

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 12/28/10

**EBERLINE ANALYTICAL**

SDG 8641

SDG 8641  
Contact N. Joseph Verville

**PREP BATCH SUMMARY**

Client Test America, Inc.  
Contract ITK2126

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI- FIERS
			BATCH	2σ %	CLIENT	MORE	RE BLANK	LCS	
<b>Beta Counting</b>									
AC	WATER	Radium-228 in Water	7271-024	10.4	1		1	1	1/1
SR	WATER	Strontium-90 in Water	7271-024	10.4	1		1	1	1/1
<b>Gas Proportional Counting</b>									
80A	WATER	Gross Alpha in Water	7271-024	20.6	1		1	1	1/1
80B	WATER	Gross Beta in Water	7271-024	11.0	1		1	1	1/1
<b>Gamma Spectroscopy</b>									
GAM	WATER	Gamma Emitters in Water	7271-024	7.0	1		1	1	1/1
<b>Kinetic Phosphorimetry, ug</b>									
U_T	WATER	Uranium, Total	7271-024		1		1	1	1/1
<b>Liquid Scintillation Counting</b>									
H	WATER	Tritium in Water	7271-024	10.0	1		1	1	1/1
<b>Radon Counting</b>									
RA	WATER	Radium-226 in Water	7271-024	16.4	1		1	1	1/1

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.  
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-PBS  
Version 3.06  
Report date 12/28/10

**EBERLINE ANALYTICAL**

SDG 8641

SDG <u>8641</u>
Contact <u>N. Joseph Verville</u>

Client <u>Test America, Inc.</u>
Contract <u>ITK2126</u>

**LAB WORK SUMMARY**

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX		SUF-						
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S011232-01	ITK2126-01		8641-001	80A/80		12/07/10	12/14/10	BW	Gross Alpha in Water	
11/20/10	Boeing-SSFL	WATER	8641-001	80B/80		12/07/10	12/14/10	BW	Gross Beta in Water	
11/23/10	ITK2126		8641-001	AC		12/09/10	12/14/10	BW	Radium-228 in Water	
			8641-001	GAM		12/06/10	12/08/10	MWT	Gamma Emitters in Water	
			8641-001	H		12/09/10	12/16/10	BW	Tritium in Water	
			8641-001	RA		12/08/10	12/09/10	BW	Radium-226 in Water	
			8641-001	SR		12/06/10	12/14/10	BW	Strontium-90 in Water	
			8641-001	U_T		12/15/10	12/17/10	BW	Uranium, Total	
S011232-02	Lab Control Sample		8641-002	80A/80		12/07/10	12/14/10	BW	Gross Alpha in Water	
		WATER	8641-002	80B/80		12/07/10	12/14/10	BW	Gross Beta in Water	
			8641-002	AC		12/09/10	12/14/10	BW	Radium-228 in Water	
			8641-002	GAM		12/06/10	12/08/10	MWT	Gamma Emitters in Water	
			8641-002	H		12/09/10	12/16/10	BW	Tritium in Water	
			8641-002	RA		12/08/10	12/09/10	BW	Radium-226 in Water	
			8641-002	SR		12/06/10	12/14/10	BW	Strontium-90 in Water	
			8641-002	U_T		12/15/10	12/17/10	BW	Uranium, Total	
S011232-03	Method Blank		8641-003	80A/80		12/09/10	12/14/10	BW	Gross Alpha in Water	
		WATER	8641-003	80B/80		12/09/10	12/14/10	BW	Gross Beta in Water	
			8641-003	AC		12/09/10	12/14/10	BW	Radium-228 in Water	
			8641-003	GAM		12/06/10	12/08/10	MWT	Gamma Emitters in Water	
			8641-003	H		12/09/10	12/16/10	BW	Tritium in Water	
			8641-003	RA		12/08/10	12/09/10	BW	Radium-226 in Water	
			8641-003	SR		12/06/10	12/14/10	BW	Strontium-90 in Water	
			8641-003	U_T		12/15/10	12/17/10	BW	Uranium, Total	
S011232-04	Duplicate (S011232-01)		8641-004	80A/80		12/09/10	12/14/10	BW	Gross Alpha in Water	
11/20/10	Boeing-SSFL	WATER	8641-004	80B/80		12/09/10	12/14/10	BW	Gross Beta in Water	
11/23/10			8641-004	AC		12/09/10	12/14/10	BW	Radium-228 in Water	
			8641-004	GAM		12/07/10	12/08/10	MWT	Gamma Emitters in Water	
			8641-004	H		12/09/10	12/16/10	BW	Tritium in Water	
			8641-004	RA		12/08/10	12/09/10	BW	Radium-226 in Water	
			8641-004	SR		12/06/10	12/14/10	BW	Strontium-90 in Water	
			8641-004	U_T		12/15/10	12/17/10	BW	Uranium, Total	

WORK SUMMARY

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EBERLINE ANALYTICAL

SDG 8641

Client Test America, Inc.

SDG 8641  
Contact N. Joseph Verville

WORK SUMMARY, cont.

Contract ITK2126

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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Version Ver 1.0

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**EBERLINE ANALYTICAL**

SDG 8641

8641-002

Lab Control Sample

**LAB CONTROL SAMPLE**

SDG <u>8641</u> Contact <u>N. Joseph Verville</u>	Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>
Lab sample id <u>S011232-02</u> Dept sample id <u>8641-002</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix _____ <u>WATER</u>

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	2σ LM	PROTOCOL
	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS TEST	pCi/L	pCi/L	%	(TOTAL)	LIMITS
Gross Alpha	53.1	2.9	0.723	3.00	80A	44.4	1.8	120	74-126	70-130
Gross Beta	42.7	1.7	1.58	4.00	80B	42.0	1.7	102	87-113	70-130
Tritium	2390	140	148	200	H	2560	100	93	88-112	80-120
Radium-226	61.5	2.7	0.765	1.00	RA	66.9	2.7	92	84-116	80-120
Radium-228	4.43	0.35	0.446	1.00	AC	4.69	0.19	94	87-113	60-140
Strontium-90	17.0	1.1	0.571	2.00	SR	19.3	0.77	88	88-112	80-120
Uranium, Total	63.5	7.2	0.194	1.00	U_T	62.5	2.5	102	88-112	80-120
Cobalt-60	103	5.8	3.61	10.0	GAM	104	4.2	99	90-110	80-120
Cesium-137	115	5.0	3.75	20.0	GAM	110	4.4	104	90-110	80-120

QC-LCS #76238

**EBERLINE ANALYTICAL**

SDG 8641

8641-004

ITK2126-01

**DUPLICATE**

SDG <u>8641</u> Contact <u>N. Joseph Verville</u> DUPLICATE Lab sample id <u>S011232-04</u> Dept sample id <u>8641-004</u>	ORIGINAL Lab sample id <u>S011232-01</u> Dept sample id <u>8641-001</u> Received <u>11/23/10</u>	Client <u>Test America, Inc.</u> Contract <u>ITK2126</u> Client sample id <u>ITK2126-01</u> Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u> Collected/Volume <u>11/20/10 12:45</u> <u>10.0 L</u> Chain of custody id <u>ITK2126</u>
--	---	--

ANALYTE	DUPLICATE	2σ ERR	MDA	RDL	QUALI-	TEST	ORIGINAL	2σ ERR	MDA	QUALI-	RPD	3σ	DER
	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS		pCi/L	(COUNT)	pCi/L	FIERS	%	TOT	σ
Gross Alpha	0.437	0.25	0.330	3.00	J	80A	0.709	0.31	0.365	J	47	114	1.3
Gross Beta	0.776	0.62	0.996	4.00	U	80B	1.48	0.57	0.873	J	62	115	1.6
Tritium	-47.5	88	151	200	U	H	46.8	89	148	U	-		1.5
Radium-226	-0.160	0.32	0.657	1.00	U	RA	0.047	0.40	0.732	U	-		0.8
Radium-228	0.203	0.27	0.537	1.00	U	AC	-0.066	0.21	0.471	U	-		1.6
Strontium-90	-0.042	0.59	1.40	2.00	U	SR	0.089	0.62	1.39	U	-		0.3
Uranium, Total	0.042	0.010	0.019	1.00	J	U_T	0.046	0.010	0.019	J	9	48	0.6
Potassium-40	U		20.1	25.0	U	GAM	U		16.5	U	-		0.3
Cesium-137	U		1.82	20.0	U	GAM	U		1.25	U	-		0.5

QC-DUP#1 76240

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E B E R L I N E   A N A L Y T I C A L  
SDG 8641

8641-001

ITK2126-01

D A T A   S H E E T

SDG <u>8641</u> Contact <u>N. Joseph Verville</u>	Client <u>Test America, Inc.</u> Contract <u>ITK2126</u>
Lab sample id <u>S011232-01</u> Dept sample id <u>8641-001</u> Received <u>11/23/10</u>	Client sample id <u>ITK2126-01</u> Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u> Collected/Volume <u>11/20/10 12:45</u> <u>10.0 L</u> Chain of custody id <u>ITK2126</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.709	0.31	0.365	3.00	J	80A
Gross Beta	12587472	1.48	0.57	0.873	4.00	J	80B
Tritium	10028178	46.8	89	148	200	U	H
Radium-226	13982633	0.047	0.40	0.732	1.00	U	RA
Radium-228	15262201	-0.066	0.21	0.471	1.00	U	AC
Strontium-90	10098972	0.089	0.62	1.39	2.00	U	SR
Uranium, Total		0.046	0.010	0.019	1.00	J	U_T
Potassium-40	13966002	U		16.5	25.0	U	GAM
Cesium-137	10045973	U		1.25	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>12/28/10</u>
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**EBERLINE ANALYTICAL**

SDG 8641

**LAB METHOD SUMMARY**

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER

SDG 8641

Contact N. Joseph Verville

Client Test America, Inc.

Contract ITK2126

**RESULTS**

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

Preparation batch 7271-024

S011232-01	8641-001	ITK2126-01	U
S011232-02	8641-002	Lab Control Sample	ok
S011232-03	8641-003	Method Blank	U
S011232-04	8641-004	Duplicate (S011232-01)	- 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 7271-024 2σ prep error 10.4 % Reference Lab Notebook No. 7271 pg.024

S011232-01	ITK2126-01	0.471	1.80			81	150		19	12/09/10	12/09	GRB-221
S011232-02	Lab Control Sample	0.446	1.80			76	150			12/09/10	12/09	GRB-222
S011232-03	Method Blank	0.454	1.80			78	150			12/09/10	12/09	GRB-223
S011232-04	Duplicate (S011232-01)	0.537	1.80			82	150		19	12/09/10	12/09	GRB-224

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 0.477 ± 0.083  
FOR 4 SAMPLES YIELD 79 ± 6

METHOD SUMMARIES

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**EBERLINE ANALYTICAL**

SDG 8641

**LAB METHOD SUMMARY**

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER  
 SDG 8641  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITK2126

**RESULTS**

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

Preparation batch 7271-024

S011232-01	8641-001	ITK2126-01	U
S011232-02	8641-002	Lab Control Sample	ok
S011232-03	8641-003	Method Blank	U
S011232-04	8641-004	Duplicate (S011232-01)	- 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 7271-024            2σ prep error 10.4 %            Reference Lab Notebook No. 7271 pg.024

S011232-01	ITK2126-01	1.39	0.500	49	50	16	12/04/10	12/06	GRB-221
S011232-02	Lab Control Sample	0.571	0.500	66	100		12/04/10	12/06	GRB-229
S011232-03	Method Blank	1.05	0.500	63	50		12/04/10	12/06	GRB-223
S011232-04	Duplicate (S011232-01)	1.40	0.500	50	50	16	12/04/10	12/06	GRB-204

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 1.10 ± 0.780  
 FOR 4 SAMPLES            YIELD 57 ± 18

METHOD SUMMARIES

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**EBERLINE ANALYTICAL**

SDG 8641

**LAB METHOD SUMMARY**

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Test 80B Matrix WATER  
 SDG 8641  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITK2126

**RESULTS**

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID		Gross Beta
Preparation batch 7271-024					
S011232-01	80	8641-001	ITK2126-01		1.48 J
S011232-02	80	8641-002	Lab Control Sample		ok
S011232-03	80	8641-003	Method Blank		U
S011232-04	80	8641-004	Duplicate (S011232-01)		ok U

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 7271-024      2σ prep error 11.0 %      Reference Lab Notebook No. 7271 pg.024															
S011232-01	80	ITK2126-01	0.873	0.300			15	400				17	12/07/10	12/07	GRB-105
S011232-02	80	Lab Control Sample	1.58	0.250			61	400					12/07/10	12/07	GRB-107
S011232-03	80	Method Blank	0.958	0.250			63	400					12/07/10	12/09	GRB-104
S011232-04	80	Duplicate (S011232-01)	0.996	0.300			13	400				19	12/07/10	12/09	GRB-103

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 1.10 ± 0.646  
 FOR 4 SAMPLES      RESIDUE 38 ± 55

METHOD SUMMARIES

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**EBERLINE ANALYTICAL**

SDG 8641

**LAB METHOD SUMMARY**

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Test U T Matrix WATER  
 SDG 8641  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITK2126

**RESULTS**

LAB	RAW	SUF-		Uranium,
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total
Preparation batch 7271-024				
S011232-01		8641-001	ITK2126-01	0.046 J
S011232-02		8641-002	Lab Control Sample	ok
S011232-03		8641-003	Method Blank	U
S011232-04		8641-004	Duplicate (S011232-01)	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 7271-024			2σ prep error		Reference Lab Notebook No. 7271 pg.024										
S011232-01		ITK2126-01	0.019	0.0200								25	12/15/10	12/15	KPA-001
S011232-02		Lab Control Sample	0.194	0.0200									12/15/10	12/15	KPA-001
S011232-03		Method Blank	0.019	0.0200									12/15/10	12/15	KPA-001
S011232-04		Duplicate (S011232-01)	0.019	0.0200								25	12/15/10	12/15	KPA-001

Nominal values and limits from method      1.00    0.0200      180

PROCEDURES REFERENCE    D5174

AVERAGES ± 2 SD      MDA 0.063 ± 0.175  
 FOR 4 SAMPLES      YIELD \_\_\_\_\_ ± \_\_\_\_\_

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**EBERLINE ANALYTICAL**

SDG 8641

**LAB METHOD SUMMARY**

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H      Matrix WATER  
 SDG 8641  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITK2126

**RESULTS**

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7271-024					
S011232-01		8641-001	ITK2126-01	U	
S011232-02		8641-002	Lab Control Sample	ok	
S011232-03		8641-003	Method Blank	U	
S011232-04		8641-004	Duplicate (S011232-01)	-	U

Nominal values and limits from method      RDLs (pCi/L)      200

**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 7271-024			2σ prep error 10.0 %	Reference	Lab Notebook No. 7271			pg.024							
S011232-01		ITK2126-01	148	0.0100			100		200			19	12/08/10	12/09	LSC-006
S011232-02		Lab Control Sample	148	0.100			10		200				12/08/10	12/09	LSC-006
S011232-03		Method Blank	152	0.100			10		200				12/08/10	12/09	LSC-006
S011232-04		Duplicate (S011232-01)	151	0.0100			100		200			19	12/08/10	12/09	LSC-006

Nominal values and limits from method      200      0.0100      100      180

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

AVERAGES ± 2 SD      MDA 150 ± 4.12  
 FOR 4 SAMPLES      YIELD 55 ± 104

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**EBERLINE ANALYTICAL**

SDG 8641

Test RA Matrix WATER  
 SDG 8641  
 Contact N. Joseph Verville

**LAB METHOD SUMMARY**

RADIUM-226 IN WATER  
 RADON COUNTING

Client Test America, Inc.  
 Contract ITK2126

**RESULTS**

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

Preparation batch 7271-024

S011232-01	8641-001	ITK2126-01	U
S011232-02	8641-002	Lab Control Sample	ok
S011232-03	8641-003	Method Blank	U
S011232-04	8641-004	Duplicate (S011232-01)	- 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 7271-024 2σ prep error 16.4 % Reference Lab Notebook No. 7271 pg.024

S011232-01	ITK2126-01	0.732	0.100	100	104	18	12/08/10	12/08	RN-011
S011232-02	Lab Control Sample	0.765	0.100	100	104	12/08/10	12/08	RN-010	
S011232-03	Method Blank	0.602	0.100	100	104	12/08/10	12/08	RN-012	
S011232-04	Duplicate (S011232-01)	0.657	0.100	100	104	18	12/08/10	12/08	RN-014

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 0.689 ± 0.147  
 FOR 4 SAMPLES YIELD 100 ± 0

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EBERLINE ANALYTICAL

SDG 8641

SDG 8641  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITK2126

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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EBERLINE ANALYTICAL

SDG 8641

SDG 8641  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITK2126

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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Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 12/28/10

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Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
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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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Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-RG</u>
Version	<u>3.06</u>
Report date	<u>12/28/10</u>

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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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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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Version 3.06  
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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'

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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

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SUMMARY DATA SECTION

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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.

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SUMMARY DATA SECTION

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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.

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**SUBCONTRACT ORDER  
TestAmerica Irvine**

**ITK2126**

8641

**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: CA - CALIFORNIA  
Receipt Temperature: 4.8 °C      Ice: (Y) / N

Standard TAT is requested unless specific due date is requested. => Due Date: \_\_\_\_\_ Initials: \_\_\_\_\_

Analysis	Units	Expires	Comments
<b>Sample ID: ITK2126-01 (Outfall 009 Composite - Water)</b>			
		Sampled: 11/20/10 12:45	PH=8, Temp=51F
Gamma Spec-O	mg/kg	11/20/11 12:45	Out Eberline, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	05/19/11 12:45	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	05/19/11 12:45	Out Eberline Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	12/18/10 12:45	
Radium, Combined-O	pCi/L	11/20/11 12:45	Out Eberline Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	11/20/11 12:45	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	11/20/11 12:45	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	11/20/11 12:45	Out Eberline, Boeing permit, DO NOT FILTER!
<i>Containers Supplied:</i>			
2.5 gal Poly (J)	500 mL Amber (K)		

Stephanie Avila  
Released By  
[Signature]  
Released By

11/22/10 17:00  
Date/Time  
11/23/10 10:30  
Date/Time

FedEx  
Received By  
11/22/10 17:00  
Date/Time  
Received By      Date/Time



# RICHMOND, CA LABORATORY

## SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 11/23/10 1030 CoC No. ITK2126

Container I.D. No. 66 CTEST Requested TAT (Days) 1 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
6. Number of samples in shipping container: 1 Sample Matrix W
7. Number of containers per sample: 2 (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 6 Preservative \_\_\_\_\_
13. Describe any anomalies: \_\_\_\_\_

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

15. Inspected by [Signature] Date: 11/23/10 Time: 1045

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>ITK 2126-01</u>	<u>260</u>						

Ion Chamber Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_  
 Alpha Meter Ser. No. \_\_\_\_\_ Calibration date \_\_\_\_\_  
 Beta/Gamma Meter Ser. No. 100482 Calibration date 24 SEP 10

## **APPENDIX G**

### **Section 27**

Outfall 009 – December 6, 2010

MEC<sup>X</sup> Data Validation Report

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# DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITL0524

Prepared by

MEC<sup>x</sup>, 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: ITL0524  
 Project Manager: B. Kelly  
 Matrix: Water  
 QC Level: IV  
 No. of Samples: 1  
 No. of Reanalyses/Dilutions: 1  
 Laboratory: TestAmerica-Irvine

**Table 1. Sample Identification**

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 009 (Comp)	ITL0524-02	G0K110579-001, S012154-001	Water	12/6/2010 03:11	1613B, 8624, 900, 901.1, 903.1, 904, 905, 906, EPA 245.1, EPA 245.1-Diss, SM 2540D
Outfall 009 (Comp)	ITL0524-02RE	G0K110579-001	Water	12/6/2010 03:11	1613B

**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 samples in this SDG were received at the remaining 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. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

---

**Data Qualifier Reference Table**


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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.**

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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 14, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>x</sup> 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 most target compounds. Most target compounds were reported as EMPCs in the method blank; however, due to the extent of the method blank contamination, the reviewer considered it appropriate to use the EMPCs to qualify sample results. The method blank result for OCDD was insufficient to qualify the sample result. All other 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. All sample totals containing one or more peaks detected in the method blank were qualified as estimated, “J.”

- Blank Spikes and Laboratory Control Samples: OPR 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. The laboratory performed a confirmation analysis for 2,3,7,8-TCDF detected in the sample; however, the confirmation result did not meet signal-to-noise criteria and was reported as a nondetect. The original result was rejected, “R,” in favor of the confirmation result.
- 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<sup>X</sup> 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, six months for ICP and ICP-MS metals and 28 days for mercury, was met.
- Tuning: Not applicable to this analysis.
- Calibration: Calibration criteria were met. Mercury initial calibration  $r^2$  values were  $\geq 0.995$  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: MS/MSD analyses were performed on the dissolved fraction of the sample in this SDG. Recoveries and the RPD were within method-established QC limits of 75-125% and  $\leq 20\%$ , respectively.
- Serial Dilution: No serial dilution analyses were performed.
- 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: January 27, 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. Aliquots for the remaining analyses 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 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. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- **Blanks:** There were no analytes detected in the method blanks or the KPA CCBs.
- **Blank Spikes and Laboratory Control Samples:** The recoveries were within laboratory-established control limits.
- **Laboratory Duplicates:** Laboratory duplicate analyses were performed on the sample in this SDG for all analyses. All RPDs were within the laboratory-established control limits.
- **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.
- **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 14, 2011

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC<sup>X</sup> 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 ITL0524

## Analysis Method 8642

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL0524-02	<b>Sample Date:</b>	12/6/2010 3:11:00 AM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Uranium, Total		0.093	1	0.019	pCi/L	Jb	J	DNQ

## Analysis Method 900

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL0524-02	<b>Sample Date:</b>	12/6/2010 3:11:00 AM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Gross Alpha	12587461	0.966	3	0.282	pCi/L	Jb	J	DNQ
Gross Beta	12587472	2.02	4	0.888	pCi/L	Jb	J	DNQ

## Analysis Method 901.1

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL0524-02	<b>Sample Date:</b>	12/6/2010 3:11:00 AM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Cesium-137	10045973	ND	20	1.24	pCi/L	U	U	
Potassium-40	13966002	ND	25	14.8	pCi/L	U	U	

## Analysis Method 903.1

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL0524-02	<b>Sample Date:</b>	12/6/2010 3:11:00 AM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Radium-226	13982633	0.272	1	0.456	pCi/L	U	U	

## Analysis Method 904

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL0524-02	<b>Sample Date:</b>	12/6/2010 3:11:00 AM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Radium-228	15262201	0.111	1	0.442	pCi/L	U	U	



*Analysis Method* 905

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<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL0524-02	<b>Sample Date:</b>	12/6/2010 3:11:00 AM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Strontium-90	10098972	0.134	2	0.68	pCi/L	U	U	

---

*Analysis Method* 906

---

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL0524-02	<b>Sample Date:</b>	12/6/2010 3:11:00 AM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Tritium	10028178	-10.5	500	356	pCi/L	U	U	

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*Analysis Method* EPA 245.1

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<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL0524-02	<b>Sample Date:</b>	12/6/2010 3:11:00 AM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

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*Analysis Method* EPA 245.1-Diss

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<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL0524-02	<b>Sample Date:</b>	12/6/2010 3:11:00 AM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

---

*Analysis Method EPA-5 1613B*

**Sample Name** Outfall 009 (Comp) **Matrix Type:** WATER **Validation Level:** IV  
**Lab Sample Name:** ITL0524-02 **Sample Date:** 12/6/2010 3:11:00 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	0.0000002	ug/L	J, B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.00005	0.0000019	ug/L	J, Q, B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.00005	0.0000037	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	0.0000019	ug/L		U	
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.00005	0.0000004	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.00005	0.0000031	ug/L		U	
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.00005	0.0000067	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.00005	0.0000019	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.00005	0.0000018	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.00005	0.0000025	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.00005	0.0000027	ug/L		U	
2,3,4,7,8-PeCDF	57117-31-4	ND	0.00005	0.0000028	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.00001	0.0000002	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.00001	0.0000044	ug/L		U	
2,3,7,8-TCDF	51207-31-9	4.4e-006	0.00001	0.0000009	ug/L	J	R	D
OCDD	3268-87-9	0.00073	0.0001	0.0000005	ug/L	B		
OCDF	39001-02-0	ND	0.0001	0.0000004	ug/L	J, Q, B	U	B
Total HpCDD	37871-00-4	0.00011	0.00005	0.0000002	ug/L	J, Q, B	J	B, DNQ, *III
Total HpCDF	38998-75-3	2.7e-005	0.00005	0.0000019	ug/L	J, Q, B	J	B, DNQ, *III
Total HxCDD	34465-46-8	ND	0.00005	0.0000003	ug/L		U	
Total HxCDF	55684-94-1	1.3e-005	0.00005	0.0000002	ug/L	J, Q, B	J	B, DNQ, *III
Total PeCDD	36088-22-9	ND	0.00005	0.0000018	ug/L		U	
Total PeCDF	30402-15-4	ND	0.00005	0.0000025	ug/L		U	
Total TCDD	41903-57-5	ND	0.00001	0.0000013	ug/L		U	
Total TCDF	55722-27-5	4.4e-006	0.00001	0.0000009	ug/L	J	J	DNQ

*Analysis Method SM 2540D*

**Sample Name** Outfall 009 (Comp) **Matrix Type:** Water **Validation Level:** IV  
**Lab Sample Name:** ITL0524-02 **Sample Date:** 12/6/2010 3:11:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	TSS	6.0	10	1.0	mg/l	Ja	J	DNQ

# **APPENDIX G**

## **Section 28**

Outfall 009 – December 6, 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 009 2010  
Routine Outfall 009

Sampled: 12/06/10  
Received: 12/06/10  
Issued: 01/11/11 11:41

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, 3 pages, are included and are an integral part of this report.*

*This entire report was reviewed and approved for release.*

## SAMPLE CROSS REFERENCE

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**

ITL0524-01

ITL0524-02

ITL0524-03

**CLIENT ID**

Outfall 009 (Grab)

Outfall 009 (Comp)

Trip Blank

**MATRIX**

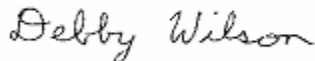
Water

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 009 2010  
Routine Outfall 009  
Report Number: ITL0524

Sampled: 12/06/10  
Received: 12/06/10

## HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-01 (Outfall 009 (Grab) - Water)</b>									
<b>Reporting Units: mg/l</b>									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	10L1431	1.3	4.7	ND	1	DA	12/13/10	

TestAmerica Irvine

Debby Wilson  
Project Manager

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**ITL0524 <Page 2 of 37>**

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

Project ID: Routine Outfall 009 2010  
Routine Outfall 009  
Report Number: ITL0524

Sampled: 12/06/10  
Received: 12/06/10

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water)</b>									
<b>Reporting Units: ug/l</b>									
Mercury	EPA 245.1	10L0745	0.10	0.20	ND	1	DB	12/07/10	
Antimony	EPA 200.8	10L0867	0.30	2.0	ND	1	NH	12/09/10	
Cadmium	EPA 200.8	10L0867	0.10	1.0	ND	1	NH	12/09/10	
<b>Copper</b>	EPA 200.8	10L0867	0.500	2.00	<b>3.25</b>	1	NH	12/09/10	
<b>Lead</b>	EPA 200.8	10L0867	0.20	1.0	<b>2.0</b>	1	NH	12/09/10	
Thallium	EPA 200.8	10L0867	0.20	1.0	ND	1	NH	12/09/10	

TestAmerica Irvine

Debby Wilson  
Project Manager

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**ITL0524 <Page 3 of 37>**

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

Project ID: Routine Outfall 009 2010  
 Routine Outfall 009  
 Report Number: ITL0524

Sampled: 12/06/10  
 Received: 12/06/10

## DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Mercury	EPA 245.1-Diss	10L0914	0.10	0.20	ND	1	DB	12/08/10	
Antimony	EPA 200.8-Diss	10L1101	0.30	2.0	ND	1	RDC	12/09/10	
Cadmium	EPA 200.8-Diss	10L1101	0.10	1.0	ND	1	RDC	12/09/10	
<b>Copper</b>	EPA 200.8-Diss	10L1101	0.500	2.00	<b>1.68</b>	1	RDC	12/09/10	Ja
<b>Lead</b>	EPA 200.8-Diss	10L1101	0.20	1.0	<b>0.21</b>	1	RDC	12/09/10	Ja
Thallium	EPA 200.8-Diss	10L1101	0.20	1.0	ND	1	RDC	12/09/10	

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MWH-Pasadena/Boeing  
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 Arcadia, CA 91007  
 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009 2010  
 Routine Outfall 009  
 Report Number: ITL0524

Sampled: 12/06/10  
 Received: 12/06/10

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	10L0579	0.25	0.50	<b>1.3</b>	1	NN	12/06/10	
Total Cyanide	SM4500CN-E	10L0786	0.0022	0.0050	ND	1	HH	12/07/10	
Nitrate/Nitrite-N	EPA 300.0	10L0579	0.15	0.26	<b>0.34</b>	1	NN	12/06/10	
Sulfate	EPA 300.0	10L0579	0.20	0.50	<b>2.2</b>	1	NN	12/06/10	
Total Dissolved Solids	SM2540C	10L0663	1.0	10	<b>30</b>	1	MC	12/07/10	
Total Suspended Solids	SM 2540D	10L0787	1.0	10	<b>6.0</b>	1	MC	12/07/10	Ja

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Arcadia, CA 91007  
Attention: Bronwyn Kelly

Project ID: Routine Outfall 009 2010  
Routine Outfall 009  
Report Number: ITL0524

Sampled: 12/06/10  
Received: 12/06/10

## EPA-5 1613Bx

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	342249	0.00000026	0.00005	4.8e-005	0.97	MO	12/11/10	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	342249	0.0000019	0.00005	1.5e-005	0.97	MO	12/11/10	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	342249	0.0000037	0.00005	ND	0.97	MO	12/11/10	
1,2,3,4,7,8-HxCDD	EPA-5 1613B	342249	0.00000043	0.00005	ND	0.97	MO	12/11/10	
1,2,3,4,7,8-HxCDF	EPA-5 1613B	342249	0.0000019	0.00005	ND	0.97	MO	12/11/10	
1,2,3,6,7,8-HxCDD	EPA-5 1613B	342249	0.000004	0.00005	ND	0.97	MO	12/11/10	
1,2,3,6,7,8-HxCDF	EPA-5 1613B	342249	0.0000031	0.00005	ND	0.97	MO	12/11/10	
1,2,3,7,8,9-HxCDD	EPA-5 1613B	342249	0.0000067	0.00005	ND	0.97	MO	12/11/10	
1,2,3,7,8,9-HxCDF	EPA-5 1613B	342249	0.0000019	0.00005	ND	0.97	MO	12/11/10	
1,2,3,7,8-PeCDD	EPA-5 1613B	342249	0.0000018	0.00005	ND	0.97	MO	12/11/10	
1,2,3,7,8-PeCDF	EPA-5 1613B	342249	0.0000025	0.00005	ND	0.97	MO	12/11/10	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	342249	0.0000027	0.00005	ND	0.97	MO	12/11/10	
2,3,4,7,8-PeCDF	EPA-5 1613B	342249	0.0000028	0.00005	ND	0.97	MO	12/11/10	
2,3,7,8-TCDD	EPA-5 1613B	342249	0.00000029	0.00001	ND	0.97	MO	12/11/10	
2,3,7,8-TCDF	EPA-5 1613B	342249	0.00000097	0.00001	4.4e-006	0.97	MO	12/11/10	J
OCDD	EPA-5 1613B	342249	0.00000059	0.0001	0.00073	0.97	MO	12/11/10	B
OCDF	EPA-5 1613B	342249	0.00000047	0.0001	3.3e-005	0.97	MO	12/11/10	J, Q, B
Total HpCDD	EPA-5 1613B	342249	0.00000026	0.00005	0.00011	0.97	MO	12/11/10	J, Q, B
Total HpCDF	EPA-5 1613B	342249	0.0000019	0.00005	2.7e-005	0.97	MO	12/11/10	J, Q, B
Total HxCDD	EPA-5 1613B	342249	0.00000036	0.00005	ND	0.97	MO	12/11/10	
Total HxCDF	EPA-5 1613B	342249	0.0000002	0.00005	1.3e-005	0.97	MO	12/11/10	J, Q, B
Total PeCDD	EPA-5 1613B	342249	0.0000018	0.00005	ND	0.97	MO	12/11/10	
Total PeCDF	EPA-5 1613B	342249	0.0000025	0.00005	ND	0.97	MO	12/11/10	
Total TCDD	EPA-5 1613B	342249	0.0000013	0.00001	ND	0.97	MO	12/11/10	
Total TCDF	EPA-5 1613B	342249	0.00000097	0.00001	4.4e-006	0.97	MO	12/11/10	J

Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)	39 %
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF (28-143%)	47 %
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF (26-138%)	44 %
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)	35 %
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)	45 %
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)	41 %
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)	48 %
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)	41 %
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)	28 %
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)	33 %
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)	48 %
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	32 %
Surrogate: 13C-2,3,7,8-TCDD (25-164%)	37 %
Surrogate: 13C-2,3,7,8-TCDF (24-169%)	39 %
Surrogate: 13C-OCDD (17-157%)	37 %
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)	98 %

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Project ID: Routine Outfall 009 2010  
Routine Outfall 009  
Report Number: ITL0524

Sampled: 12/06/10  
Received: 12/06/10

## EPA-5 1613Bx

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02RE (Outfall 009 (Comp) - Water) - cont.</b>									
<b>Reporting Units: ug/L</b>									
2,3,7,8-TCDF	EPA-5 1613B	342249	0.0000044	0.00001	ND	0.97	MO	12/14/10	
<i>Surrogate: 13C-2,3,7,8-TCDF (24-169%)</i>					39 %				
<i>Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)</i>					85 %				

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Sampled: 12/06/10  
Received: 12/06/10

## 8642

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: pCi/L									
Uranium, Total	8642	8642		1	0.093	1	CSS	12/21/10	Jb

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Received: 12/06/10

## 900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: pCi/L									
Gross Alpha	900	8642		3	0.966	1	KT	12/17/10	Jb
Gross Beta	900	8642		4	2.02	1	KT	12/17/10	Jb

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Sampled: 12/06/10  
Received: 12/06/10

## 901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: pCi/L									
Cesium-137	901.1	8642		20	ND	1	LS	12/16/10	U
Potassium-40	901.1	8642		25	ND	1	LS	12/16/10	U

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Received: 12/06/10

## 903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: pCi/L									
Radium-226	903.1	8642		1	0.272	1	TM	12/29/10	U

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Sampled: 12/06/10  
Received: 12/06/10

## 904

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: pCi/L									
Radium-228	904	8642		1	0.111	1	ASM	12/21/10	U

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Sampled: 12/06/10  
Received: 12/06/10

## 905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: pCi/L									
Strontium-90	905	8642		2	0.134	1	AI	12/20/10	U

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Report Number: ITL0524

Sampled: 12/06/10  
Received: 12/06/10

## 906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: pCi/L									
Tritium	906	8642		500	-10.5	1	JO	12/22/10	U

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Report Number: ITL0524

Sampled: 12/06/10  
Received: 12/06/10

## SHORT HOLD TIME DETAIL REPORT

	<b>Hold Time (in days)</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>	<b>Date/Time Extracted</b>	<b>Date/Time Analyzed</b>
<b>Sample ID: Outfall 009 (Comp) (ITL0524-02) - Water</b>					
EPA 300.0	2	12/06/2010 03:11	12/06/2010 19:10	12/06/2010 21:20	12/06/2010 21:39
Filtration	1	12/06/2010 03:11	12/06/2010 19:10	12/07/2010 13:54	12/07/2010 13:56

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Sampled: 12/06/10  
 Received: 12/06/10

## METHOD BLANK/QC DATA

### HEXANE EXTRACTABLE MATERIAL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 10L1431 Extracted: 12/13/10</b>										
<b>Blank Analyzed: 12/13/2010 (10L1431-BLK1)</b>										
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
<b>LCS Analyzed: 12/13/2010 (10L1431-BS1)</b>										
Hexane Extractable Material (Oil & Grease)	18.7	5.0	mg/l	20.0		94	78-114			MNR1
<b>LCS Dup Analyzed: 12/13/2010 (10L1431-BSD1)</b>										
Hexane Extractable Material (Oil & Grease)	19.0	5.0	mg/l	20.0		95	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
<b>Batch: 10L0745 Extracted: 12/07/10</b>										
<b>Blank Analyzed: 12/07/2010 (10L0745-BLK1)</b>										
Mercury	ND	0.20	ug/l							
<b>LCS Analyzed: 12/07/2010 (10L0745-BS1)</b>										
Mercury	8.25	0.20	ug/l	8.00		103	85-115			
<b>Matrix Spike Analyzed: 12/07/2010 (10L0745-MS1)</b>										
					<b>Source: ITL0497-12</b>					
Mercury	8.11	0.20	ug/l	8.00	ND	101	70-130			
<b>Matrix Spike Dup Analyzed: 12/07/2010 (10L0745-MSD1)</b>										
					<b>Source: ITL0497-12</b>					
Mercury	8.18	0.20	ug/l	8.00	ND	102	70-130	0.8	20	
<b>Batch: 10L0867 Extracted: 12/08/10</b>										
<b>Blank Analyzed: 12/09/2010 (10L0867-BLK1)</b>										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
<b>LCS Analyzed: 12/09/2010 (10L0867-BS1)</b>										
Antimony	83.2	2.0	ug/l	80.0		104	85-115			
Cadmium	84.2	1.0	ug/l	80.0		105	85-115			
Copper	84.0	2.00	ug/l	80.0		105	85-115			
Lead	83.9	1.0	ug/l	80.0		105	85-115			
Thallium	83.9	1.0	ug/l	80.0		105	85-115			

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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
<b>Batch: 10L0867 Extracted: 12/08/10</b>										
<b>Matrix Spike Analyzed: 12/09/2010 (10L0867-MS1)</b>					<b>Source: ITL0524-02</b>					
Antimony	82.2	2.0	ug/l	80.0	ND	103	70-130			
Cadmium	83.3	1.0	ug/l	80.0	ND	104	70-130			
Copper	84.1	2.00	ug/l	80.0	3.25	101	70-130			
Lead	84.9	1.0	ug/l	80.0	2.00	104	70-130			
Thallium	83.0	1.0	ug/l	80.0	ND	104	70-130			
<b>Matrix Spike Dup Analyzed: 12/09/2010 (10L0867-MSD1)</b>					<b>Source: ITL0524-02</b>					
Antimony	83.0	2.0	ug/l	80.0	ND	104	70-130	1	20	
Cadmium	84.9	1.0	ug/l	80.0	ND	106	70-130	2	20	
Copper	82.9	2.00	ug/l	80.0	3.25	100	70-130	2	20	
Lead	87.1	1.0	ug/l	80.0	2.00	106	70-130	3	20	
Thallium	85.5	1.0	ug/l	80.0	ND	107	70-130	3	20	

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Sampled: 12/06/10  
 Received: 12/06/10

## METHOD BLANK/QC DATA

### DISSOLVED METALS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 10L0914 Extracted: 12/08/10</b>										
<b>Blank Analyzed: 12/08/2010 (10L0914-BLK1)</b>										
Mercury	ND	0.20	ug/l							
<b>LCS Analyzed: 12/08/2010 (10L0914-BS1)</b>										
Mercury	8.05	0.20	ug/l	8.00		101	85-115			
<b>Matrix Spike Analyzed: 12/08/2010 (10L0914-MS1)</b>										
					<b>Source: ITL0524-02</b>					
Mercury	8.08	0.20	ug/l	8.00	ND	101	70-130			
<b>Matrix Spike Dup Analyzed: 12/08/2010 (10L0914-MSD1)</b>										
					<b>Source: ITL0524-02</b>					
Mercury	7.90	0.20	ug/l	8.00	ND	99	70-130	2	20	
<b>Batch: 10L1101 Extracted: 12/09/10</b>										
<b>Blank Analyzed: 12/09/2010 (10L1101-BLK1)</b>										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
<b>LCS Analyzed: 12/09/2010 (10L1101-BS1)</b>										
Antimony	77.6	2.0	ug/l	80.0		97	85-115			
Cadmium	76.0	1.0	ug/l	80.0		95	85-115			
Copper	79.1	2.00	ug/l	80.0		99	85-115			
Lead	77.7	1.0	ug/l	80.0		97	85-115			
Thallium	78.1	1.0	ug/l	80.0		98	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
<b>Batch: 10L1101 Extracted: 12/09/10</b>										
<b>Matrix Spike Analyzed: 12/09/2010 (10L1101-MS1)</b>					<b>Source: ITL0791-01</b>					
Antimony	77.4	2.0	ug/l	80.0	ND	97	70-130			
Cadmium	72.9	1.0	ug/l	80.0	ND	91	70-130			
Copper	78.6	2.00	ug/l	80.0	0.855	97	70-130			
Lead	76.9	1.0	ug/l	80.0	ND	96	70-130			
Thallium	76.1	1.0	ug/l	80.0	ND	95	70-130			
<b>Matrix Spike Dup Analyzed: 12/09/2010 (10L1101-MSD1)</b>					<b>Source: ITL0791-01</b>					
Antimony	75.7	2.0	ug/l	80.0	ND	95	70-130	2	20	
Cadmium	73.9	1.0	ug/l	80.0	ND	92	70-130	1	20	
Copper	78.8	2.00	ug/l	80.0	0.855	97	70-130	0.2	20	
Lead	77.2	1.0	ug/l	80.0	ND	97	70-130	0.4	20	
Thallium	77.2	1.0	ug/l	80.0	ND	97	70-130	1	20	

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 Project Manager



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 618 Michillinda Avenue, Suite 200  
 Arcadia, CA 91007  
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Project ID: Routine Outfall 009 2010  
 Routine Outfall 009  
 Report Number: ITL0524

Sampled: 12/06/10  
 Received: 12/06/10

## METHOD BLANK/QC DATA

### INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 10L0579 Extracted: 12/06/10</b>										
<b>Blank Analyzed: 12/06/2010 (10L0579-BLK1)</b>										
Chloride	ND	0.50	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
<b>LCS Analyzed: 12/06/2010 (10L0579-BS1)</b>										
Chloride	4.93	0.50	mg/l	5.00		99	90-110			M-3
Sulfate	10.1	0.50	mg/l	10.0		101	90-110			M-3
<b>Duplicate Analyzed: 12/06/2010 (10L0579-DUP1)</b>										
					<b>Source: ITL0429-01</b>					
Chloride	842	50	mg/l		841			0.1		
Nitrate/Nitrite-N	ND	26	mg/l		ND					
Sulfate	83.5	50	mg/l		80.1			4		
<b>Matrix Spike Analyzed: 12/06/2010 (10L0579-MS1)</b>										
					<b>Source: ITL0429-02</b>					
Chloride	67.0	5.0	mg/l	50.0	16.9	100	80-120			
Sulfate	378	25	mg/l	100	323	55	80-120			M2
<b>Matrix Spike Dup Analyzed: 12/06/2010 (10L0579-MSD1)</b>										
					<b>Source: ITL0429-02</b>					
Chloride	67.3	5.0	mg/l	50.0	16.9	101	80-120	0.6	20	
Sulfate	378	25	mg/l	100	323	55	80-120	0.01	20	M2
<b>Batch: 10L0663 Extracted: 12/07/10</b>										
<b>Blank Analyzed: 12/07/2010 (10L0663-BLK1)</b>										
Total Dissolved Solids	ND	10	mg/l							
<b>LCS Analyzed: 12/07/2010 (10L0663-BS1)</b>										
Total Dissolved Solids	994	10	mg/l	1000		99	90-110			

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 Project Manager

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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
<b>Batch: 10L0663 Extracted: 12/07/10</b>										
<b>Duplicate Analyzed: 12/07/2010 (10L0663-DUP1)</b>										
Total Dissolved Solids	1090	10	mg/l		1110			1	10	
<b>Source: ITL0458-01</b>										
<b>Batch: 10L0786 Extracted: 12/07/10</b>										
<b>Blank Analyzed: 12/07/2010 (10L0786-BLK1)</b>										
Total Cyanide	ND	0.0050	mg/l							
<b>LCS Analyzed: 12/07/2010 (10L0786-BS1)</b>										
Total Cyanide	0.193	0.0050	mg/l	0.200		96	90-110			
<b>Matrix Spike Analyzed: 12/07/2010 (10L0786-MS1)</b>										
Total Cyanide	0.186	0.0050	mg/l	0.200	ND	93	70-115			
<b>Source: ITL0520-03</b>										
<b>Matrix Spike Dup Analyzed: 12/07/2010 (10L0786-MSD1)</b>										
Total Cyanide	0.186	0.0050	mg/l	0.200	ND	93	70-115	0.2	15	
<b>Source: ITL0520-03</b>										
<b>Batch: 10L0787 Extracted: 12/07/10</b>										
<b>Blank Analyzed: 12/07/2010 (10L0787-BLK1)</b>										
Total Suspended Solids	ND	10	mg/l							
<b>LCS Analyzed: 12/07/2010 (10L0787-BS1)</b>										
Total Suspended Solids	987	10	mg/l	1000		99	85-115			
<b>Duplicate Analyzed: 12/07/2010 (10L0787-DUP1)</b>										
Total Suspended Solids	19.0	10	mg/l		19.0			0	10	
<b>Source: ITL0509-01</b>										

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 Project Manager

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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
<b>Batch: 342249 Extracted: 12/08/10</b>										
<b>Blank Analyzed: 12/11/2010 (G0L080000249B)</b>					<b>Source:</b>					
1,2,3,4,6,7,8-HpCDD	5e-006	0.00005	ug/L				-			J, Q
1,2,3,4,6,7,8-HpCDF	6.4e-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	2.5e-006	0.00005	ug/L				-			J, Q
1,2,3,4,7,8-HxCDF	2.8e-006	0.00005	ug/L				-			J, Q
1,2,3,6,7,8-HxCDD	2.5e-006	0.00005	ug/L				-			J, Q
1,2,3,6,7,8-HxCDF	2.8e-006	0.00005	ug/L				-			J, Q
1,2,3,7,8,9-HxCDD	3.2e-006	0.00005	ug/L				-			J
1,2,3,7,8,9-HxCDF	2.2e-006	0.00005	ug/L				-			J, Q
1,2,3,7,8-PeCDD	3.2e-006	0.00005	ug/L				-			J, Q
1,2,3,7,8-PeCDF	3.1e-006	0.00005	ug/L				-			J, Q
2,3,4,6,7,8-HxCDF	2.6e-006	0.00005	ug/L				-			J, Q
2,3,4,7,8-PeCDF	3.9e-006	0.00005	ug/L				-			J, Q
2,3,7,8-TCDD	ND	0.00001	ug/L				-			
2,3,7,8-TCDF	ND	0.00001	ug/L				-			
OCDD	2.6e-005	0.0001	ug/L				-			J
OCDF	7.8e-006	0.0001	ug/L				-			J, Q
Total HpCDD	5e-006	0.00005	ug/L				-			J, Q
Total HpCDF	6.4e-006	0.00005	ug/L				-			J, Q
Total HxCDD	8.2e-006	0.00005	ug/L				-			J, Q
Total HxCDF	1e-005	0.00005	ug/L				-			J, Q
Total PeCDD	3.2e-006	0.00005	ug/L				-			J, Q
Total PeCDF	7e-006	0.00005	ug/L				-			J, Q
Total TCDD	ND	0.00001	ug/L				-			
Total TCDF	ND	0.00001	ug/L				-			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.0011		ug/L	0.002		57	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.0013		ug/L	0.002		66	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0013		ug/L	0.002		63	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.001		ug/L	0.002		52	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.0012		ug/L	0.002		58	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0012		ug/L	0.002		58	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.0012		ug/L	0.002		62	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.0012		ug/L	0.002		58	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.0011		ug/L	0.002		57	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0012		ug/L	0.002		58	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.0013		ug/L	0.002		64	28-136			

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Project Manager

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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
<b>Batch: 342249 Extracted: 12/08/10</b>										
<b>Blank Analyzed: 12/11/2010 (G0L080000249B)</b>					<b>Source:</b>					
Surrogate: 13C-2,3,4,7,8-PeCDF	0.0011		ug/L	0.002		56	21-178			
Surrogate: 13C-2,3,7,8-TCDD	0.00097		ug/L	0.002		49	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.001		ug/L	0.002		52	24-169			
Surrogate: 13C-OCDD	0.0023		ug/L	0.004		58	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.0008		ug/L	0.0008		100	35-197			
<b>LCS Analyzed: 12/11/2010 (G0L080000249C)</b>					<b>Source:</b>					
1,2,3,4,6,7,8-HpCDD	0.00112	0.00005	ug/L	0.001		112	70-140			B
1,2,3,4,6,7,8-HpCDF	0.00116	0.00005	ug/L	0.001		116	82-122			B
1,2,3,4,7,8,9-HpCDF	0.00113	0.00005	ug/L	0.001		113	78-138			
1,2,3,4,7,8-HxCDD	0.00122	0.00005	ug/L	0.001		122	70-164			B
1,2,3,4,7,8-HxCDF	0.00118	0.00005	ug/L	0.001		118	72-134			B
1,2,3,6,7,8-HxCDD	0.00109	0.00005	ug/L	0.001		109	76-134			B
1,2,3,6,7,8-HxCDF	0.00109	0.00005	ug/L	0.001		109	84-130			B
1,2,3,7,8,9-HxCDD	0.00113	0.00005	ug/L	0.001		113	64-162			B
1,2,3,7,8,9-HxCDF	0.00112	0.00005	ug/L	0.001		112	78-130			B
1,2,3,7,8-PeCDD	0.00109	0.00005	ug/L	0.001		109	70-142			B
1,2,3,7,8-PeCDF	0.00116	0.00005	ug/L	0.001		116	80-134			B
2,3,4,6,7,8-HxCDF	0.00109	0.00005	ug/L	0.001		109	70-156			B
2,3,4,7,8-PeCDF	0.00116	0.00005	ug/L	0.001		116	68-160			B
2,3,7,8-TCDD	0.000223	0.00001	ug/L	0.0002		111	67-158			
2,3,7,8-TCDF	0.000218	0.00001	ug/L	0.0002		109	75-158			
OCDD	0.00208	0.0001	ug/L	0.002		104	78-144			B
OCDF	0.00224	0.0001	ug/L	0.002		112	63-170			B
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.000878		ug/L	0.002		44	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.000898		ug/L	0.002		45	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.000959		ug/L	0.002		48	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	0.000822		ug/L	0.002		41	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.000938		ug/L	0.002		47	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.00101		ug/L	0.002		51	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00101		ug/L	0.002		51	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.000923		ug/L	0.002		46	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	0.000948		ug/L	0.002		47	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.000963		ug/L	0.002		48	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00103		ug/L	0.002		51	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.000982		ug/L	0.002		49	13-328			

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Debby Wilson  
Project Manager

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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
<b>Batch: 342249 Extracted: 12/08/10</b>										
<b>LCS Analyzed: 12/11/2010 (G0L080000249C)</b>										
Surrogate: 13C-2,3,7,8-TCDD	0.000869		ug/L	0.002		44	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.000902		ug/L	0.002		45	22-152			
Surrogate: 13C-OCDD	0.00189		ug/L	0.004		47	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000806		ug/L	0.0008		101	31-191			

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## METHOD BLANK/QC DATA

**8642**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8642 Extracted: 12/21/10</b>										
<b>LCS Analyzed: 12/21/2010 (S012154-03)</b>										
Uranium, Total	56	1	pCi/L	56.5		99	80-120			
<b>Blank Analyzed: 12/21/2010 (S012154-04)</b>										
Uranium, Total	-0.005	1	pCi/L							U
<b>Duplicate Analyzed: 12/21/2010 (S012154-05)</b>										
Uranium, Total	0.108	1	pCi/L		0.093			15		Jb

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 Project Manager

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## METHOD BLANK/QC DATA

### 900

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8642 Extracted: 12/16/10</u></b>										
<b>LCS Analyzed: 12/20/2010 (S012154-03)</b>										
Gross Alpha	41.5	3	pCi/L	40.4		103	70-130			
Gross Beta	34.8	4	pCi/L	35.1		99	70-130			
<b>Blank Analyzed: 12/21/2010 (S012154-04)</b>										
Gross Alpha	-0.13	3	pCi/L							U
Gross Beta	0.133	4	pCi/L							U
<b>Duplicate Analyzed: 12/20/2010 (S012154-05)</b>										
Gross Alpha	0.816	3	pCi/L		0.966			17		Jb
Gross Beta	2.12	4	pCi/L		2.02			5		Jb

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 Project Manager

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## METHOD BLANK/QC DATA

### 901.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8642 Extracted: 12/16/10</u></b>										
<b>LCS Analyzed: 12/16/2010 (S012154-03)</b>										
Cobalt-60	113	10	pCi/L	103		110	80-120			
Cesium-137	122	20	pCi/L	110		111	80-120			
<b>Blank Analyzed: 12/16/2010 (S012154-04)</b>										
Cesium-137	ND	20	pCi/L							U
Potassium-40	ND	25	pCi/L							U
<b>Duplicate Analyzed: 12/16/2010 (S012154-05)</b>										
Cesium-137	ND	20	pCi/L		0			0		U
Potassium-40	ND	25	pCi/L		0			0		U

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## METHOD BLANK/QC DATA

### 903.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8642 Extracted: 12/29/10</b>										
<b>LCS Analyzed: 12/29/2010 (S012154-03)</b>										
Radium-226	55.9	1	pCi/L	55.7		100	80-120			
<b>Blank Analyzed: 12/29/2010 (S012154-04)</b>										
Radium-226	0.094	1	pCi/L				-			U
<b>Duplicate Analyzed: 12/29/2010 (S012154-05)</b>										
Radium-226	0.219	1	pCi/L		0.272		-	0		U

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 Project Manager

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## METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8642 Extracted: 12/21/10</b>										
<b>LCS Analyzed: 12/21/2010 (S012154-03)</b>										
Radium-228	4.22	1	pCi/L	4.67		90	60-140			
<b>Blank Analyzed: 12/21/2010 (S012154-04)</b>										
Radium-228	-0.019	1	pCi/L							U
<b>Duplicate Analyzed: 12/21/2010 (S012154-05)</b>										
Radium-228	0.047	1	pCi/L		0.111			0		U

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 Project Manager

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## METHOD BLANK/QC DATA

### 905

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8642 Extracted: 12/16/10</b>										
<b>LCS Analyzed: 12/20/2010 (S012154-03)</b>										
Strontium-90	15.8	2	pCi/L	17.5		90	80-120			
<b>Blank Analyzed: 12/20/2010 (S012154-04)</b>										
Strontium-90	-0.065	2	pCi/L							U
<b>Duplicate Analyzed: 12/20/2010 (S012154-05)</b>										
Strontium-90	0.058	2	pCi/L		0.134			0		U

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Sampled: 12/06/10  
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## METHOD BLANK/QC DATA

906

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8642 Extracted: 12/22/10</b>										
<b>LCS Analyzed: 12/22/2010 (S012154-03)</b>										
Tritium	2180	500	pCi/L	2550		85	80-120			
<b>Blank Analyzed: 12/22/2010 (S012154-04)</b>										
Tritium	-148	500	pCi/L							U
<b>Duplicate Analyzed: 12/22/2010 (S012154-05)</b>										
Tritium	-96.5	500	pCi/L					0		U

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 Project Manager

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

Project ID: Routine Outfall 009 2010  
 Routine Outfall 009  
 Report Number: ITL0524

Sampled: 12/06/10  
 Received: 12/06/10

## 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
ITL0524-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0.095	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
ITL0524-02	Cadmium-200.8	Cadmium	ug/l	0.054	1.0	3.1
ITL0524-02	Chloride - 300.0	Chloride	mg/l	1.30	0.50	150
ITL0524-02	Copper-200.8	Copper	ug/l	3.25	2.00	14
ITL0524-02	Lead-200.8	Lead	ug/l	2.00	1.0	5.2
ITL0524-02	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.34	0.26	8
ITL0524-02	Sulfate-300.0	Sulfate	mg/l	2.15	0.50	300
ITL0524-02	TDS - SM2540C	Total Dissolved Solids	mg/l	30	10	950

## 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
-----------	----------	---------	-------	--------	-----	------------------

TestAmerica Irvine

Debby Wilson  
 Project Manager

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

Project ID: Routine Outfall 009 2010  
Routine Outfall 009  
Report Number: ITL0524

Sampled: 12/06/10  
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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.
- M2** The MS and/or MSD were below 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).
- 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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Project ID: Routine Outfall 009 2010  
Routine Outfall 009  
Report Number: ITL0524

Sampled: 12/06/10  
Received: 12/06/10

## Certification Summary

### TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	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
Filtration	Water	N/A	N/A
SM 2540D	Water	X	X
SM2540C	Water	X	
SM4500CN-E	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](http://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 009 2010  
Routine Outfall 009  
Report Number: ITL0524

Sampled: 12/06/10  
Received: 12/06/10

## Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec  
Samples: ITL0524-02

Analysis Performed: Gross Alpha  
Samples: ITL0524-02

Analysis Performed: Gross Beta  
Samples: ITL0524-02

Analysis Performed: HOLD  
Samples: ITL0524-03

Analysis Performed: Level 4 Data Package  
Samples: ITL0524-02

Analysis Performed: Radium, Combined  
Samples: ITL0524-02

Analysis Performed: Strontium 90  
Samples: ITL0524-02

Analysis Performed: Tritium  
Samples: ITL0524-02

Analysis Performed: Uranium, Combined  
Samples: ITL0524-02

## TestAmerica Irvine

Debby Wilson  
Project Manager



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

Project ID: Routine Outfall 009 2010  
Routine Outfall 009  
Report Number: ITL0524

Sampled: 12/06/10  
Received: 12/06/10

## TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8642  
Samples: ITL0524-02

Method Performed: 900  
Samples: ITL0524-02

Method Performed: 901.1  
Samples: ITL0524-02

Method Performed: 903.1  
Samples: ITL0524-02

Method Performed: 904  
Samples: ITL0524-02

Method Performed: 905  
Samples: ITL0524-02

Method Performed: 906  
Samples: ITL0524-02

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

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B  
Samples: ITL0524-02, ITL0524-02RE

## TestAmerica Irvine

Debby Wilson  
Project Manager







NELAP - RECOGNIZED



CALIFORNIA STATE

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM BRANCH

**CERTIFICATE OF NELAP ACCREDITATION**

Is hereby granted to

**TESTAMERICA IRVINE**

**IRVINE**

17461 DERIAN AVENUE, SUITE 100

IRVINE, CA 92614

Scope of the Certificate is limited to the  
"NELAP Fields of Accreditation"  
which accompany this Certificate.

Continued accredited status depends on successful  
ongoing participation in the program.

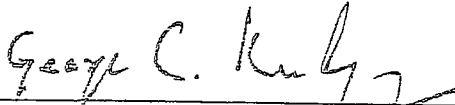
This Certificate is granted in accordance with provisions of  
Section 100825, et seq. of the Health and Safety Code.

Certificate No.: 01108CA

Expiration Date: 1/31/2011

Effective Date: 2/1/2010

Richmond, California  
subject to forfeiture or revocation

  
George C. Kulasingam, Ph.D., Chief  
Environmental Laboratory Accreditation Program Branch



EBERLINE ANALYTICAL CORPORATION

2030 Wright Avenue

Richmond, California 94804-3849

Phone (510) 235-2633 Fax (510) 235-0438

Toll Free (800) 841-5487

[www.eberlineservices.com](http://www.eberlineservices.com)

January 7, 2010

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

**Reference: Test America-Irvine ITL0524  
Eberline Analytical Report S012154-8642  
Sample Delivery Group 8642**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for one water sample received under Test America Job No. ITL0524. The sample was received on December 8, 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 8642 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

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  $2\sigma$  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 the QC blank sample was 28.4 pCi/L, greater than the required detection limit of 25 pCi/L. 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

1/7/11  
\_\_\_\_\_  
Date

EBERLINE ANALYTICAL  
SDG 8642

SDG 8642  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL0524

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 \_\_\_\_\_

Reviewed by \_\_\_\_\_

*N. Joseph Verville*

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
Report date 01/06/11



EBERLINE ANALYTICAL

SDG 8642

SDG 8642  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITL0524

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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SUMMARY DATA SECTION

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Lab id EAS  
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EBERLINE ANALYTICAL

SDG 8642

SDG 8642  
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract ITL0524

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 8642

LAB SAMPLE SUMMARY

SDG 8642  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITL0524

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S012154-01	ITL0524-02	Boeing-SSFL	WATER			ITL0524	12/06/10 03:11
S012154-03	Lab Control Sample		WATER				
S012154-04	Method Blank		WATER				
S012154-05	Duplicate (S012154-01)	Boeing-SSFL	WATER				12/06/10 03:11

LAB SUMMARY

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Lab id EAS  
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EBERLINE ANALYTICAL

SDG 8642

SDG 8642  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITL0524

QC SUMMARY

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL SAMPLE ID	DEPARTMENT SAMPLE ID
8642	ITL0524	ITL0524-02	WATER		10.0 L		12/08/10 2	S012154-01	8642-001
		Method Blank	WATER					S012154-04	8642-004
		Lab Control Sample	WATER					S012154-03	8642-003
		Duplicate (S012154-01)	WATER		10.0 L		12/08/10 2	S012154-05	8642-005

Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-QS  
 Version 3.06  
 Report date 01/06/11

**EBERLINE ANALYTICAL**

SDG 8642

SDG 8642  
 Contact N. Joseph Verville

**PREP BATCH SUMMARY**

Client Test America, Inc.  
 Contract ITL0524

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI- FIERS	
			BATCH	2σ %	CLIENT	MORE	RE	BLANK		LCS
<b>Beta Counting</b>										
AC	WATER	Radium-228 in Water	7258-151	10.4	1			1	1	1/1
SR	WATER	Strontium-90 in Water	7258-151	10.4	1			1	1	1/1
<b>Gas Proportional Counting</b>										
80A	WATER	Gross Alpha in Water	7258-151	20.6	1			1	1	1/1
80B	WATER	Gross Beta in Water	7258-151	11.0	1			1	1	1/1
<b>Gamma Spectroscopy</b>										
GAM	WATER	Gamma Emitters in Water	7258-151	7.0	1			1	1	1/1
<b>Kinetic Phosphorimetry, ug</b>										
U_T	WATER	Uranium, Total	7258-151		1			1	1	1/1
<b>Liquid Scintillation Counting</b>										
H	WATER	Tritium in Water	7258-151	10.0	1			1	1	1/1
<b>Radon Counting</b>										
RA	WATER	Radium-226 in Water	7258-151	16.4	1			1	1	1/1

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.  
 Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-PBS  
 Version 3.06  
 Report date 01/06/11

**EBERLINE ANALYTICAL**

SDG 8642

**LAB WORK SUMMARY**

SDG 8642  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL0524

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX		SUF-						
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S012154-01	ITL0524-02		8642-001	80A/80		12/17/10	12/20/10	BW	Gross Alpha in Water	
12/06/10	Boeing-SSFL	WATER	8642-001	80B/80		12/17/10	12/20/10	BW	Gross Beta in Water	
12/08/10	ITL0524		8642-001	AC		12/21/10	12/23/10	BW	Radium-228 in Water	
			8642-001	GAM		12/16/10	12/20/10	MWT	Gamma Emitters in Water	
			8642-001	H		12/22/10	01/05/11	BW	Tritium in Water	
			8642-001	RA		12/29/10	12/30/10	BW	Radium-226 in Water	
			8642-001	SR		12/20/10	12/30/11	BW	Strontium-90 in Water	
			8642-001	U_T		12/21/10	12/22/10	MWT	Uranium, Total	
S012154-03	Lab Control Sample		8642-003	80A/80		12/20/10	12/20/10	BW	Gross Alpha in Water	
		WATER	8642-003	80B/80		12/20/10	12/20/10	BW	Gross Beta in Water	
			8642-003	AC		12/21/10	12/23/10	BW	Radium-228 in Water	
			8642-003	GAM		12/16/10	12/20/10	MWT	Gamma Emitters in Water	
			8642-003	H		12/22/10	01/05/11	BW	Tritium in Water	
			8642-003	RA		12/29/10	12/30/10	BW	Radium-226 in Water	
			8642-003	SR		12/20/10	12/30/11	BW	Strontium-90 in Water	
			8642-003	U_T		12/21/10	12/22/10	MWT	Uranium, Total	
S012154-04	Method Blank		8642-004	80A/80		12/21/10	12/20/10	BW	Gross Alpha in Water	
		WATER	8642-004	80B/80		12/21/10	12/20/10	BW	Gross Beta in Water	
			8642-004	AC		12/21/10	12/23/10	BW	Radium-228 in Water	
			8642-004	GAM		12/16/10	12/20/10	MWT	Gamma Emitters in Water	
			8642-004	H		12/22/10	01/05/11	BW	Tritium in Water	
			8642-004	RA		12/29/10	12/30/10	BW	Radium-226 in Water	
			8642-004	SR		12/20/10	12/30/11	BW	Strontium-90 in Water	
			8642-004	U_T		12/21/10	12/22/10	MWT	Uranium, Total	
S012154-05	Duplicate (S012154-01)		8642-005	80A/80		12/20/10	12/20/10	BW	Gross Alpha in Water	
12/06/10	Boeing-SSFL	WATER	8642-005	80B/80		12/20/10	12/20/10	BW	Gross Beta in Water	
12/08/10			8642-005	AC		12/21/10	12/23/10	BW	Radium-228 in Water	
			8642-005	GAM		12/16/10	12/20/10	MWT	Gamma Emitters in Water	
			8642-005	H		12/22/10	01/05/11	BW	Tritium in Water	
			8642-005	RA		12/29/10	12/30/10	BW	Radium-226 in Water	
			8642-005	SR		12/20/10	12/30/11	BW	Strontium-90 in Water	
			8642-005	U_T		12/21/10	12/22/10	MWT	Uranium, Total	

WORK SUMMARY

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SUMMARY DATA SECTION

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Protocol TA  
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EBERLINE ANALYTICAL

SDG 8642

SDG 8642

Contact N. Joseph Verville

WORK SUMMARY, cont.

Client Test America, Inc.

Contract ITL0524

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
<b>TOTALS</b>				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 01/06/11





**EBERLINE ANALYTICAL**

SDG 8642

8642-003

Lab Control Sample

**LAB CONTROL SAMPLE**

SDG <u>8642</u> Contact <u>N. Joseph Verville</u>	Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>
Lab sample id <u>S012154-03</u> Dept sample id <u>8642-003</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix _____ <u>WATER</u>

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	2σ LMTS	PROTOCOL
	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS TEST	pCi/L	pCi/L	%	(TOTAL)	LIMITS
Gross Alpha	41.5	2.4	0.635	3.00	80A	40.4	1.6	103	78-122	70-130
Gross Beta	34.8	1.4	1.05	4.00	80B	35.1	1.4	99	88-112	70-130
Tritium	2180	300	353	500	H	2550	100	85	85-115	80-120
Radium-226	55.9	1.8	0.438	1.00	RA	55.7	2.2	100	83-117	80-120
Radium-228	4.22	0.29	0.398	1.00	AC	4.67	0.19	90	88-112	60-140
Strontium-90	15.8	1.5	0.915	2.00	SR	17.5	0.70	90	87-113	80-120
Uranium, Total	56.0	6.4	0.194	1.00	U_T	56.5	2.3	99	88-112	80-120
Cobalt-60	113	4.7	2.48	10.0	GAM	103	4.1	110	90-110	80-120
Cesium-137	122	4.1	2.90	20.0	GAM	110	4.4	111	90-110	80-120

QC-LCS #76426

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>01/06/11</u>

**EBERLINE ANALYTICAL**

SDG 8642

8642-005

ITL0524-02

**DUPLICATE**

SDG <u>8642</u>		Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>		Contract <u>ITL0524</u>
DUPLICATE	ORIGINAL	
Lab sample id <u>S012154-05</u>	Lab sample id <u>S012154-01</u>	Client sample id <u>ITL0524-02</u>
Dept sample id <u>8642-005</u>	Dept sample id <u>8642-001</u>	Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u>
	Received <u>12/08/10</u>	Collected/Volume <u>12/06/10 03:11</u> <u>10.0 L</u>
		Chain of custody id <u>ITL0524</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	0.816	0.27	0.340		3.00		J	80A	0.966	0.29	0.282		J	17	80	0.6
Gross Beta	2.12	0.53	0.763		4.00		J	80B	2.02	0.58	0.888		J	5	62	0.2
Tritium	-96.5	210	362		500		U	H	-10.5	210	356		U	-		0.6
Radium-226	0.219	0.28	0.462		1.00		U	RA	0.272	0.28	0.456		U	-		0.3
Radium-228	0.047	0.24	0.491		1.00		U	AC	0.111	0.20	0.442		U	-		0.4
Strontium-90	0.058	0.35	0.707		2.00		U	SR	0.134	0.32	0.680		U	-		0.3
Uranium, Total	0.108	0.015	0.019		1.00		J	U_T	0.093	0.013	0.019		J	15	30	1.5
Potassium-40	U		21.5		25.0		U	GAM	U		14.8		U	-		0.5
Cesium-137	U		1.31		20.0		U	GAM	U		1.24		U	-		0.1

QC-DUP#1 76428

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>01/06/11</u>

DUPLICATES

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E B E R L I N E   A N A L Y T I C A L  
SDG 8642

8642-001

ITL0524-02

D A T A   S H E E T

SDG <u>8642</u> Contact <u>N. Joseph Verville</u>	Client <u>Test America, Inc.</u> Contract <u>ITL0524</u>
Lab sample id <u>S012154-01</u> Dept sample id <u>8642-001</u> Received <u>12/08/10</u>	Client sample id <u>ITL0524-02</u> Location/Matrix <u>Boeing-SSFL</u> <u>WATER</u> Collected/Volume <u>12/06/10 03:11</u> <u>10.0 L</u> Chain of custody id <u>ITL0524</u>

ANALYTE	CAS NO	RESULT pCi/L	2 $\sigma$ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	0.966	0.29	0.282	3.00	J	80A
Gross Beta	12587472	2.02	0.58	0.888	4.00	J	80B
Tritium	10028178	-10.5	210	356	500	U	H
Radium-226	13982633	0.272	0.28	0.456	1.00	U	RA
Radium-228	15262201	0.111	0.20	0.442	1.00	U	AC
Strontium-90	10098972	0.134	0.32	0.680	2.00	U	SR
Uranium, Total		0.093	0.013	0.019	1.00	J	U_T
Potassium-40	13966002	U		14.8	25.0	U	GAM
Cesium-137	10045973	U		1.24	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>01/06/11</u>

**EBERLINE ANALYTICAL**

SDG 8642

**LAB METHOD SUMMARY**

RADIUM-228 IN WATER  
BETA COUNTING

Test AC Matrix WATER  
SDG 8642  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL0524

**RESULTS**

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

Preparation batch 7258-151

S012154-01		8642-001	ITL0524-02	U
S012154-03		8642-003	Lab Control Sample	ok
S012154-04		8642-004	Method Blank	U
S012154-05		8642-005	Duplicate (S012154-01)	- 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 7258-151            2σ prep error 10.4 %            Reference Lab Notebook No. 7258 pg. 151

S012154-01		ITL0524-02	0.442	1.80			78		150			15	12/21/10	12/21	GRB-221
S012154-03		Lab Control Sample	0.398	1.80			81		150				12/21/10	12/21	GRB-222
S012154-04		Method Blank	0.408	1.80			82		150				12/21/10	12/21	GRB-223
S012154-05		Duplicate (S012154-01)	0.491	1.80			83		150			15	12/21/10	12/21	GRB-224

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 0.435 ± 0.084  
FOR 4 SAMPLES            YIELD 81 ± 4

METHOD SUMMARIES

Page 1

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

SDG 8642

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER  
 SDG 8642  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITL0524

RESULTS

LAB	RAW	SUF-		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Strontium-90
Preparation batch 7258-151				
S012154-01		8642-001	ITL0524-02	U
S012154-03		8642-003	Lab Control Sample	ok
S012154-04		8642-004	Method Blank	U
S012154-05		8642-005	Duplicate (S012154-01)	- 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 7258-151			2σ prep error 10.4 %		Reference Lab Notebook No. 7258 pg. 151										
S012154-01		ITL0524-02	0.680	0.500			84	61				14	12/16/10	12/20	GRB-228
S012154-03		Lab Control Sample	0.915	0.500			56	55					12/16/10	12/20	GRB-225
S012154-04		Method Blank	0.556	0.500			88	100					12/16/10	12/20	GRB-202
S012154-05		Duplicate (S012154-01)	0.707	0.500			68	100				14	12/16/10	12/20	GRB-203

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 0.714 ± 0.298  
 FOR 4 SAMPLES YIELD 74 ± 30

Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 01/06/11

**EBERLINE ANALYTICAL**

SDG 8642

**LAB METHOD SUMMARY**

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Test 80A Matrix WATER

SDG 8642

Contact N. Joseph Verville

Client Test America, Inc.

Contract ITL0524

**RESULTS**

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
Preparation batch 7258-151					
S012154-01	80	8642-001	ITL0524-02	0.966 J	
S012154-03	80	8642-003	Lab Control Sample	ok	
S012154-04	80	8642-004	Method Blank	U	
S012154-05	80	8642-005	Duplicate (S012154-01)	ok J	

Nominal values and limits from method      RDLs (pCi/L)      3.00

**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 7258-151      2σ prep error 20.6 %      Reference Lab Notebook No. 7258 pg. 151														
S012154-01	80	ITL0524-02	0.282	0.300			8		400		11	12/16/10	12/17	GRB-216
S012154-03	80	Lab Control Sample	0.635	0.250			58		400			12/16/10	12/20	GRB-101
S012154-04	80	Method Blank	0.604	0.250			59		400			12/16/10	12/21	GRB-216
S012154-05	80	Duplicate (S012154-01)	0.340	0.300			8		400		14	12/16/10	12/20	GRB-104

Nominal values and limits from method      3.00      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 0.465 ± 0.360  
FOR 4 SAMPLES      RESIDUE 33 ± 58

METHOD SUMMARIES

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Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LMS  
Version 3.06  
Report date 01/06/11

**EBERLINE ANALYTICAL**

SDG 8642

**LAB METHOD SUMMARY**

GROSS BETA IN WATER  
GAS PROPORTIONAL COUNTING

Test 80B Matrix WATER

SDG 8642

Contact N. Joseph Verville

Client Test America, Inc.

Contract ITL0524

**RESULTS**

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
Preparation batch 7258-151					
S012154-01	80	8642-001	ITL0524-02	2.02	J
S012154-03	80	8642-003	Lab Control Sample	ok	
S012154-04	80	8642-004	Method Blank	U	
S012154-05	80	8642-005	Duplicate (S012154-01)	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 7258-151      2σ prep error 11.0 %      Reference Lab Notebook No. 7258 pg. 151													
S012154-01	80	ITL0524-02	0.888	0.300			8	400	11	12/16/10	12/17	GRB-216	
S012154-03	80	Lab Control Sample	1.05	0.250			58	400		12/16/10	12/20	GRB-101	
S012154-04	80	Method Blank	1.12	0.250			59	400		12/16/10	12/21	GRB-216	
S012154-05	80	Duplicate (S012154-01)	0.763	0.300			8	400	14	12/16/10	12/20	GRB-104	

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 0.955 ± 0.322  
FOR 4 SAMPLES      RESIDUE 33 ± 58

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LMS  
Version 3.06  
Report date 01/06/11

**EBERLINE ANALYTICAL**

SDG 8642

**LAB METHOD SUMMARY**

GAMMA EMITTERS IN WATER  
GAMMA SPECTROSCOPY

Test GAM Matrix WATER  
SDG 8642  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL0524

**RESULTS**

<b>LAB</b>	<b>RAW</b>	<b>SUF-</b>			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cesium-137

Preparation batch 7258-151

S012154-01	8642-001	ITL0524-02		U	
S012154-03	8642-003	Lab Control Sample	ok	ok	
S012154-04	8642-004	Method Blank		U	
S012154-05	8642-005	Duplicate (S012154-01)		-	U

Nominal values and limits from method	RDLs (pCi/L)	10.0	20.0
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**METHOD PERFORMANCE**

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

Preparation batch 7258-151      2σ prep error 7.0 %      Reference Lab Notebook No. 7258 pg. 151

S012154-01	ITL0524-02		2.00				616		10	12/16/10	12/16	MB,08,00
S012154-03	Lab Control Sample		2.00				616			12/16/10	12/16	01,01,00
S012154-04	Method Blank		2.00				616			12/16/10	12/16	01,02,00
S012154-05	Duplicate (S012154-01)		2.00				616		10	12/16/10	12/16	01,04,00

Nominal values and limits from method	6.00	2.00	400	180
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PROCEDURES	REFERENCE	901.1
	DWP-100	Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

Lab id	<u>EAS</u>
Protocol	<u>TA</u>
Version	<u>Ver 1.0</u>
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Version	<u>3.06</u>
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**EBERLINE ANALYTICAL**

SDG 8642

**LAB METHOD SUMMARY**

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Test U T Matrix WATER

SDG 8642

Contact N. Joseph Verville

Client Test America, Inc.

Contract ITL0524

**RESULTS**

LAB	RAW	SUF-		Uranium,
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total
Preparation batch 7258-151				
S012154-01		8642-001	ITL0524-02	0.093 J
S012154-03		8642-003	Lab Control Sample	ok
S012154-04		8642-004	Method Blank	U
S012154-05		8642-005	Duplicate (S012154-01)	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 7258-151			2σ prep error		Reference Lab Notebook No. 7258 pg. 151								
S012154-01		ITL0524-02	0.019	0.0200								15 12/21/10	12/21 KPA-001
S012154-03		Lab Control Sample	0.194	0.0200								12/21/10	12/21 KPA-001
S012154-04		Method Blank	0.019	0.0200								12/21/10	12/21 KPA-001
S012154-05		Duplicate (S012154-01)	0.019	0.0200								15 12/21/10	12/21 KPA-001

Nominal values and limits from method 1.00 0.0200 180

PROCEDURES REFERENCE D5174

AVERAGES ± 2 SD MDA 0.063 ± 0.175  
FOR 4 SAMPLES YIELD \_\_\_\_\_ ± \_\_\_\_\_

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS

Protocol TA

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 01/06/11

**EBERLINE ANALYTICAL**

SDG 8642

**LAB METHOD SUMMARY**

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H        Matrix WATER  
 SDG 8642  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITL0524

**RESULTS**

<b>LAB</b>	<b>RAW</b>	<b>SUF-</b>		
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Tritium

Preparation batch 7258-151

S012154-01	8642-001	ITL0524-02		U
S012154-03	8642-003	Lab Control Sample		ok
S012154-04	8642-004	Method Blank		U
S012154-05	8642-005	Duplicate (S012154-01)		- U

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

**METHOD PERFORMANCE**

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

Preparation batch 7258-151      2σ prep error 10.0 %      Reference Lab Notebook No. 7258 pg. 151

S012154-01	ITL0524-02	356	0.0100					100		<u>50</u>		16	12/22/10	12/22	LSC-006
S012154-03	Lab Control Sample	353	0.100					10		<u>50</u>			12/22/10	12/22	LSC-006
S012154-04	Method Blank	372	0.100					10		<u>50</u>			12/22/10	12/22	LSC-006
S012154-05	Duplicate (S012154-01)	362	0.0100					100		<u>50</u>		16	12/22/10	12/22	LSC-006

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 361 ± 16.8  
 FOR 4 SAMPLES      YIELD 55 ± 104

METHOD SUMMARIES

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Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
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**EBERLINE ANALYTICAL**

SDG 8642

**LAB METHOD SUMMARY**

RADIUM-226 IN WATER  
RADON COUNTING

Test RA Matrix WATER  
SDG 8642  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL0524

**RESULTS**

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

Preparation batch 7258-151

S012154-01	8642-001	ITL0524-02	U
S012154-03	8642-003	Lab Control Sample	ok
S012154-04	8642-004	Method Blank	U
S012154-05	8642-005	Duplicate (S012154-01)	- U

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

**METHOD PERFORMANCE**

LAB RAW SUP- 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 7258-151 2σ prep error 16.4 % Reference Lab Notebook No. 7258 pg. 151

S012154-01	ITL0524-02	0.456	0.100	100	160	23	12/29/10	12/29	RN-013
S012154-03	Lab Control Sample	0.438	0.100	100	160		12/29/10	12/29	RN-012
S012154-04	Method Blank	0.474	0.100	100	160		12/29/10	12/29	RN-015
S012154-05	Duplicate (S012154-01)	0.462	0.100	100	160	23	12/29/10	12/29	RN-014

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 0.458 ± 0.030  
FOR 4 SAMPLES YIELD 100 ± 0

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LMS  
Version 3.06  
Report date 01/06/11

EBERLINE ANALYTICAL

SDG 8642

SDG 8642  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITL0524

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

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EBERLINE ANALYTICAL

SDG 8642

SDG 8642  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITL0524

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.

REPORT GUIDES

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Version 3.06  
Report date 01/06/11

EBERLINE ANALYTICAL

SDG 8642

SDG 8642  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITL0524

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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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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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**

**ITL0524**

8642

**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: CA - CALIFORNIA  
Receipt Temperature: \_\_\_\_\_ °C      Ice: Y / N

Analysis	Units	Due	Expires	Comments
<b>Sample ID: ITL0524-02 (Outfall 009 (Comp) - Water)</b>				
			<b>Sampled: 12/06/10 03:11</b>	
Gamma Spec-O	mg/kg	12/13/10	12/06/11 03:11	Out Eberline, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	12/13/10	06/04/11 03:11	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	12/13/10	06/04/11 03:11	Out Eberline Boeing permit, DO NOT FILTER!
Level 4 Data Package - Out	N/A	12/13/10	01/03/11 03:11	
Radium, Combined-O	pCi/L	12/13/10	12/06/11 03:11	Out Eberline Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	12/13/10	12/06/11 03:11	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	12/13/10	12/06/11 03:11	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	12/13/10	12/06/11 03:11	Out Eberline, Boeing permit, DO NOT FILTER!

*Containers Supplied:*

2.5 gal Poly (H) HNO<sub>3</sub> 500 mL Amber (I)

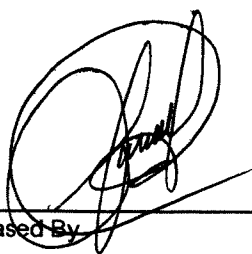
**Sample ID: ITL0524-03 (Trip Blank - Water)**

**Sampled: 12/06/10 03:11      PRES. W/HNO<sub>3</sub>**

HOLD	N/A	12/13/10	12/06/11 03:11
------	-----	----------	----------------

*Containers Supplied:*

2.5 gal Poly (A) HNO<sub>3</sub>

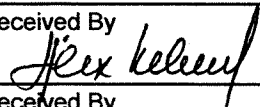


Released By \_\_\_\_\_ Date/Time 12/7/10

Released By \_\_\_\_\_ Date/Time \_\_\_\_\_

Fed-EX 12/7/10 1700

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_

 KEENSON 12/8/10 10:00

Received By \_\_\_\_\_ Date/Time \_\_\_\_\_



# RICHMOND, CA LABORATORY

## SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 12/8/10 10:00 CoC No. ITL0524

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: 2 Sample Matrix WATER
7. Number of containers per sample: 1 (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
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date
15. Inspected by JK Date: 12/08/10 Time: 13:10

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

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

Calibration date           
 Calibration date           
 Calibration date 24 Sep 2010

## **APPENDIX G**

### **Section 29**

Outfall 009 – December 18, 2010

MEC<sup>X</sup> Data Validation Report

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# DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: ITL1881

Prepared by

MEC<sup>x</sup>, 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: ITL1881  
 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 009 (Comp)	ITL1881-02	G0L210472-001, S012300-001	Water	12/18/2010 5:10:00 PM	1613B, 900, 901.1, 903.1, 904, 905, 906, 245.1, 245.1-Diss, SM 2540D, D5174

## II. Sample Management

A portion of the samples in this SDG were received at TestAmerica-Irvine and TestAmerica-West Sacramento marginally below the control limit; however, as the samples were not noted to be frozen or damaged, no qualifications were required. The samples were received marginally above the temperature limit at Eberline; however, due to the nonvolatile nature of the analytes, no qualifications were required. 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 were couriered to TestAmerica-Irvine, custody seals were not required. Custody seals were intact upon receipt at Eberline and TestAmerica West Sacramento. If necessary, the client ID was added to the sample result summary by the reviewer.



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**Data Qualifier Reference Table**


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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.**

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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 18, 2011

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC<sup>x</sup> 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 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, OCDD, OCDF, total HpCDD, and total HpCDF. All but OCDD were reported as EMPCs in the method blank; however, due to the extent of the method blank contamination, the reviewer considered it appropriate to use the EMPCs to qualify sample results. The method blank result for OCDD was insufficient to qualify the

sample result. All other 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: The 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 EMPCs in the sample 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.

## **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<sup>x</sup> 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, six months for ICP and ICP-MS metals and 28 days for mercury, was met.

- Tuning: Not applicable to this analysis.
- Calibration: Calibration criteria were met. Mercury initial calibration  $r^2$  values were  $\geq 0.995$  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.
- 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 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 remaining 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:** Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. The RPDs were within the laboratory-established control limits.
- **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.
- **A notation in the sample preparation logbook indicated that the aliquot for Radium-228 was 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 14, 2011

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC<sup>X</sup> 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 ITL1881

## Analysis Method 8643

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL1881-02	<b>Sample Date:</b>	12/18/2010 5:10:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Uranium, Total	NA	0.103	1	0.019	pCi/L	Jb	J	DNQ

## Analysis Method 900

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL1881-02	<b>Sample Date:</b>	12/18/2010 5:10:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Gross Alpha	12587461	1.22	3	0.326	pCi/L	Jb	J	DNQ
Gross Beta	12587472	1.61	4	0.853	pCi/L	Jb	J	DNQ

## Analysis Method 901.1

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL1881-02	<b>Sample Date:</b>	12/18/2010 5:10:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Cesium-137	10045973	ND	20	1.28	pCi/L	U	U	
Potassium-40	13966002	ND	25	17.8	pCi/L	U	U	

## Analysis Method 903.1

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL1881-02	<b>Sample Date:</b>	12/18/2010 5:10:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Radium-226	13982633	0.332	1	0.604	pCi/L	U	U	

## Analysis Method 904

<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL1881-02	<b>Sample Date:</b>	12/18/2010 5:10:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Radium-228	15262201	0.118	1	0.459	pCi/L	U	U	

*Analysis Method 905*

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<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL1881-02	<b>Sample Date:</b>	12/18/2010 5:10:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Strontium-90	10098972	0.012	2	1.12	pCi/L	U	U	

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*Analysis Method 906*

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<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	WATER	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL1881-02	<b>Sample Date:</b>	12/18/2010 5:10:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Tritium	10028178	-81.5	500	294	pCi/L	U	U	

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*Analysis Method EPA 245.1*

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<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL1881-02	<b>Sample Date:</b>	12/18/2010 5:10:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

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*Analysis Method EPA 245.1-Diss*

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<b>Sample Name</b>	Outfall 009 (Comp)	<b>Matrix Type:</b>	Water	<b>Validation Level:</b>	IV			
<b>Lab Sample Name:</b>	ITL1881-02	<b>Sample Date:</b>	12/18/2010 5:10:00 PM					
<b>Analyte</b>	<b>CAS No</b>	<b>Result Value</b>	<b>RL</b>	<b>MDL</b>	<b>Result Units</b>	<b>Lab Qualifier</b>	<b>Validation Qualifier</b>	<b>Validation Notes</b>
Mercury	7439-97-6	ND	0.20	0.10	ug/l		U	

---

*Analysis Method EPA-5 1613B*

**Sample Name** Outfall 009 (Comp) **Matrix Type:** WATER **Validation Level:** IV  
**Lab Sample Name:** ITL1881-02 **Sample Date:** 12/18/2010 5:10:00 PM

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	0.000049	0.0000006	ug/L	J, B	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000049	0.0000004	ug/L	J, Q, B	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	0.000001	0.000049	0.0000005	ug/L	J	J	DNQ
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000049	0.0000001	ug/L	J, Q	UJ	*III
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000049	0.0000001	ug/L	J, Q	UJ	*III
1,2,3,6,7,8-HxCDD	57653-85-7	0.000002	0.000049	0.0000001	ug/L	J	J	DNQ
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000049	0.0000001	ug/L	J, Q	UJ	*III
1,2,3,7,8,9-HxCDD	19408-74-3	0.000002	0.000049	0.0000001	ug/L	J	J	DNQ
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000049	0.0000001	ug/L	J, Q	UJ	*III
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000049	0.0000014	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000049	0.0000005	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	0.000000	0.000049	0.0000001	ug/L	J	J	DNQ
2,3,4,7,8-PeCDF	57117-31-4	0.000001	0.000049	0.0000005	ug/L	J	J	DNQ
2,3,7,8-TCDD	1746-01-6	ND	0.0000098	0.0000003	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.0000098	0.0000006	ug/L		U	
OCDD	3268-87-9	0.00036	0.000098	0.0000013	ug/L	B		
OCDF	39001-02-0	ND	0.000098	0.0000005	ug/L	J, B	U	B
Total HpCDD	37871-00-4	0.00008	0.000049	0.0000006	ug/L	J, B	J	B, DNQ
Total HpCDF	38998-75-3	0.000021	0.000049	0.0000004	ug/L	J, Q, B	J	B, DNQ, *III
Total HxCDD	34465-46-8	0.000014	0.000049	0.0000001	ug/L	J, Q	J	DNQ, *III
Total HxCDF	55684-94-1	0.00001	0.000049	0.0000001	ug/L	J, Q	J	DNQ, *III
Total PeCDD	36088-22-9	ND	0.000049	0.0000014	ug/L		U	
Total PeCDF	30402-15-4	0.000002	0.000049	0.0000005	ug/L	J	J	DNQ
Total TCDD	41903-57-5	ND	0.0000098	0.0000003	ug/L		U	
Total TCDF	55722-27-5	ND	0.0000098	0.0000006	ug/L		U	

*Analysis Method SM 2540D*

**Sample Name** Outfall 009 (Comp) **Matrix Type:** Water **Validation Level:** IV  
**Lab Sample Name:** ITL1881-02 **Sample Date:** 12/18/2010 5:10:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Total Suspended Solids	TSS	19	10	1.0	mg/l			

# **APPENDIX G**

## **Section 30**

Outfall 009 – December 18, 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 009 2010  
Routine Outfall 009 Grab and  
Composite  
Sampled: 12/18/10  
Received: 12/18/10  
Issued: 02/04/11 12:05

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, 3 pages, are included and are an integral part of this report.*

*This entire report was reviewed and approved for release.*

## SAMPLE CROSS REFERENCE

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**

ITL1881-01  
ITL1881-02  
ITL1881-03

**CLIENT ID**

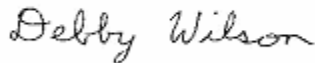
Outfall 009 (Grab)  
Outfall 009 (Comp)  
Trip Blank

**MATRIX**

Water  
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 009 2010  
Routine Outfall 009 Grab and Composite  
Report Number: ITL1881

Sampled: 12/18/10  
Received: 12/18/10

## HEXANE EXTRACTABLE MATERIAL

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-01 (Outfall 009 (Grab) - Water)</b>									
<b>Reporting Units: mg/l</b>									
Hexane Extractable Material (Oil & Grease)	EPA 1664A	10L2313	1.3	4.7	ND	1	DA	12/20/10	

**TestAmerica Irvine**

Debby Wilson  
Project Manager

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**ITL1881 <Page 2 of 37>**



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

Project ID: Routine Outfall 009 2010  
 Routine Outfall 009 Grab and Composite  
 Report Number: ITL1881

Sampled: 12/18/10  
 Received: 12/18/10

## METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)</b>									
<b>Reporting Units: ug/l</b>									
Mercury	EPA 245.1	10L2344	0.10	0.20	ND	1	DB	12/20/10	
<b>Antimony</b>	EPA 200.8	10L2490	0.30	2.0	<b>0.41</b>	1	NH	12/21/10	J
Cadmium	EPA 200.8	10L2490	0.10	1.0	ND	1	NH	12/21/10	
<b>Copper</b>	EPA 200.8	10L2490	0.500	2.00	<b>3.86</b>	1	NH	12/21/10	
<b>Lead</b>	EPA 200.8	10L2490	0.20	1.0	<b>2.3</b>	1	NH	12/21/10	
Thallium	EPA 200.8	10L2490	0.20	1.0	ND	1	NH	12/21/10	

**TestAmerica Irvine**

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 009 2010  
 Routine Outfall 009 Grab and Composite  
 Report Number: ITL1881

Sampled: 12/18/10  
 Received: 12/18/10

## DISSOLVED METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water) - cont.</b>									
<b>Reporting Units: ug/l</b>									
Mercury	EPA 245.1-Diss	10L2349	0.10	0.20	ND	1	DB	12/20/10	
<b>Antimony</b>	EPA 200.8-Diss	10L2387	0.30	2.0	<b>0.57</b>	1	FR	12/21/10	J
Cadmium	EPA 200.8-Diss	10L2387	0.10	1.0	ND	1	FR	12/21/10	
<b>Copper</b>	EPA 200.8-Diss	10L2387	0.500	2.00	<b>2.60</b>	1	FR	12/21/10	
<b>Lead</b>	EPA 200.8-Diss	10L2387	0.20	1.0	<b>0.36</b>	1	FR	12/21/10	J
Thallium	EPA 200.8-Diss	10L2387	0.20	1.0	ND	1	FR	12/21/10	

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

Project ID: Routine Outfall 009 2010  
 Routine Outfall 009 Grab and Composite  
 Report Number: ITL1881

Sampled: 12/18/10  
 Received: 12/18/10

## INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: mg/l									
Chloride	EPA 300.0	10L2303	0.25	0.50	<b>2.5</b>	1	NN	12/20/10	
Nitrate/Nitrite-N	EPA 300.0	10L2303	0.15	0.26	<b>0.51</b>	1	NN	12/20/10	
Sulfate	EPA 300.0	10L2303	0.20	0.50	<b>3.4</b>	1	NN	12/20/10	
Total Dissolved Solids	SM2540C	10L2247	1.0	10	<b>64</b>	1	MC	12/20/10	
Total Suspended Solids	SM 2540D	10L2549	1.0	10	<b>19</b>	1	DK	12/21/10	
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)</b>									
Reporting Units: ug/l									
Total Cyanide	SM4500CN-E	10L2367	2.2	5.0	ND	1	HH	12/20/10	

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Report Number: ITL1881

Sampled: 12/18/10  
Received: 12/18/10

## EPA-5 1613Bx

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: ug/L									
1,2,3,4,6,7,8-HpCDD	EPA-5 1613B	356427	0.00000063	0.000049	<b>0.000033</b>	0.98	SY	12/23/10	J, B
1,2,3,4,6,7,8-HpCDF	EPA-5 1613B	356427	0.00000004	0.000049	<b>0.0000082</b>	0.98	SY	12/23/10	J, Q, B
1,2,3,4,7,8,9-HpCDF	EPA-5 1613B	356427	0.00000054	0.000049	<b>0.0000016</b>	0.98	SY	12/23/10	J
1,2,3,4,7,8-HxCDD	EPA-5 1613B	356427	0.00000017	0.000049	<b>0.0000017</b>	0.98	SY	12/23/10	J, Q
1,2,3,4,7,8-HxCDF	EPA-5 1613B	356427	0.00000017	0.000049	<b>0.00000096</b>	0.98	SY	12/23/10	J, Q
1,2,3,6,7,8-HxCDD	EPA-5 1613B	356427	0.00000014	0.000049	<b>0.0000022</b>	0.98	SY	12/23/10	J
1,2,3,6,7,8-HxCDF	EPA-5 1613B	356427	0.00000017	0.000049	<b>0.0000011</b>	0.98	SY	12/23/10	J, Q
1,2,3,7,8,9-HxCDD	EPA-5 1613B	356427	0.00000014	0.000049	<b>0.0000023</b>	0.98	SY	12/23/10	J
1,2,3,7,8,9-HxCDF	EPA-5 1613B	356427	0.00000019	0.000049	<b>0.00000038</b>	0.98	SY	12/23/10	J, Q
1,2,3,7,8-PeCDD	EPA-5 1613B	356427	0.00000014	0.000049	ND	0.98	SY	12/23/10	
1,2,3,7,8-PeCDF	EPA-5 1613B	356427	0.00000054	0.000049	ND	0.98	SY	12/23/10	
2,3,4,6,7,8-HxCDF	EPA-5 1613B	356427	0.00000016	0.000049	<b>0.00000091</b>	0.98	SY	12/23/10	J
2,3,4,7,8-PeCDF	EPA-5 1613B	356427	0.00000058	0.000049	<b>0.0000011</b>	0.98	SY	12/23/10	J
2,3,7,8-TCDD	EPA-5 1613B	356427	0.00000031	0.000098	ND	0.98	SY	12/23/10	
2,3,7,8-TCDF	EPA-5 1613B	356427	0.00000063	0.000098	ND	0.98	SY	12/23/10	
OCDD	EPA-5 1613B	356427	0.00000013	0.000098	<b>0.00036</b>	0.98	SY	12/23/10	B
OCDF	EPA-5 1613B	356427	0.00000054	0.000098	<b>0.000021</b>	0.98	SY	12/23/10	J, B
Total HpCDD	EPA-5 1613B	356427	0.00000063	0.000049	<b>0.00008</b>	0.98	SY	12/23/10	J, B
Total HpCDF	EPA-5 1613B	356427	0.00000046	0.000049	<b>0.000021</b>	0.98	SY	12/23/10	J, Q, B
Total HxCDD	EPA-5 1613B	356427	0.00000015	0.000049	<b>0.000014</b>	0.98	SY	12/23/10	J, Q
Total HxCDF	EPA-5 1613B	356427	0.00000017	0.000049	<b>0.00001</b>	0.98	SY	12/23/10	J, Q
Total PeCDD	EPA-5 1613B	356427	0.00000014	0.000049	ND	0.98	SY	12/23/10	
Total PeCDF	EPA-5 1613B	356427	0.00000056	0.000049	<b>0.0000021</b>	0.98	SY	12/23/10	J
Total TCDD	EPA-5 1613B	356427	0.00000031	0.000098	ND	0.98	SY	12/23/10	
Total TCDF	EPA-5 1613B	356427	0.00000063	0.000098	ND	0.98	SY	12/23/10	

Surrogate: 13C-1,2,3,4,6,7,8-HpCDD (23-140%)	86 %
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%)	83 %
Surrogate: 13C-1,2,3,4,7,8-HxCDD (32-141%)	74 %
Surrogate: 13C-1,2,3,4,7,8-HxCDF (26-152%)	73 %
Surrogate: 13C-1,2,3,6,7,8-HxCDD (28-130%)	91 %
Surrogate: 13C-1,2,3,6,7,8-HxCDF (26-123%)	76 %
Surrogate: 13C-1,2,3,7,8,9-HxCDF (29-147%)	74 %
Surrogate: 13C-1,2,3,7,8-PeCDD (25-181%)	90 %
Surrogate: 13C-1,2,3,7,8-PeCDF (24-185%)	89 %
Surrogate: 13C-2,3,4,6,7,8-HxCDF (28-136%)	77 %
Surrogate: 13C-2,3,4,7,8-PeCDF (21-178%)	91 %
Surrogate: 13C-2,3,7,8-TCDD (25-164%)	70 %
Surrogate: 13C-2,3,7,8-TCDF (24-169%)	67 %
Surrogate: 13C-OCDD (17-157%)	77 %
Surrogate: 37Cl4-2,3,7,8-TCDD (35-197%)	100 %

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Routine Outfall 009 Grab and Composite  
Report Number: ITL1881

Sampled: 12/18/10  
Received: 12/18/10

## 8643

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water) - cont.</b>									
Reporting Units: pCi/L									
Uranium, Total	8643	8643		1	0.103	1	CSS	01/18/11	Jb

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## 8643

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-03 (Trip Blank - Water)</b>									
Reporting Units: pCi/L									
Uranium, Total	8643	8643		1	ND	1	CSS	01/20/11	U

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## 900

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)</b>									
Reporting Units: pCi/L									
Gross Alpha	900	8643		3	1.22	1	LS	01/04/11	Jb
Gross Beta	900	8643		4	1.61	1	LS	01/04/11	Jb
<b>Sample ID: ITL1881-03 (Trip Blank - Water)</b>									
Reporting Units: pCi/L									
Gross Alpha	900	8643		3	-0.162	1	KT	01/14/11	U
Gross Beta	900	8643		4	-0.78	1	KT	01/14/11	U

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## 901.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)</b>									
Reporting Units: pCi/L									
Cesium-137	901.1	8643		20	ND	1	LS	12/29/10	U
Potassium-40	901.1	8643		25	ND	1	LS	12/29/10	U
<b>Sample ID: ITL1881-03 (Trip Blank - Water)</b>									
Reporting Units: pCi/L									
Cesium-137	901.1	8643		20	ND	1	LS	01/13/11	U
Potassium-40	901.1	8643		25	ND	1	LS	01/13/11	U

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## 903.1

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)</b>									
Reporting Units: pCi/L									
Radium-226	903.1	8643		1	0.332	1	TM	01/06/11	U
<b>Sample ID: ITL1881-03 (Trip Blank - Water)</b>									
Reporting Units: pCi/L									
Radium-226	903.1	8643		1	0.415	1	TM	01/24/11	U

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**904**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)</b>									
Reporting Units: pCi/L									
Radium-228	904	8643		1	0.118	1	ASM	01/21/11	U
<b>Sample ID: ITL1881-03 (Trip Blank - Water)</b>									
Reporting Units: pCi/L									
Radium-228	904	8643		1	-0.097	1	ASM	01/26/11	U

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## 905

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)</b>									
Reporting Units: pCi/L									
Strontium-90	905	8643		2	0.012	1	WL	01/06/11	U
<b>Sample ID: ITL1881-03 (Trip Blank - Water)</b>									
Reporting Units: pCi/L									
Strontium-90	905	8643		2	0.238	1	ASM	01/24/11	U

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## 906

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Analyst	Date Analyzed	Data Qualifiers
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)</b>									
Reporting Units: pCi/L									
Tritium	906	8643		500	-81.5	1	JO	01/13/11	U

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## SHORT HOLD TIME DETAIL REPORT

	<b>Hold Time (in days)</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>	<b>Date/Time Extracted</b>	<b>Date/Time Analyzed</b>
<b>Sample ID: Outfall 009 (Comp) (ITL1881-02) - Water</b>					
EPA 300.0	2	12/18/2010 17:10	12/18/2010 16:40	12/20/2010 11:00	12/20/2010 11:38
Filtration	1	12/18/2010 17:10	12/18/2010 16:40	12/20/2010 09:00	12/20/2010 09:39

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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
<b>Batch: 10L2313 Extracted: 12/20/10</b>										
<b>Blank Analyzed: 12/20/2010 (10L2313-BLK1)</b>										
Hexane Extractable Material (Oil & Grease)	ND	5.0	mg/l							
<b>LCS Analyzed: 12/20/2010 (10L2313-BS1)</b>										
Hexane Extractable Material (Oil & Grease)	19.5	5.0	mg/l	20.0		98	78-114			MNR1
<b>LCS Dup Analyzed: 12/20/2010 (10L2313-BSD1)</b>										
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
<b>Batch: 10L2344 Extracted: 12/20/10</b>										
<b>Blank Analyzed: 12/20/2010 (10L2344-BLK1)</b>										
Mercury	ND	0.20	ug/l							
<b>LCS Analyzed: 12/20/2010 (10L2344-BS1)</b>										
Mercury	7.94	0.20	ug/l	8.00		99	85-115			
<b>Matrix Spike Analyzed: 12/20/2010 (10L2344-MS1)</b>										
					<b>Source: ITL1882-02</b>					
Mercury	7.98	0.20	ug/l	8.00	ND	100	70-130			
<b>Matrix Spike Dup Analyzed: 12/20/2010 (10L2344-MSD1)</b>										
					<b>Source: ITL1882-02</b>					
Mercury	8.05	0.20	ug/l	8.00	ND	101	70-130	0.8	20	
<b>Batch: 10L2490 Extracted: 12/21/10</b>										
<b>Blank Analyzed: 12/21/2010 (10L2490-BLK1)</b>										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
<b>LCS Analyzed: 12/21/2010 (10L2490-BS1)</b>										
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			
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 Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 10L2490 Extracted: 12/21/10</b>										
<b>Matrix Spike Analyzed: 12/21/2010 (10L2490-MS1)</b>					<b>Source: ITL1829-03</b>					
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			
Thallium	76.0	1.0	ug/l	80.0	ND	95	70-130			
<b>Matrix Spike Analyzed: 12/21/2010 (10L2490-MS2)</b>					<b>Source: ITL1829-04</b>					
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			
Thallium	77.4	1.0	ug/l	80.0	ND	97	70-130			
<b>Matrix Spike Dup Analyzed: 12/21/2010 (10L2490-MSD1)</b>					<b>Source: ITL1829-03</b>					
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	
Thallium	78.5	1.0	ug/l	80.0	ND	98	70-130	3	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
<b>Batch: 10L2349 Extracted: 12/20/10</b>										
<b>Blank Analyzed: 12/20/2010 (10L2349-BLK1)</b>										
Mercury	ND	0.20	ug/l							
<b>LCS Analyzed: 12/20/2010 (10L2349-BS1)</b>										
Mercury	8.07	0.20	ug/l	8.00		101	85-115			
<b>Matrix Spike Analyzed: 12/20/2010 (10L2349-MS1)</b>										
					<b>Source: ITL1813-01</b>					
Mercury	7.58	0.20	ug/l	8.00	ND	95	70-130			
<b>Matrix Spike Dup Analyzed: 12/20/2010 (10L2349-MSD1)</b>										
					<b>Source: ITL1813-01</b>					
Mercury	7.56	0.20	ug/l	8.00	ND	95	70-130	0.2	20	
<b>Batch: 10L2387 Extracted: 12/20/10</b>										
<b>Blank Analyzed: 12/21/2010 (10L2387-BLK1)</b>										
Antimony	ND	2.0	ug/l							
Cadmium	ND	1.0	ug/l							
Copper	ND	2.00	ug/l							
Lead	ND	1.0	ug/l							
Thallium	ND	1.0	ug/l							
<b>LCS Analyzed: 12/21/2010 (10L2387-BS1)</b>										
Antimony	80.9	2.0	ug/l	80.0		101	85-115			
Cadmium	80.9	1.0	ug/l	80.0		101	85-115			
Copper	91.2	2.00	ug/l	80.0		114	85-115			
Lead	72.8	1.0	ug/l	80.0		91	85-115			
Thallium	74.9	1.0	ug/l	80.0		94	85-115			

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Debby Wilson  
 Project Manager

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 Report Number: ITL1881

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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
<b>Batch: 10L2387 Extracted: 12/20/10</b>										
<b>Matrix Spike Analyzed: 12/21/2010 (10L2387-MS1)</b>					<b>Source: ITL1877-01</b>					
Antimony	83.0	2.0	ug/l	80.0	ND	104	70-130			
Cadmium	80.8	1.0	ug/l	80.0	ND	101	70-130			
Copper	89.8	2.00	ug/l	80.0	2.12	110	70-130			
Lead	73.6	1.0	ug/l	80.0	0.473	91	70-130			
Thallium	78.3	1.0	ug/l	80.0	0.289	98	70-130			
<b>Matrix Spike Dup Analyzed: 12/21/2010 (10L2387-MSD1)</b>					<b>Source: ITL1877-01</b>					
Antimony	81.4	2.0	ug/l	80.0	ND	102	70-130	2	20	
Cadmium	79.2	1.0	ug/l	80.0	ND	99	70-130	2	20	
Copper	89.5	2.00	ug/l	80.0	2.12	109	70-130	0.4	20	
Lead	72.9	1.0	ug/l	80.0	0.473	91	70-130	0.9	20	
Thallium	77.2	1.0	ug/l	80.0	0.289	96	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
<b>Batch: 10L2247 Extracted: 12/20/10</b>										
<b>Blank Analyzed: 12/20/2010 (10L2247-BLK1)</b>										
Total Dissolved Solids	ND	10	mg/l							
<b>LCS Analyzed: 12/20/2010 (10L2247-BS1)</b>										
Total Dissolved Solids	1000	10	mg/l	1000		100	90-110			
<b>Duplicate Analyzed: 12/20/2010 (10L2247-DUP1)</b>										
Total Dissolved Solids	322	10	mg/l		313			3	10	
<b>Source: ITL1836-09</b>										
<b>Batch: 10L2303 Extracted: 12/20/10</b>										
<b>Blank Analyzed: 12/20/2010 (10L2303-BLK1)</b>										
Chloride	ND	0.50	mg/l							
Nitrate/Nitrite-N	ND	0.26	mg/l							
Sulfate	ND	0.50	mg/l							
<b>LCS Analyzed: 12/20/2010 (10L2303-BS1)</b>										
Chloride	4.56	0.50	mg/l	5.00		91	90-110			
Sulfate	9.32	0.50	mg/l	10.0		93	90-110			
<b>Matrix Spike Analyzed: 12/20/2010 (10L2303-MS1)</b>										
Chloride	6.92	0.50	mg/l	5.00	2.48	89	80-120			
Sulfate	12.9	0.50	mg/l	10.0	3.40	95	80-120			
<b>Source: ITL1881-02</b>										
<b>Matrix Spike Dup Analyzed: 12/20/2010 (10L2303-MSD1)</b>										
Chloride	6.69	0.50	mg/l	5.00	2.48	84	80-120	3	20	
Sulfate	13.1	0.50	mg/l	10.0	3.40	97	80-120	2	20	

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 Project Manager

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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
<b>Batch: 10L2367 Extracted: 12/20/10</b>										
<b>Blank Analyzed: 12/20/2010 (10L2367-BLK1)</b>										
Total Cyanide	ND	5.0	ug/l							
<b>LCS Analyzed: 12/20/2010 (10L2367-BS1)</b>										
Total Cyanide	190	5.0	ug/l	200		95	90-110			
<b>Matrix Spike Analyzed: 12/20/2010 (10L2367-MS1)</b>										
					<b>Source: ITL1881-02</b>					
Total Cyanide	169	5.0	ug/l	200	ND	85	70-115			
<b>Matrix Spike Dup Analyzed: 12/20/2010 (10L2367-MSD1)</b>										
					<b>Source: ITL1881-02</b>					
Total Cyanide	168	5.0	ug/l	200	ND	84	70-115	0.7	15	
<b>Batch: 10L2549 Extracted: 12/21/10</b>										
<b>Blank Analyzed: 12/21/2010 (10L2549-BLK1)</b>										
Total Suspended Solids	ND	10	mg/l							
<b>LCS Analyzed: 12/21/2010 (10L2549-BS1)</b>										
Total Suspended Solids	991	10	mg/l	1000		99	85-115			
<b>Duplicate Analyzed: 12/21/2010 (10L2549-DUP1)</b>										
					<b>Source: ITL1881-02</b>					
Total Suspended Solids	19.0	10	mg/l		19.0			0	10	

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 Project Manager

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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
<b>Batch: 356427 Extracted: 12/22/10</b>										
<b>Blank Analyzed: 12/23/2010 (G0L220000427B)</b>					<b>Source:</b>					
1,2,3,4,6,7,8-HpCDD	9e-007	0.00005	ug/L				-			J, Q
1,2,3,4,6,7,8-HpCDF	7.7e-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	5.4e-006	0.0001	ug/L				-			J
OCDF	1.4e-006	0.0001	ug/L				-			J, Q
Total HpCDD	2.1e-006	0.00005	ug/L				-			J, Q
Total HpCDF	7.7e-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		92	23-140			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	1700		ug/L	2000		86	28-143			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	1800		ug/L	2000		90	26-138			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	1700		ug/L	2000		84	32-141			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	1600		ug/L	2000		80	26-152			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	0.0019		ug/L	0.002		95	28-130			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	1600		ug/L	2000		80	26-123			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	1600		ug/L	2000		80	29-147			
Surrogate: 13C-1,2,3,7,8-PeCDD	2000		ug/L	2000		99	25-181			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.002		ug/L	0.002		100	24-185			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	1700		ug/L	2000		83	28-136			

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Debby Wilson  
Project Manager

MWH-Pasadena/Boeing  
 618 Michillinda Avenue, Suite 200  
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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
<b>Batch: 356427 Extracted: 12/22/10</b>										
<b>Blank Analyzed: 12/23/2010 (G0L220000427B)</b>					<b>Source:</b>					
Surrogate: 13C-2,3,4,7,8-PeCDF	2000		ug/L	2000		100	21-178			
Surrogate: 13C-2,3,7,8-TCDD	1600		ug/L	2000		81	25-164			
Surrogate: 13C-2,3,7,8-TCDF	0.0015		ug/L	0.002		76	24-169			
Surrogate: 13C-OCDD	0.0034		ug/L	0.004		84	17-157			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.00082		ug/L	0.0008		102	35-197			
<b>LCS Analyzed: 12/28/2010 (G0L220000427C)</b>					<b>Source:</b>					
1,2,3,4,6,7,8-HpCDD	0.00114	0.00005	ug/L	0.001		114	70-140			B
1,2,3,4,6,7,8-HpCDF	0.00122	0.00005	ug/L	0.001		122	82-122			B
1,2,3,4,7,8,9-HpCDF	0.00121	0.00005	ug/L	0.001		121	78-138			
1,2,3,4,7,8-HxCDD	0.00127	0.00005	ug/L	0.001		127	70-164			
1,2,3,4,7,8-HxCDF	0.00112	0.00005	ug/L	0.001		112	72-134			
1,2,3,6,7,8-HxCDD	0.00107	0.00005	ug/L	0.001		107	76-134			
1,2,3,6,7,8-HxCDF	0.00114	0.00005	ug/L	0.001		114	84-130			
1,2,3,7,8,9-HxCDD	0.00119	0.00005	ug/L	0.001		119	64-162			
1,2,3,7,8,9-HxCDF	0.00115	0.00005	ug/L	0.001		115	78-130			
1,2,3,7,8-PeCDD	0.00119	0.00005	ug/L	0.001		119	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	0.00114	0.00005	ug/L	0.001		114	70-156			
2,3,4,7,8-PeCDF	0.00108	0.00005	ug/L	0.001		108	68-160			
2,3,7,8-TCDD	0.000233	0.00001	ug/L	0.0002		117	67-158			
2,3,7,8-TCDF	0.000206	0.00001	ug/L	0.0002		103	75-158			
OCDD	0.00211	0.0001	ug/L	0.002		106	78-144			B
OCDF	0.00201	0.0001	ug/L	0.002		100	63-170			B
Surrogate: 13C-1,2,3,4,6,7,8-HpCDD	0.00219		ug/L	0.002		109	26-166			
Surrogate: 13C-1,2,3,4,6,7,8-HpCDF	0.00189		ug/L	0.002		94	21-158			
Surrogate: 13C-1,2,3,4,7,8,9-HpCDF	0.0021		ug/L	0.002		105	20-186			
Surrogate: 13C-1,2,3,4,7,8-HxCDD	1630		ug/L	2000		82	21-193			
Surrogate: 13C-1,2,3,4,7,8-HxCDF	0.00153		ug/L	0.002		76	19-202			
Surrogate: 13C-1,2,3,6,7,8-HxCDD	1910		ug/L	2000		95	25-163			
Surrogate: 13C-1,2,3,6,7,8-HxCDF	0.00157		ug/L	0.002		79	21-159			
Surrogate: 13C-1,2,3,7,8,9-HxCDF	0.00154		ug/L	0.002		77	17-205			
Surrogate: 13C-1,2,3,7,8-PeCDD	1690		ug/L	2000		85	21-227			
Surrogate: 13C-1,2,3,7,8-PeCDF	0.0019		ug/L	0.002		95	21-192			
Surrogate: 13C-2,3,4,6,7,8-HxCDF	0.00156		ug/L	0.002		78	22-176			
Surrogate: 13C-2,3,4,7,8-PeCDF	0.00173		ug/L	0.002		86	13-328			

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 Project Manager

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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
<b>Batch: 356427 Extracted: 12/22/10</b>										
<b>LCS Analyzed: 12/28/2010 (G0L220000427C)</b>										
Surrogate: 13C-2,3,7,8-TCDD	1740		ug/L	2000		87	20-175			
Surrogate: 13C-2,3,7,8-TCDF	0.00158		ug/L	0.002		79	22-152			
Surrogate: 13C-OCDD	0.00402		ug/L	0.004		101	13-199			
Surrogate: 37Cl4-2,3,7,8-TCDD	0.000783		ug/L	0.0008		98	31-191			

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## METHOD BLANK/QC DATA

**8643**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8643 Extracted: 01/18/11</u></b>										
<b>LCS Analyzed: 01/18/2011 (S012300-03)</b>										
Uranium, Total	58.7	1	pCi/L	56.5		104	80-120			
<b>Blank Analyzed: 01/18/2011 (S012300-04)</b>										
Uranium, Total	0	1	pCi/L				-			U
<b>Duplicate Analyzed: 01/18/2011 (S012300-05)</b>										
Uranium, Total	0.102	1	pCi/L		0.103		-	1		Jb

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 Project Manager



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## METHOD BLANK/QC DATA

### 900

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8643 Extracted: 12/31/10</u></b>										
<b>LCS Analyzed: 01/04/2011 (S012300-03)</b>										
Gross Alpha	43.6	3	pCi/L	40.4		108	70-130			
Gross Beta	33.7	4	pCi/L	35		96	70-130			
<b>Blank Analyzed: 01/04/2011 (S012300-04)</b>										
Gross Alpha	-0.006	3	pCi/L							U
Gross Beta	0.047	4	pCi/L							U
<b>Duplicate Analyzed: 01/04/2011 (S012300-05)</b>										
Gross Alpha	1.05	3	pCi/L		1.22			15		Jb
Gross Beta	1.72	4	pCi/L		1.61			7		Jb

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Debby Wilson  
 Project Manager

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 618 Michillinda Avenue, Suite 200  
 Arcadia, CA 91007  
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## METHOD BLANK/QC DATA

### 901.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8643 Extracted: 12/22/10</u></b>										
<b>LCS Analyzed: 12/29/2010 (S012300-03)</b>										
Cobalt-60	98.6	10	pCi/L	102		97	80-120			
Cesium-137	113	20	pCi/L	110		103	80-120			
<b>Blank Analyzed: 12/30/2010 (S012300-04)</b>										
Cesium-137	ND	20	pCi/L				-			U
Potassium-40	ND	25	pCi/L				-			U
<b>Duplicate Analyzed: 12/30/2010 (S012300-05)</b>										
Cesium-137	ND	20	pCi/L		0		-	0		U
Potassium-40	ND	25	pCi/L		0		-	0		U

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 Project Manager

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## METHOD BLANK/QC DATA

### 903.1

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8643 Extracted: 01/06/11</u></b>										
<b>LCS Analyzed: 01/06/2011 (S012300-03)</b>										
Radium-226	46.2	1	pCi/L	55.7		83	80-120			
<b>Blank Analyzed: 01/06/2011 (S012300-04)</b>										
Radium-226	0.052	1	pCi/L				-			U
<b>Duplicate Analyzed: 01/06/2011 (S012300-05)</b>										
Radium-226	0.84	1	pCi/L		0.332		-	87		Jb

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 Project Manager

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## METHOD BLANK/QC DATA

904

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8643 Extracted: 01/21/11</b>										
<b>LCS Analyzed: 01/21/2011 (S012300-03)</b>										
Radium-228	3.81	1	pCi/L	4.63		82	60-140			
<b>Blank Analyzed: 01/21/2011 (S012300-04)</b>										
Radium-228	0.032	1	pCi/L							U
<b>Duplicate Analyzed: 01/21/2011 (S012300-05)</b>										
Radium-228	0.187	1	pCi/L		0.118			0		U

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## METHOD BLANK/QC DATA

### 905

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b>Batch: 8643 Extracted: 01/07/11</b>										
<b>LCS Analyzed: 01/06/2011 (S012300-03)</b>										
Strontium-90	17.1	2	pCi/L	17.5		98	80-120			
<b>Blank Analyzed: 01/06/2011 (S012300-04)</b>										
Strontium-90	-0.11	2	pCi/L				-			U
<b>Duplicate Analyzed: 01/06/2011 (S012300-05)</b>										
Strontium-90	-0.065	2	pCi/L		0.012		-	0		U

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Debby Wilson  
 Project Manager

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

Project ID: Routine Outfall 009 2010  
 Routine Outfall 009 Grab and Composite  
 Report Number: ITL1881

Sampled: 12/18/10  
 Received: 12/18/10

## METHOD BLANK/QC DATA

906

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
<b><u>Batch: 8643 Extracted: 01/10/11</u></b>										
<b>LCS Analyzed: 01/13/2011 (S012300-03)</b>										
Tritium	2330	500	pCi/L	2550		91	80-120			
<b>Blank Analyzed: 01/13/2011 (S012300-04)</b>										
Tritium	-94.9	500	pCi/L							U
<b>Duplicate Analyzed: 01/13/2011 (S012300-05)</b>										
Tritium	-140	500	pCi/L					0		U

TestAmerica Irvine

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 Attention: Bronwyn Kelly

Project ID: Routine Outfall 009 2010  
 Routine Outfall 009 Grab and Composite  
 Report Number: ITL1881  
 Sampled: 12/18/10  
 Received: 12/18/10

### 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
ITL1881-01	1664-HEM	Hexane Extractable Material (Oil & Greas	mg/l	0.28	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
ITL1881-02	Cadmium-200.8	Cadmium	ug/l	0	1.0	3.1
ITL1881-02	Chloride - 300.0	Chloride	mg/l	2.48	0.50	150
ITL1881-02	Copper-200.8	Copper	ug/l	3.86	2.00	14
ITL1881-02	Lead-200.8	Lead	ug/l	2.25	1.0	5.2
ITL1881-02	Nitrogen, NO3+NO2 -N EPA 300.0	Nitrate/Nitrite-N	mg/l	0.51	0.26	8
ITL1881-02	Sulfate-300.0	Sulfate	mg/l	3.40	0.50	300
ITL1881-02	TDS - SM2540C	Total Dissolved Solids	mg/l	64	10	950

### 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
-----------	----------	---------	-------	--------	-----	------------------

TestAmerica Irvine

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

Project ID: Routine Outfall 009 2010  
Routine Outfall 009 Grab and Composite  
Report Number: ITL1881

Sampled: 12/18/10  
Received: 12/18/10

## DATA QUALIFIERS AND DEFINITIONS

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

Debby Wilson  
Project Manager

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**ITL1881 <Page 34 of 37>**



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

Project ID: Routine Outfall 009 2010  
Routine Outfall 009 Grab and Composite  
Report Number: ITL1881

Sampled: 12/18/10  
Received: 12/18/10

## Certification Summary

### TestAmerica Irvine

Method	Matrix	Nelac	California
EDD + Level 4	Water	N/A	N/A
EPA 1664A	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
Filtration	Water	N/A	N/A
Level 4	Water		
SM 2540D	Water	X	X
SM2540C	Water	X	
SM4500CN-E	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](http://www.testamericainc.com)*

### Subcontracted Laboratories

### TestAmerica Irvine

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 009 2010  
Routine Outfall 009 Grab and Composite  
Report Number: ITL1881

Sampled: 12/18/10  
Received: 12/18/10

## Eberline Services - SUB

2030 Wright Avenue - Richmond, CA 94804

Analysis Performed: Gamma Spec  
Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Gross Alpha  
Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Gross Beta  
Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Radium, Combined  
Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Strontium 90  
Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Tritium  
Samples: ITL1881-02

Samples: ITL1881-03

Analysis Performed: Uranium, Combined  
Samples: ITL1881-02

Samples: ITL1881-03

## TestAmerica Irvine

Debby Wilson  
Project Manager

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

Project ID: Routine Outfall 009 2010  
Routine Outfall 009 Grab and Composite  
Report Number: ITL1881

Sampled: 12/18/10  
Received: 12/18/10

## TestAmerica Buffalo

10 Hazelwood Drive, Suite 106 - Amherst, NY 14228

Method Performed: 8643  
Samples: ITL1881-02, ITL1881-03

Method Performed: 900  
Samples: ITL1881-02, ITL1881-03

Method Performed: 901.1  
Samples: ITL1881-02, ITL1881-03

Method Performed: 903.1  
Samples: ITL1881-02, ITL1881-03

Method Performed: 904  
Samples: ITL1881-02, ITL1881-03

Method Performed: 905  
Samples: ITL1881-02, ITL1881-03

Method Performed: 906  
Samples: ITL1881-02

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

880 Riverside Parkway - West Sacramento, CA 95605

Method Performed: EPA-5 1613B  
Samples: ITL1881-02

## TestAmerica Irvine

Debby Wilson  
Project Manager







# EBERLINE

SERVICES

EBERLINE ANALYTICAL CORPORATION  
2030 Wright Avenue  
Richmond, California 94804-3849  
Phone (510) 235-2633 Fax (510) 235-0438  
Toll Free (800) 841-5487  
[www.eberlineservices.com](http://www.eberlineservices.com)

February 4, 2011

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

**Reference: Test America-Irvine ITL1881  
Eberline Analytical Report S012300-8643  
Sample Delivery Group 8643**

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for two water samples received under Test America Job No. ITL1881. The samples were received on December 21, 2010.

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

Sincerely,

N. Joseph Verville  
Client Services Manager

RM/ljb

Enclosure: Level IV CLP-like Data Package CD

### 1.0 General Comments

Sample delivery group 8643 consists of the analytical results and supporting documentation for two water samples. 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 ITL1881-02 (Trip Blank) 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  $2\sigma$  error (Total):

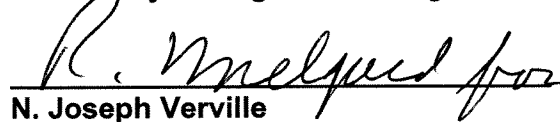
Analysis	Method Error
Gross alpha	20.6%
Gross beta	11.0%
Tritium	10.0%
Sr-90	10.4%
Ra-226	16.4%
Ra-228	10.4%
Uranium, Total	
Gamma Spec.	7.0%

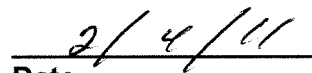
#### 4.0 Analysis Notes

- 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) was greater than the required detection limit of 2.00 pCi/L. No other 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 the duplicate of sample ITL2724-02 (28.0 pCi/L) was greater than the required detection limit of 25 pCi/L. 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

  
Date



EBERLINE ANALYTICAL  
SDG 8643

SDG 8643  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL1881

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

R. Melgaard

Reviewed by

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-TOC  
Version 3.06  
Report date 02/03/11

EBERLINE ANALYTICAL  
SDG 8643

SDG 8643  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITL1881

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 02/03/11

EBERLINE ANALYTICAL

SDG 8643

SDG 8643  
Contact N. Joseph Verville

GUIDE , c o n t .

Client Test America, Inc.  
Contract ITL1881

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 02/03/11

**EBERLINE ANALYTICAL**

SDG 8643

SDG 8643  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITL1881

**LAB SAMPLE SUMMARY**

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S012300-01	ITL1881-02	Boeing - SSFL	WATER			ITL1881	12/18/10 17:10
S012300-02	ITL1881-02 (Trip Blank)	Boeing - SSFL	WATER			ITL1881	12/18/10 17:10
S012300-03	Lab Control Sample		WATER				
S012300-04	Method Blank		WATER				
S012300-05	Duplicate (S012300-01)	Boeing - SSFL	WATER				12/18/10 17:10
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 02/03/11

**EBERLINE ANALYTICAL**

SDG 8643

SDG 8643  
 Contact N. Joseph Verville

**QC SUMMARY**

Client Test America, Inc.  
 Contract ITL1881

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8643	ITL1881	ITL1881-02	WATER		9.5 L		12/21/10	3	S012300-01	8643-001
		ITL1881-02 (Trip Blank)	WATER		9.5 L		12/21/10	3	S012300-02	8643-002
		Method Blank	WATER						S012300-04	8643-004
		Lab Control Sample	WATER						S012300-03	8643-003
		Duplicate (S012300-01)	WATER			9.5 L		12/21/10	3	S012300-05
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

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 02/03/11

**EBERLINE ANALYTICAL**

SDG 8643

SDG 8643  
Contact N. Joseph Verville

**PREP BATCH SUMMARY**

Client Test America, Inc.  
Contract ITL1881

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALIFIERS	
			BATCH	2σ %	CLIENT	MORE	RE	BLANK		LCS
<b>Beta Counting</b>										
AC	WATER	Radium-228 in Water	7258-155	10.4	1		1	1	1/1	
			7271-039	10.4	1		1	1	1/0/1	
SR	WATER	Strontium-90 in Water	7258-155	10.4	1		1	1	1/1	
			7271-039	10.4	1		1	1	1/0/1	
<b>Gas Proportional Counting</b>										
80A	WATER	Gross Alpha in Water	7258-155	20.6	1		1	1	1/1	
			7271-039	20.6	1		1	1	1/0/1	
80B	WATER	Gross Beta in Water	7258-155	11.0	1		1	1	1/1	
			7271-039	11.0	1		1	1	1/0/1	
<b>Gamma Spectroscopy</b>										
GAM	WATER	Gamma Emitters in Water	7258-155	7.0	1		1	1	1/1	
			7271-039	7.0	1		1	1	1/0/1	
<b>Kinetic Phosphorimetry, ug</b>										
U_T	WATER	Uranium, Total	7258-155		1		1	1	1/1	
			7271-039		1		1	1	1/0/1	
<b>Liquid Scintillation Counting</b>										
H	WATER	Tritium in Water	7258-155	10.0	1		1	1	1/1	
<b>Radon Counting</b>										
RA	WATER	Radium-226 in Water	7258-155	16.4	1		1	1	1/1	
			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 02/03/11

**EBERLINE ANALYTICAL**

SDG 8643

SDG 8643  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL1881

**LAB WORK SUMMARY**

LAB SAMPLE	CLIENT SAMPLE ID										
COLLECTED	LOCATION	MATRIX			SUP-						
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD		
S012300-01	ITL1881-02		8643-001	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water		
12/18/10	Boeing - SSFL	WATER	8643-001	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water		
12/21/10	ITL1881		8643-001	AC		01/21/11	01/27/11	BW	Radium-228 in Water		
			8643-001	GAM		12/29/10	01/14/11	MWT	Gamma Emitters in Water		
			8643-001	H		01/13/11	01/18/11	BW	Tritium in Water		
			8643-001	RA		01/06/11	01/24/11	BW	Radium-226 in Water		
			8643-001	SR		01/06/11	01/26/11	BW	Strontium-90 in Water		
			8643-001	U_T		01/18/11	01/21/11	BW	Uranium, Total		
S012300-02	ITL1881-02 (Trip Blank)		8643-002	80A/80		01/14/11	01/17/11	BW	Gross Alpha in Water		
12/18/10	Boeing - SSFL	WATER	8643-002	80B/80		01/14/11	01/17/11	BW	Gross Beta in Water		
12/21/10	ITL1881		8643-002	AC		01/26/11	01/27/11	BW	Radium-228 in Water		
			8643-002	GAM		01/13/11	01/14/11	MWT	Gamma Emitters in Water		
			8643-002	RA		01/24/11	01/24/11	BW	Radium-226 in Water		
			8643-002	SR		01/24/11	01/26/11	BW	Strontium-90 in Water		
			8643-002	U_T		01/20/11	01/21/11	BW	Uranium, Total		
S012300-03	Lab Control Sample		8643-003	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water		
		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		8643-004	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water		
		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		

WORK SUMMARY

Page 1

SUMMARY DATA SECTION

Page 6

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LWS  
Version 3.06  
Report date 02/03/11

**EBERLINE ANALYTICAL**

SDG 8643

**WORK SUMMARY, cont.**

SDG 8643  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL1881

LAB SAMPLE	CLIENT SAMPLE ID									
COLLECTED	LOCATION	MATRIX			SUF-					
RECEIVED	CUSTODY	SAS no	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
S012300-05	Duplicate (S012300-01)		8643-005	80A/80		01/04/11	01/17/11	BW	Gross Alpha in Water	
12/18/10	Boeing - SSFL	WATER	8643-005	80B/80		01/04/11	01/17/11	BW	Gross Beta in Water	
12/21/10			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	
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	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	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	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	

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LWS  
Version 3.06  
Report date 02/03/11



EBERLINE ANALYTICAL

SDG 8643

Client Test America, Inc.

Contract ITL1881

SDG 8643

Contact N. Joseph Verville

WORK SUMMARY, cont.

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	2			2	2	2		8
80B/80		Gross Beta in Water	900.0	2			2	2	2		8
AC		Radium-228 in Water	904.0	2			2	2	2		8
GAM		Gamma Emitters in Water	901.1	2			2	2	2		8
H		Tritium in Water	906.0	1			1	1	1		4
RA		Radium-226 in Water	903.1	2			2	2	2		8
SR		Strontium-90 in Water	905.0	2			2	2	2		8
U_T		Uranium, Total	D5174	2			2	2	2		8
TOTALS				15			15	15	15		60

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 02/03/11



EBERLINE ANALYTICAL

SDG 8643

8657-003

Method Blank

METHOD BLANK

SDG <u>8643</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>ITL1881</u>
Lab sample id <u>S101004-03</u>	Client sample id <u>Method Blank</u>
Dept sample id <u>8657-003</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	N.A.			500		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>02/03/11</u>

EBERLINE ANALYTICAL

SDG 8643

8643-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>8643</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>ITL1881</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 LMES (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



EBERLINE ANALYTICAL

SDG 8643

8643-005

ITL1881-02

DUPLICATE

SDG <u>8643</u>	Client <u>Test America, Inc.</u>	
Contact <u>N. Joseph Verville</u>	Contract <u>ITL1881</u>	
DUPLICATE	ORIGINAL	
Lab sample id <u>S012300-05</u>	Lab sample id <u>S012300-01</u>	Client sample id <u>ITL1881-02</u>
Dept sample id <u>8643-005</u>	Dept sample id <u>8643-001</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
	Received <u>12/21/10</u>	Collected/Volume <u>12/18/10 17:10</u> <u>9.5 L</u>
		Chain of custody id <u>ITL1881</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	1.05	0.34	0.322		3.00		J	80A	1.22	0.35	0.326		J	15	78	0.6
Gross Beta	1.72	0.54	0.800		4.00		J	80B	1.61	0.57	0.853		J	7	74	0.3
Tritium	-140	160	295		500		U	H	-81.5	170	294		U	-		0.5
Radium-226	0.840	0.40	0.558		1.00		J	RA	0.332	0.37	0.604		U	87	144	1.8
Radium-228	0.187	0.20	0.435		1.00		U	AC	0.118	0.21	0.459		U	-		0.5
Strontium-90	-0.065	0.41	0.986		2.00		U	SR	0.012	0.48	1.12		U	-		0.2
Uranium, Total	0.102	0.014	0.019		1.00		J	U_T	0.103	0.014	0.019		J	1	29	0.1
Potassium-40	U		20.3		25.0		U	GAM	U		17.8		U	-		0.2
Cesium-137	U		1.86		20.0		U	GAM	U		1.28		U	-		0.5

QC-DUP#1 76650

DUPLICATES

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Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>02/03/11</u>

**EBERLINE ANALYTICAL**

SDG 8643

8657-004

ITL2724-02

**DUPLICATE**

SDG <u>8643</u>		Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>		Contract <u>ITL1881</u>
<b>DUPLICATE</b>	<b>ORIGINAL</b>	
Lab sample id <u>S101004-04</u>	Lab sample id <u>S101004-01</u>	Client sample id <u>ITL2724-02</u>
Dept sample id <u>8657-004</u>	Dept sample id <u>8657-001</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
	Received <u>12/31/10</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 pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL		MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	DER σ
	pCi/L	2σ ERR (COUNT)					pCi/L	2σ ERR (COUNT)					
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	N.A.			500		H	N.A.						
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

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>02/03/11</u>

DUPLICATES

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EBERLINE ANALYTICAL

SDG 8643

8643-001

ITL1881-02

DATA SHEET

SDG <u>8643</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>ITL1881</u>
Lab sample id <u>S012300-01</u>	Client sample id <u>ITL1881-02</u>
Dept sample id <u>8643-001</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
Received <u>12/21/10</u>	Collected/Volume <u>12/18/10 17:10</u> <u>9.5 L</u>
	Chain of custody id <u>ITL1881</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	1.22	0.35	0.326	3.00	J	80A
Gross Beta	12587472	1.61	0.57	0.853	4.00	J	80B
Tritium	10028178	-81.5	170	294	500	U	H
Radium-226	13982633	0.332	0.37	0.604	1.00	U	RA
Radium-228	15262201	0.118	0.21	0.459	1.00	U	AC
Strontium-90	10098972	0.012	0.48	1.12	2.00	U	SR
Uranium, Total		0.103	0.014	0.019	1.00	J	U_T
Potassium-40	13966002	U		17.8	25.0	U	GAM
Cesium-137	10045973	U		1.28	20.0	U	GAM

DATA SHEETS

Page 1

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>
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EBERLINE ANALYTICAL

SDG 8643

8643-002

ITL1881-02 (Trip Blank)

DATA SHEET

SDG <u>8643</u>	Client <u>Test America, Inc.</u>
Contact <u>N. Joseph Verville</u>	Contract <u>ITL1881</u>
Lab sample id <u>S012300-02</u>	Client sample id <u>ITL1881-02 (Trip Blank)</u>
Dept sample id <u>8643-002</u>	Location/Matrix <u>Boeing - SSFL</u> <u>WATER</u>
Received <u>12/21/10</u>	Collected/Volume <u>12/18/10 17:10</u> <u>9.5 L</u>
	Chain of custody id <u>ITL1881</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587461	<u>-0.162</u>	0.14	0.332	3.00	U	80A
Gross Beta	12587472	<u>-0.780</u>	0.56	0.978	4.00	U	80B
Radium-226	13982633	0.415	0.32	0.492	1.00	U	RA
Radium-228	15262201	-0.097	0.16	0.383	1.00	U	AC
Strontium-90	10098972	0.238	0.35	0.653	2.00	U	SR
Uranium, Total		0	0.007	0.017	1.00	U	U_T
Potassium-40	13966002	U		14.5	25.0	U	GAM
Cesium-137	10045973	U		1.14	20.0	U	GAM

Lab id <u>EAS</u>
Protocol <u>TA</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
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Report date <u>02/03/11</u>

**EBERLINE ANALYTICAL**

SDG 8643

Test AC Matrix WATER  
 SDG 8643  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITL1881

**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 7258-155

S012300-01	8643-001	ITL1881-02	U
S012300-03	8643-003	Lab Control Sample	ok
S012300-04	8643-004	Method Blank	U
S012300-05	8643-005	Duplicate (S012300-01)	- U

Preparation batch 7271-039

S012300-02	8643-002	ITL1881-02 (Trip Blank)	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**

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

Preparation batch 7258-155      2σ prep error 10.4 %      Reference Lab Notebook No. 7258 pg. 155

S012300-01	ITL1881-02	0.459	1.80				80		150			34	01/21/11	01/21	GRB-201
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

Preparation batch 7271-039      2σ prep error 10.4 %      Reference Lab Notebook No. 7271 pg.039

S012300-02	ITL1881-02 (Trip Blank)	0.383	1.80				82		150			39	01/26/11	01/26	GRB-230
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

METHOD SUMMARIES

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EBERLINE ANALYTICAL

SDG 8643

LAB METHOD SUMMARY, cont.

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix \_\_\_\_\_

SDG 8643

Contact N. Joseph Verville

Client Test America, Inc.

Contract ITL1881

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

AVERAGES  $\pm$  2 SD MDA 0.494  $\pm$  0.291  
FOR 8 SAMPLES YIELD 83  $\pm$  8

Lab id EAS

Protocol TA

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 02/03/11



EBERLINE ANALYTICAL

SDG 8643

LAB METHOD SUMMARY, cont.

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR \_\_\_\_\_ Matrix \_\_\_\_\_  
SDG 8643 \_\_\_\_\_  
Contact N. Joseph Verville \_\_\_\_\_

Client Test America, Inc.  
Contract ITL1881

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

AVERAGES ± 2 SD MDA 1.22 ± 0.912  
FOR 8 SAMPLES YIELD 69 ± 31

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LMS  
Version 3.06  
Report date 02/03/11

# EBERLINE ANALYTICAL

SDG 8643

Test <u>80A</u> Matrix <u>WATER</u>
SDG <u>8643</u>
Contact <u>N. Joseph Verville</u>

Client <u>Test America, Inc.</u>
Contract <u>ITL1881</u>

## LAB METHOD SUMMARY

GROSS ALPHA IN WATER  
GAS PROPORTIONAL COUNTING

### RESULTS

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

**Preparation batch 7258-155**

S012300-01	80	8643-001	ITL1881-02	1.22 J
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

**Preparation batch 7271-039**

S012300-02	80	8643-002	ITL1881-02 (Trip Blank)	U
S101004-02	80	8657-002	Lab Control Sample	ok
S101004-03	80	8657-003	Method Blank	U
S101004-04	80	8657-004	Duplicate (S101004-01)	ok J

Nominal values and limits from method      RDLs (pCi/L)      3.00

### 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 7258-155      2σ prep error 20.6 %      Reference Lab Notebook No. 7258 pg. 155**

S012300-01	80	ITL1881-02	0.326	0.300			13		400			17	12/31/10	01/04	GRB-101
S012300-03	80	Lab Control Sample	0.575	0.250			54		400				12/31/10	01/04	GRB-103
S012300-04	80	Method Blank	0.617	0.250			56		400				12/31/10	01/04	GRB-104
S012300-05	80	Duplicate (S012300-01)	0.322	0.300			14		400			17	12/31/10	01/04	GRB-109

**Preparation batch 7271-039      2σ prep error 20.6 %      Reference Lab Notebook No. 7271 pg.039**

S012300-02	80	ITL1881-02 (Trip Blank)	0.332	0.300			0		400			27	01/14/11	01/14	GRB-103
S101004-02	80	Lab Control Sample	0.821	0.250			62		400				01/11/11	01/11	GRB-214
S101004-03	80	Method Blank	0.620	0.250			61		400				01/11/11	01/11	GRB-216
S101004-04	80	Duplicate (S101004-01)	0.372	0.300			20		400			12	01/11/11	01/11	GRB-105

Nominal values and limits from method      3.00      0.250      0-200      100      180

METHOD SUMMARIES

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EBERLINE ANALYTICAL

SDG 8643

LAB METHOD SUMMARY, cont.

GROSS ALPHA IN WATER  
GAS PROPORTIONAL COUNTING

Test 80A Matrix \_\_\_\_\_  
SDG 8643  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL1881

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

AVERAGES ± 2 SD MDA 0.498 ± 0.373  
FOR 8 SAMPLES RESIDUE 35 ± 51

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LMS  
Version 3.06  
Report date 02/03/11

**EBERLINE ANALYTICAL**

SDG 8643

**LAB METHOD SUMMARY**

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Test 80B Matrix WATER  
 SDG 8643  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITL1881

**RESULTS**

LAB	RAW	SUF-			
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
Preparation batch 7258-155					
S012300-01	80	8643-001	ITL1881-02	1.61	J
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
Preparation batch 7271-039					
S012300-02	80	8643-002	ITL1881-02 (Trip Blank)	U	
S101004-02	80	8657-002	Lab Control Sample	ok	
S101004-03	80	8657-003	Method Blank	U	
S101004-04	80	8657-004	Duplicate (S101004-01)	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 7258-155      2σ prep error 11.0 %      Reference Lab Notebook No. 7258 pg. 155															
S012300-01	80	ITL1881-02	0.853	0.300			13	400				17	12/31/10	01/04	GRB-101
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
Preparation batch 7271-039      2σ prep error 11.0 %      Reference Lab Notebook No. 7271 pg.039															
S012300-02	80	ITL1881-02 (Trip Blank)	0.978	0.300			0	400				27	01/14/11	01/14	GRB-103
S101004-02	80	Lab Control Sample	1.13	0.250			62	400					01/11/11	01/11	GRB-214
S101004-03	80	Method Blank	1.11	0.250			61	400					01/11/11	01/11	GRB-216
S101004-04	80	Duplicate (S101004-01)	0.884	0.300			20	400				12	01/11/11	01/11	GRB-105
Nominal values and limits from method			4.00	0.250			0-200	100				180			

Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 02/03/11

METHOD SUMMARIES

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SUMMARY DATA SECTION

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EBERLINE ANALYTICAL

SDG 8643

LAB METHOD SUMMARY, cont.

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Test 80E Matrix \_\_\_\_\_  
SDG 8643  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL1881

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

AVERAGES ± 2 SD MDA 0.992 ± 0.302  
FOR 8 SAMPLES RESIDUE 35 ± 51

Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LMS  
Version 3.06  
Report date 02/03/11

**EBERLINE ANALYTICAL**

SDG 8643

**LAB METHOD SUMMARY**

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Test GAM Matrix WATER  
 SDG 8643  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITL1881

**RESULTS**

LAB	RAW	SUF-			Cobalt-60	Cesium-137
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID			
Preparation batch 7258-155						
S012300-01		8643-001	ITL1881-02			U
S012300-03		8643-003	Lab Control Sample	ok		ok
S012300-04		8643-004	Method Blank			U
S012300-05		8643-005	Duplicate (S012300-01)			- U
Preparation batch 7271-039						
S012300-02		8643-002	ITL1881-02 (Trip Blank)			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 7258-155      2σ prep error 7.0 %      Reference Lab Notebook No. 7258 pg. 155															
S012300-01		ITL1881-02		2.00					634			11	12/22/10	12/29	01,03,00
S012300-03		Lab Control Sample		2.00					630				12/22/10	12/29	01,04,00
S012300-04		Method Blank		2.00					406				12/22/10	12/30	01,01,00
S012300-05		Duplicate (S012300-01)		2.00					406			12	12/22/10	12/30	01,02,00
Preparation batch 7271-039      2σ prep error 7.0 %      Reference Lab Notebook No. 7271 pg.039															
S012300-02		ITL1881-02 (Trip Blank)		2.00					711			26	01/10/11	01/13	MB,08,00
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			

Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 02/03/11

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SUMMARY DATA SECTION

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EBERLINE ANALYTICAL

SDG 8643

LAB METHOD SUMMARY, cont.

GAMMA EMITTERS IN WATER  
GAMMA SPECTROSCOPY

Test GAM Matrix \_\_\_\_\_  
SDG 8643  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL1881

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

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Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LMS  
Version 3.06  
Report date 02/03/11

**EBERLINE ANALYTICAL**

SDG 8643

**LAB METHOD SUMMARY**

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY, UG

Test U T Matrix WATER  
 SDG 8643  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITL1881

**RESULTS**

LAB	RAW	SUF-		Uranium,
SAMPLE ID	TEST FIX	PLANCHET	CLIENT SAMPLE ID	Total
Preparation batch 7258-155				
S012300-01		8643-001	ITL1881-02	0.103 J
S012300-03		8643-003	Lab Control Sample	ok
S012300-04		8643-004	Method Blank	U
S012300-05		8643-005	Duplicate (S012300-01)	ok J
Preparation batch 7271-039				
S012300-02		8643-002	ITL1881-02 (Trip Blank)	U
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 7258-155			2σ prep error		Reference Lab Notebook No. 7258 pg. 155										
S012300-01		ITL1881-02	0.019	0.0200								31	01/18/11	01/18	KPA-001
S012300-03		Lab Control Sample	0.188	0.0200									01/18/11	01/18	KPA-001
S012300-04		Method Blank	0.019	0.0200									01/18/11	01/18	KPA-001
S012300-05		Duplicate (S012300-01)	0.019	0.0200								31	01/18/11	01/18	KPA-001
Preparation batch 7271-039			2σ prep error		Reference Lab Notebook No. 7271 pg.039										
S012300-02		ITL1881-02 (Trip Blank)	0.017	0.0200								33	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			

Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 02/03/11

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EBERLINE ANALYTICAL

SDG 8643

LAB METHOD SUMMARY, cont.

URANIUM, TOTAL  
KINETIC PHOSPHORIMETRY, UG

Test U T Matrix \_\_\_\_\_

SDG 8643

Contact N. Joseph Verville

Client Test America, Inc.

Contract ITL1881

PROCEDURES REFERENCE D5174

AVERAGES  $\pm$  2 SD

MDA 0.059  $\pm$  0.151

FOR 8 SAMPLES

YIELD \_\_\_\_\_  $\pm$  \_\_\_\_\_

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS

Protocol TA

Version Ver 1.0

Form DVD-LMS

Version 3.06

Report date 02/03/11

**EBERLINE ANALYTICAL**

SDG 8643

**LAB METHOD SUMMARY**

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H Matrix WATER  
SDG 8643  
Contact N. Joseph Verville

Client Test America, Inc.  
Contract ITL1881

**RESULTS**

LAB	RAW	SUF-			
SAMPLE ID	TEST	FIX	PLANCHET	CLIENT SAMPLE ID	Tritium
Preparation batch 7258-155					
S012300-01			8643-001	ITL1881-02	U
S012300-03			8643-003	Lab Control Sample	ok
S012300-04			8643-004	Method Blank	U
S012300-05			8643-005	Duplicate (S012300-01)	- 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 7258-155      2σ prep error 10.0 %      Reference Lab Notebook No. 7258 pg. 155																
S012300-01			ITL1881-02	294	0.0100			100		<u>50</u>			26	01/10/11	01/13	LSC-004
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

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 ± 2.83  
FOR 4 SAMPLES      YIELD 55 ± 104

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-LMS  
Version 3.06  
Report date 02/03/11

**EBERLINE ANALYTICAL**

SDG 8643

**LAB METHOD SUMMARY**

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix WATER  
 SDG 8643  
 Contact N. Joseph Verville

Client Test America, Inc.  
 Contract ITL1881

**RESULTS**

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

Preparation batch 7258-155

S012300-01		8643-001	ITL1881-02	U
S012300-03		8643-003	Lab Control Sample	ok
S012300-04		8643-004	Method Blank	U
S012300-05		8643-005	Duplicate (S012300-01)	ok    J

Preparation batch 7271-039

S012300-02		8643-002	ITL1881-02 (Trip Blank)	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 7258-155      2σ prep error 16.4 %    Reference Lab Notebook No. 7258 pg. 155

S012300-01		ITL1881-02	0.604	0.100				100		132		19	01/06/11	01/06	RN-015
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

Preparation batch 7271-039      2σ prep error 16.4 %    Reference Lab Notebook No. 7271 pg.039

S012300-02		ITL1881-02 (Trip Blank)	0.492	0.100				100		150		37	01/24/11	01/24	RN-012
S101004-02		Lab Control Sample	0.639	0.100				100		106			01/21/11	01/21	RN-011
S101004-03		Method Blank	0.627	0.100				100		106			01/21/11	01/21	RN-015
S101004-04		Duplicate (S101004-01)	0.566	0.100				100		106		22	01/21/11	01/21	RN-014

Nominal values and limits from method            1.00    0.100            100            180

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS  
 Protocol TA  
 Version Ver 1.0  
 Form DVD-LMS  
 Version 3.06  
 Report date 02/03/11

EBERLINE ANALYTICAL

SDG 8643

LAB METHOD SUMMARY, cont.

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix \_\_\_\_\_  
SDG 8643 \_\_\_\_\_  
Contact N. Joseph Verville \_\_\_\_\_

Client Test America, Inc. \_\_\_\_\_  
Contract ITL1881 \_\_\_\_\_

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

AVERAGES ± 2 SD MDA 0.632 ± 0.238  
FOR 8 SAMPLES YIELD 100 ± 0

y

METHOD SUMMARIES

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SUMMARY DATA SECTION

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Lab id EAS \_\_\_\_\_  
Protocol TA \_\_\_\_\_  
Version Ver 1.0 \_\_\_\_\_  
Form DVD-LMS \_\_\_\_\_  
Version 3.06 \_\_\_\_\_  
Report date 02/03/11 \_\_\_\_\_



EBERLINE ANALYTICAL

SDG 8643

SDG 8643  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITL1881

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

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SUMMARY DATA SECTION

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Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 02/03/11

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SDG 8643  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITL1881

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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Lab id EAS  
Protocol TA  
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SDG 8643

SDG 8643  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITL1881

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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SUMMARY DATA SECTION

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

SDG 8643

SDG 8643  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITL1881

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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SUMMARY DATA SECTION

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Lab id EAS  
Protocol TA  
Version Ver 1.0  
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Version 3.06  
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EBERLINE ANALYTICAL

SDG 8643

SDG 8643  
 Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
 Contract ITL1881

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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SUMMARY DATA SECTION

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 Protocol TA  
 Version Ver 1.0  
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EBERLINE ANALYTICAL

SDG 8643

SDG 8643  
Contact N. Joseph Verville

GUIDE, cont.

Client Test America, Inc.  
Contract ITL1881

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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SUMMARY DATA SECTION

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Lab id EAS  
Protocol TA  
Version Ver 1.0  
Form DVD-RG  
Version 3.06  
Report date 02/03/11

EBERLINE ANALYTICAL

SDG 8643

SDG 8643  
Contact N. Joseph Verville

REPORT GUIDE

Client Test America, Inc.  
Contract ITL1881

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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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'

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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

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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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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.

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**SUBCONTRACT ORDER**  
**TestAmerica Irvine**

**ITL1881**

8643

**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
<b>Sample ID: ITL1881-02 (Outfall 009 (Comp) - Water)</b>				
			Sampled: 12/18/10 17:10	
Gamma Spec-O	mg/kg	12/23/10	12/18/11 17:10	Out Eberline, k-40 and cs-137 only, DO NOT FILTER!
Gross Alpha-O	pCi/L	12/23/10	06/16/11 17:10	Out Eberline, Boeing permit, DO NOT FILTER!
Gross Beta-O	pCi/L	12/23/10	06/16/11 17:10	Out Eberline Boeing permit, DO NOT FILTER!
Radium, Combined-O	pCi/L	12/23/10	12/18/11 17:10	Out Eberline Boeing permit, DO NOT FILTER!
Strontium 90-O	pCi/L	12/23/10	12/18/11 17:10	Out Eberline, Boeing permit, DO NOT FILTER!
Tritium-O	pCi/L	12/23/10	12/18/11 17:10	Out Eberline, Boeing permit, DO NOT FILTER!
Uranium, Combined-O	pCi/L	12/23/10	12/18/11 17:10	Out Eberline, Boeing permit, DO NOT FILTER!

*Containers Supplied:*

2.5 gal Poly (H)  $HNO_3$  500 mL Amber (I)

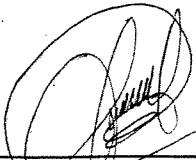
**Sample ID: ITL1881-03 (Trip Blank - Water)**

Sampled: 12/18/10 17:10    **HOLD**

HOLD	N/A	12/23/10	12/18/11 17:10
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*Containers Supplied:*

2.5 gal Poly (A)  $HNO_3$

  
 Released By \_\_\_\_\_  
 \_\_\_\_\_  
 Released By **FED EX**

12/20/10  
 Date/Time  
 12/21/10 10:00  
 Date/Time

Fed-EX      12/20/10  
 Received By \_\_\_\_\_ Date/Time  
 \_\_\_\_\_  
 Received By **flex kelner**      12/21/10  
 Date/Time





# RICHMOND, CA LABORATORY

## SAMPLE RECEIPT CHECKLIST

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Client: TEST AMERICA City IRVINE State CA

Date/Time received 12/21/10 10:00 CoC No. ITL 1881

Container I.D. No. SEVERN TRENT 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: 2 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 \_\_\_\_\_
13. Describe any anomalies: \_\_\_\_\_

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

15. Inspected by Jrk Date: 12/21/10 Time: 14:10

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
<u>ITL1881-02</u>	<u>&lt; 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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